



Using CITI Program Content: Responsible Conduct of Research (RCR)

CONTENT AUTHOR

- **Jason Borenstein, PhD**
CITI Program

INTRODUCTION

Like all CITI Program educational materials, the components of the RCR series can be customized to fit the specific needs of your organization's learners. Taking advantage of this flexibility requires that you are familiar with the CITI Program's RCR series and the capabilities of the CITI Program's web platform to deliver it. This module addresses the components of the RCR series. For general information on the CITI Program's instructional capabilities, see [Using CITI Program Content: An Introduction](#).

LEARNING OBJECTIVES

By the end of this module, you should be able to:

- Identify the structure of the CITI Program's RCR series and how it can be customized to meet the needs of your organization's learners.
- Determine how to access the RCR series based on organization-wide or individual needs.
- Specify the set up of a suitable RCR curriculum for the learner groups at your organization.
- Obtain additional information on the RCR series from the [RCR Catalog](#), Help Desk Staff, and Sales Group.

RCR BASIC COURSE OVERVIEW

Listed below are the available modules within the *RCR Basic* course. The modules are designed to be applicable to researchers at any career stage. They are suitable for any person involved in research, ranging from upper-level undergraduates to established faculty. Particular emphasis is given to the educational needs of graduate students and postdoctoral researchers. An organization's module selections may vary depending on the type of research that its learners are conducting. The Help Desk can discuss specific set-up options with your organization based on its RCR training needs.

- Introduction to RCR (RCR-Basic)
- Authorship (RCR-Basic)
- Collaborative Research (RCR-Basic)

- Conflicts of Interest (RCR-Basic)
- Data Management (RCR-Basic)
- Financial Responsibility (RCR-Basic)*
- Mentoring (RCR-Basic)
- Peer Review (RCR-Basic)
- Plagiarism (RCR-Basic)
- Research Involving Human Subjects (RCR-Basic)
- Research Misconduct (RCR-Basic)
- Using Animal Subjects in Research (RCR-Basic)

* The Financial Responsibility module is specifically designed for research administrators.

ADDITIONAL MODULES OF INTEREST

Listed below are the *Additional Modules of Interest* that can be used to complement any basic RCR course. A typical recommendation is to designate all of these modules as **Supplemental**.

- Environmental and Social Dimensions of Engineering Research (RCR)
- Export Controls and National Security (RCR)
- Research, Ethics, and Society (RCR)

RCR REFRESHER COURSE OVERVIEW

Listed below are the available modules within the *RCR Refresher* course. The modules that an organization selects may vary depending on the type of research that its learners are conducting. If an organization wants its learners to complete refresher training, it is recommended that organizations select refresher module requirements that are similar to their selections for the basic course. A refresher course could be taken as a cycle at an interval specified by your organization (for example, three years after a learner has completed a basic RCR course). The CITI Program's Help Desk can discuss specific set-up options with your organization based on its refresher training needs.

- Authorship (RCR-Refresher)
- Collaborative Research (RCR-Refresher)
- Conflicts of Interest (RCR-Refresher)
- Data Management (RCR-Refresher)
- Mentoring (RCR-Refresher)
- Peer Review (RCR-Refresher)
- Research Involving Human Subjects (RCR-Refresher)
- Research Misconduct (RCR-Refresher)
- Using Animal Subjects in Research (RCR-Refresher)

CASE STUDIES

Most of the modules in the RCR series contain at least one case study that is embedded within the text. Most of the basic RCR modules also contain at least one video case study.

SUBSCRIPTION OPTIONS

RCR series subscriptions are available to both organizations and independent learners. Review the information below to help determine which option best meets your current needs. To discuss these options in further detail, please contact sales@citiprogram.org.

Organization Subscription

RCR series access is included within the CITI Program base subscription fee. Organization access allows for unlimited learner use (per site), designated administrative oversight, and the flexibility to use the courses in a number of different ways as discussed in the next section.

Independent Learner Subscription

RCR courses are available to independent learners for \$100/course. Independent learner access is intended for those not affiliated to an organization that subscribes to the CITI Program or whose organization does not offer the RCR series.

SELECTING MODULES FOR YOUR ORGANIZATION'S LEARNERS

For the RCR series, the CITI Program offers the following options for how modules are presented to learners.

- **Required:** A **Required** module must be taken in order to earn a Completion Report.
- **Elective:** A module that is associated with a set of other **Elective** modules. Learners select and complete a specified minimum number of electives from the set in order to earn a Completion Report. For example, if a learner group is required to complete three **Elective** modules, and six choices are presented, then completing any three of the six modules will allow the learner to move forward.
- **Supplemental:** A Supplemental module becomes available to the learner after completing any applicable **Required** and **Elective** modules. A learner may review **Supplemental** modules on a voluntary basis.

The selection of **Required**, **Elective**, and **Supplemental** modules is up to your organization. However, for each course, there must be at least one **Required** module.

The creation of learner groups is essential in determining which modules a learner will receive. While learner groups can be formed in multiple ways, the CITI Program offers organizations the opportunity to select pre-determined learner groups or “set-ups.” Review the CITI Program’s recommendations below and refer to the [RCR Series Selection Form](#) for more information.

It is important to note that organizations may also develop customized organization-specific content to supplement the training. Organizations then work with the CITI Program to develop modules that are included in learner groups for seamless delivery to learners.

Organizations may choose to create separate RCR learner groups containing only the RCR modules in any combination as noted above. Alternatively, organizations may add the RCR modules to existing learner groups. A combination of both a RCR-specific learner group and inclusion of RCR modules in existing learner groups is yet a third option for organizations.

In keeping with the options above, the CITI Program can assist administrators in creating courses (learner groups) that best meet their organizational needs, including utilizing modules from across the CITI Program. To discuss course recommendations that combine modules from different CITI Program offerings, please contact the CITI Program Help Desk support@citiprogram.org or (888) 529-5929.

INDEPENDENT LEARNERS

For a listing of ACU courses available to independent learners, see the [Independent Learner Course Guide](#).

RETRAINING FREQUENCY

There is not one uniform standard regarding how frequently RCR training should occur. The National Science Foundation (NSF 2011), for example, suggests that organizations should make this determination internally. The RCR policy from the National Institutes of Health states that “Instruction must be undertaken at least once during each career stage, and at a frequency of no less than once every four years” (NIH 2009). If an organization wants its learners to complete refresher training, it is recommended that the refresher course be taken approximately three or four years after learners have completed a basic RCR course.

TRAINING METHODS

There is not a uniform standard regarding the methods and format used for RCR training. CITI Program content is designed to be a component of an overall foundation of training for an organization's affiliates. We recommend that organizations build frameworks of training that combine CITI Program content with face-to-face training, one-on-one mentoring, and other types of learning opportunities, as appropriate to the particular topics and their organizational cultures.

As with the frequency of training, the NSF (2011) suggests that organizations should make this determination internally. The NIH RCR policy prohibits a training program that relies entirely on online instruction “except in special instances of short-term training” and notes that “[a]cceptable programs generally involve at least eight contact hours” (NIH 2009). The CITI Program’s RCR courses can be used to complement an in-person training experience. The courses can provide students or other researchers with a conceptual foundation that can enhance the quality of in-person training.

LANGUAGE AVAILABILITY

All of the CITI Program's RCR modules are available in English. Some modules are also available in Spanish, Portuguese, and Russian. See the [RCR Catalog](#) for more details regarding language availability.

CONTINUING EDUCATION (CME/CE) CREDITS

Detailed information regarding CME/CE credits is available in the [RCR Catalog](#) or on the [CITI Program website](#). For more information on how to ensure CE availability for your organization's learners contact support@citiprogram.org or (888) 529-5929.

PUBLICATION

RCR for Engineering: An Introduction to Ethics and Engineering Research

This guide was created to provide a portable and comprehensive resource that is meaningful to practitioners, faculty, students, postdoctoral researchers, and other members of the engineering community. It covers key topic areas in the realm of RCR, including authorship, data management, mentoring, and research misconduct, as they pertain to engineering disciplines.

Bookstore

Visit the [Online Bookstore](#) to place or your order or contact sales@citiprogram.org to discuss bulk order options.

SUMMARY

The RCR series is highly customizable and commonly used to help meet organizational training requirements. It may also be used to complement the in-person RCR training required by funding agencies such as the NIH.

Many organizational administrators have found it helpful to visit the CITI Program's website, at least annually, to review current content offerings and to consider these in light of the organization's previously selected options. CITI Program's Help Desk is experienced with all of its curricular series, including RCR, and can assist you in configuring content for your learners. Contact them at support@citiprogram.org or (888) 529-5929.

REFERENCES

National Institutes of Health (NIH). 2009. "[Update on the requirement for instruction in the responsible conduct of research, NOT-OD-10-019.](#)" Accessed March 2, 2016.

National Science Foundation (NSF). 2011. "[RCR Frequently Asked Questions \(FAQs\) - updated November 7, 2011.](#)" Accessed March 2, 2016.

ACKNOWLEDGEMENTS

Jason Borenstein, Daniel Smith, Justin James, Reid Cushman, and other members of the CITI Program provided advice and content for this module.

Original Release: February 2013

Last Updated: May 2016