University of Iowa Responsible Conduct of Research (RCR)

The University of Iowa has a history of promoting an environment of the highest ethical conduct of research and scholarly activities. A Responsible Conduct of Research (RCR) program has been instituted. Program content and dissemination continues to evolve under the joint sponsorship and responsibility of the Vice President for Research and the Graduate College.

Overall Scope


Our current RCR program focuses on four groups specifically engaged in NIH-/NSF-funded research or other scholarly creativity involving undergraduates, predocs, postdocs and early career faculty holding NIH K-Awards. For the purposes of RCR education, members of these four groups are designated as trainees.

If the trainee is engaged in research that is funded by NIH or NSF (e.g., investigator initiated, career award, fellowship, or training grant), then the trainee must complete the appropriate RCR program described below.

Options

A synopsis of RCR options for trainees is provided in Table 1 below. As an example, a predoc or postdoc funded by a NIH T32 training grant would take the Didactic and Small Group Discussion RCR course offered by the Graduate College. An undergraduate supported by a NSF grant would take the on-line Collaborative Institutional Training Initiative (CITI) RCR training. Successful completion of the appropriate option will meet the University of Iowa RCR training requirement.
### Table 1: Initial Institutional RCR Training Requirements

<table>
<thead>
<tr>
<th>Oversight of Content Delivery</th>
<th>Undergrad Trainees and individuals with a limited term appointment</th>
<th>Predoc Trainee</th>
<th>NIH F30 &amp; F31 Predoc Fellows</th>
<th>Postdoc Trainee</th>
<th>NIH F32 Postdoc Fellows</th>
<th>NIH K-Award Faculty</th>
<th>Professional Degree Students *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice President for Research</td>
<td>On-line CITI RCR training</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>On-line CITI RCR training</td>
</tr>
<tr>
<td>Graduate College</td>
<td>N/A</td>
<td>Didactic and Small Group Discussion course 650:270</td>
<td>Didactic and Small Group Discussion course 650:270</td>
<td>Didactic and Small Group Discussion course 650:604</td>
<td>Didactic and Small Group Discussion course 650:604</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

* e.g., AuD, DDS, DNP, MD, MHA, MPH, MSN, PharmD

### Table 2: Additional Programmatic RCR Training

<table>
<thead>
<tr>
<th>Oversight of Content Delivery</th>
<th>Undergrad Trainee</th>
<th>Predoc Trainee</th>
<th>Postdoc Trainee</th>
<th>NIH K-Award Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program holding T32 training grant</td>
<td>N/A</td>
<td>T32 Program specific training</td>
<td>T32 Program specific training</td>
<td>T32 Program specific training</td>
</tr>
</tbody>
</table>

**RCR Content**

RCR subject matter is specifically defined to accommodate research disciplines across the campus.

A) For all undergraduate trainees and individuals with a limited term appointment supported by NSF or other sponsors, the CITI RCR syllabus is followed:

- Introduction to the Responsible Conduct of Research
B) For all predoc, postdoc and K-Award faculty trainees regardless of funding source, a comprehensive RCR syllabus is followed:

- Introduction, Definitions and Rationale
- Data Acquisition, Management, Sharing and Ownership
- Conflict of Interest (COI) and Commitment (COC)
- Research Involving Human Subjects
- Animal Welfare in Research
- Research Misconduct
- Publication Practices and Responsible Authorship
- Mentor / Trainee Responsibilities and Relationships
- Peer Review
- Collaborative Science
- Financial Management
- Research Safety
- Responsibility to Society

Maintenance of RCR Content

RCR content will be reviewed at appropriate intervals and modified 1) to include new material such as pertinent discipline specific case studies and 2) to remove outdated or obsolete information. The faculty responsible for the Didactic and Small Group Discussion courses (650:270 and 650:604, Principles of Scholarly Integrity) will review their material annually to modify and/or update presentations and case studies. Trainee and faculty feedback will be obtained through course surveys at the end of each academic year.

An annual audit of the RCR program will take place to evaluate the overall training process and to monitor effectiveness, compliance and create opportunities for content/process improvement by the Office of the Vice President for Research.

Content Delivery and Assessment

For undergraduates the CITI RCR Training online WEB course (https://uiris.uiowa.edu/dashboard/citi) is used to introduce RCR concepts and to
provide case based training opportunities for undergraduates. On-line testing is employed to measure comprehension. This is the most feasible training mechanism for those undergraduate students who participate in research for very limited time periods.

For predocs, postdocs and K-Award faculty a *Didactic and Small Group Discussion* course (650:270, master’s and doctoral graduate students; 650:604, postdocs and K-Award faculty) is required. All trainees participate in a four-hour orientation workshop that provides an introduction to core RCR principles. Following this orientation, students attend topical workshops that will focus on specific elements of these tenets in the course syllabus. Each workshop includes a short didactic period (15-20 min) followed by more in-depth small group discussion of 2-3 case studies (70-75 min). Doctoral students will complete the orientation workshop and eight topical workshops over a four-semester period during their first two years of graduate training (16 contact hours). Master’s students, postdoctoral trainees and K-Award faculty will complete the orientation workshop and four topical workshops over a two-semester period (10 contact hours). Each small group includes a multidisciplinary mix of graduate students and postdoctoral trainees. Discussion is led by a faculty facilitator. Active trainee participation is required in these small group sessions. Students attend two sessions each semester (fall and spring). For those students with bona fide excused absences, they may meet with the faculty facilitator to discuss the material. For those students with unexcused absences, the trainees are required to prepare a short paper on the topic covered during their absence, discuss it with a faculty facilitator, who then evaluates the student’s performance. Course attendance and participation is monitored and recorded electronically through the UI ICON course management system.

**Training Requirements**

Trainees are required to complete the appropriate RCR program based on their current university position (undergraduate, predoc, postdoc, or K-Award faculty) as outlined in Table 1.

For example, *undergraduates* supported by NSF funds or from other sponsors, the CITI RCR training is to be initiated and completed prior to but no later than the first month of trainee compensation (e.g., RCR completed before or during the first month of a summer research program).

For *master’s students, postdocs and K-Award faculty* supported by NSF, NIH (non-training grants), NIH T32 training grants, NIH F30, F31, and F32 fellowship awards, NIH K-Award or any other source of funds, RCR training is to be initiated and completed within 12 months of the start of trainee support and compensation from the grant.

*Predoctoral trainees* will continue beyond the 12-month period and complete an additional four workshops to further emphasize the principles of scholarly integrity.
For *Predoctoral trainees* who have received a Master’s degree from the University of Iowa, a second year of RCR training is required beyond what was completed for their Master’s RCR requirement.

In addition, NIH T32 trainees may be required to complete specific T32 RCR training identified by their individual NIH training programs as shown in Table 2.

As trainees at the University of Iowa enter a new phase of their career, they are required to obtain additional RCR training consistent with their new university position (e.g., undergraduate moving into a predoc position; predoc moving into a postdoc position; postdoc moving into a K-Award faculty position). This continuation of RCR training is mandated by both NIH and NSF.

**Failure to Complete RCR Training and Consequences**

For undergraduates, failure to complete the CITI training in the designated time, results in 1) suspension of research activities and 2) loss of compensation. In order for compensation to resume and to continue research activities requires that the undergraduate trainee successfully complete CITI RCR training.

For predocs, postdocs and K-Award faculty, failure to complete all required RCR modules within the designated time period results in 1) a grade of Unsatisfactory in 650:270 or Withdrawal in 650:604, 2) having to repeat the RCR training course from the beginning, and 3) suspension of trainee grant funding and support, which includes stipend, tuition, fees, travel, supplies, etc. To have funding reinstated, the trainee must complete CITI RCR on-line training. It is only after CITI RCR training has been successfully completed and they have registered for the appropriate course (650:270 or 650:604) in scholarly integrity will funding be restored.

**Certification**

Upon satisfactory completion of the designated RCR modules and syllabus, the transcript or employment record of the trainee is updated to indicate that RCR and scholarly integrity training have been completed. For undergraduates, a copy of the CITI certificate of satisfactory completion will be kept on file in the OVPR office. For predocs and postdocs, the student’s University transcript will reflect satisfactory completion of 650:270 or 650:604. For faculty, the employment record will identify satisfactory RCR completion.

The Office of the Vice President for Research will be responsible for the overall RCR plan and for providing information to sponsoring agencies regarding compliance with RCR training.
Transfer of RCR Training Between Institutions

If a trainee leaves another institution (e.g., exits as a predoc) and transfers to the University of Iowa (e.g., enters as a predoc) and can certify successful completion of prior RCR training at their former institution, then upon presentation of certified RCR training documentation, the University of Iowa will waive repeating RCR training.

If a trainee enters the University of Iowa from another institution as part of a new phase of their career (e.g., completed predoc training elsewhere and enters Iowa as a postdoc), then the trainee will need to take new RCR training consistent with their change in position as outlined in Table 1 above.

If a trainee transfers from the University of Iowa to another institution and has successfully completed RCR training, the University of Iowa upon request will provide documentation of RCR training for the new institution.

Additional RCR Training

Trainees are strongly encouraged to continue RCR training in a mentored setting. Colleges, departments, centers and other university units are asked to advance the education of scholarly integrity by providing faculty and trainee seminars on RCR throughout the year and to promote active discussion of RCR topics in all research venues.

RCR References and Web sites


*Large database of references and online resources on RCR*


NPA RCR Toolkit: [http://www.nationalpostdoc.org/rcr-toolkit](http://www.nationalpostdoc.org/rcr-toolkit)


Collaborative Institutional Training Initiative, University of Miami, CITI Responsible Conduct of Research Program [https://www.citiprogram.org/rcrpage.asp](https://www.citiprogram.org/rcrpage.asp)

*Extensive on-line RCR courses provide a significant source of instructional material*
Responsible Scientific Conduct Bibliography from University of Pittsburgh Survival Skills and Ethics Program
http://www.survival.pitt.edu/library/biblio/responsilble.asp

An introduction to RCR, with a useful list of resources in its bibliography

http://rcrec.org/
An extensive online repository of RCR education resources for instructors

http://poynter.indiana.edu/mr/mr-main.shtml
Handbook for teaching scientific ethics through moral reasoning; uses a case study approach

http://books.nap.edu/openbook.php?record_id=10430&page=84
Focuses on research integrity in the biomedical sciences. Note in particular Chapter 5: "Promoting Integrity in Research through Education" which contains advice on how to teach RCR and how it should be integrated with the teaching of basic research skills

Addresses the efficacy of "survival skill"-types of programs for teaching graduate student

Guidance and useful case studies for teaching RCR
Template Language for NIH grants regarding RCR

The University of Iowa has developed a comprehensive RCR training program that introduces RCR concepts and continues to develop and expand key topics identified by NIH. It is designed to exceed current NIH requirements.

**Format:** Two formal courses are offered that are specifically geared for NIH trainees. Course 650:270 is designed for graduate students (Master’s and PhD students). Course 650:604 is specifically for postdocs and K-award faculty. The course format combines didactic and small group discussions. University faculty from multiple disciplines introduce RCR topics and issues and also lead discussion with trainees in small group sessions. Participation by the trainees is required.

**Subject Matter:** The RCR subject matter for both courses consists of 1) Introduction, definitions and rationale, 2) Data acquisition, management, sharing and ownership, 3) Conflict of interest (COI) and commitment (COC), 4) Research involving human subjects, 5) Animal welfare in research, , 6) Research misconduct, 7) Publication practices and responsible authorship, 8) Mentor/trainee responsibilities and relationships, 9) Peer review, 10) Collaborative science, 11) Financial management, 12) Research safety, and 13) Responsibility to society.

**Faculty Participation:** The discussion sessions are led by training faculty and research mentors from disciplines across the institution. In addition, participating K-award faculty also take responsibility for leading group discussions.

**Duration of Instruction:** For 650:270, 4 semesters of training are required for PhD students and 2 semesters are required for Master’s students. RCR training includes a minimum 4 contact hours per semester. The course is offered in the fall semester (trainees meet 3 times) and spring semester (trainees meet 2 times). Course 650:604 is designed for postdoctoral trainees and K-award faculty. The same RCR content is provided in combined didactic format and small group discussions, however, content is delivered over 2 semesters.

**Frequency of Instruction:** RCR training is required for each phase of a trainee’s career (undergraduate, graduate, postdoc and K-award faculty). New graduate students and trainees with NIH funding take the 650:270 course early in their research career. Trainees that remain at Iowa and matriculate from predoc to postdoc or postdoc to K-award faculty, will take additional RCR training defined by either 650:270 or 650:604 as they enter their new career phase.
Process for Initiating Undergraduate RCR Training. (This process also applies for individuals with a limited term appointment.)

1. Log in to the CITI Gateway for the University of Iowa (https://uiris.uiowa.edu/dashboard/citi)
2. Click on the link “Add a course or update your learner groups for University of Iowa”
3. Under Question 1 “Human Subjects Research Course Enrollment,” select the group appropriate to your research activities
4. Under Question 2 “Responsible Conduct of Research Course Enrollment,” select the RCR learner group that is most appropriate to your role in research.
5. Under Question 3 “Lab Animal Research Course Enrollment,” select one or more courses that apply.
6. To pass each course you must complete all the elective modules with at least the required score listed at the top of your screen.
7. You must pass all three courses (Human Subjects, Responsible Conduct of Research, and Lab Animals) in order to satisfy the RCR Training requirement.

Process for Initiating Predoc RCR Training
1. Log in to ISIS (https://login.uiowa.edu/uip/login.page?service=https://isis5.uiowa.edu/isis/)
2. Search for course 650:270, “Principles of Scholarly Integrity.”
3. Register for one of the three sections based on your degree objective:
   a. Section 001 — Doctoral degree students (PhD only; 1 sem hr)
   b. Section 002 — Masters degree students (MS, MA only; 0 sem hr)
   c. Section 003 — Nondegree graduate students (G9; 0 sem hr)
4. Complete course objectives.

Process for Initiating Postdoc RCR Training
1. Log in to ISIS (https://login.uiowa.edu/uip/login.page?service=https://isis5.uiowa.edu/isis/)
2. Register for course 650:604, “Principles of Scholarly Integrity.”
3. Complete course objectives.

Process for Initiating K-award faculty RCR Training
1. Log in to ISIS (https://login.uiowa.edu/uip/login.page?service=https://isis5.uiowa.edu/isis/)
2. Register for course 650:614, “Principles of Scholarly Integrity.”
3. Complete course objectives.