

**University of Maryland, College Park (“UMD”)  
Plan for Fulfilling National Science Foundation (“NSF”) Established and  
Emerging Responsible and Ethical Conduct of Research (“RECR”) Training  
Requirements**

*Effective Date: July 31, 2023*

**I. Overview of Relevant Legislation and Associated Funding Agency Requirements**

The University of Maryland, College Park (“UMD”) receives a significant amount of research funding from the National Science Foundation (“NSF”), and the institution must therefore ensure compliance with all established and emerging requirements related to the receipt of such support, including those that involve training in the responsible and ethical conduct of research (“RECR”).

The [America COMPETES Act](#) required that post-January 4, 2010, all students and postdoctoral researchers included as research personnel on NSF awards receive training in the responsible conduct of research within the time period of the grant, thus establishing foundational RECR training requirements. The [CHIPS Act of 2022](#) modified the America COMPETES Act with regard to RECR training, adding a requirement to include “faculty, and other senior personnel” in training protocols, and to provide coverage of “mentor training and mentorship,” and other expanded topic areas.

Effective January 30, 2023, the NSF Proposal & Award Policies & Procedures Guide ([NSF PAPPG 23-1](#)) mandated that for all proposals submitted on or after July 31, 2023, institutions must certify that they have a plan in place for *faculty and other senior personnel* to also be able to receive training in RECR, with a focus on *mentor training and mentorship*. Further, the revised NSF requires that training “should be effective and must be appropriately tailored to the specific needs and circumstances at each institution.” At present, the NSF does not require training plans to be included in proposals; however, those plans are subject to review upon request.

**II. University of Maryland, College Park Statement on Research Integrity**

The integrity of our research is the foundation of the University of Maryland, College Park’s (UMD’s) reputation as a premier research institution. It is in this spirit that all research performed at the institution is expected to meet the highest standards for integrity in all areas of the research endeavor (*e.g.*, authorship and publication; data acquisition, management, sharing, use, and reporting; disclosure of and transparency regarding conflicts of interest and conflicts of commitment; mentorship; the use of human participants and animals; export compliance; and safe and inclusive research environments). To that end, we are dedicated to providing our faculty, students, trainees, and staff with the education and resources necessary to ensure a culture of integrity in every aspect of their work.

### III. The Responsible Conduct of Research at UMD (“RCR@UMD”) Program

The responsible conduct of research (RCR) involves the ethical responsibility to generate and disseminate knowledge with integrity and rigor. Training and education in RCR plays a crucial and continuing role in ensuring that we fulfill this important obligation. Moreover, it is a requirement of many of the funding agencies that support our work, to include the NSF.

Historically, UMD leveraged the institutional license for the Collaborative Institutional Training Initiative (“CITI”) Program to provide an online training vehicle by which these kinds of requirements were satisfied. Ultimately, however, CITI will be supplanted by a comprehensive and customized responsible conduct of research program called “RCR@UMD” that – in addition to meeting the NSF’s statement that training be “appropriately tailored to the specific needs and circumstances at each institution” – will:

- broadly foster a culture of research integrity by aiding our research community in understanding the expectations for conducting all aspects of their research responsibly;
- provide a foundation for acting in accordance with those expectations by offering guidance, best practices, and tools;
- ensure appropriate stewardship of funds that support our important work; and
- help our researchers fulfill related training requirements.

Core topic areas covered in the “RCR@UMD” program include those traditionally regarded as part of a robust RCR curriculum and are drawn from the comprehensive list provided in the most recent notice from National Institutes of Health (“NIH”) ([NOT-OD-22-055](#)):

- conflict of interest – personal, professional, and financial – and conflict of commitment, in allocating time, effort, or other research resources
- policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
- mentor/mentee responsibilities and relationships
- safe research environments (*e.g.*, those that promote inclusion and are free of sexual, racial, ethnic, disability and other forms of discriminatory harassment)
- collaborative research, including collaborations with industry and investigators and institutions in other countries
- peer review, including the responsibility for maintaining confidentiality and security in peer review
- data acquisition and analysis; laboratory tools (*e.g.*, tools for analyzing data and creating or working with digital images); recordkeeping practices, including methods such as electronic laboratory notebooks
- secure and ethical data use; data confidentiality, management, sharing, and ownership
- research misconduct and policies for handling misconduct
- responsible authorship and publication; and
- the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research.

RCR@UMD's comprehensive "Research Integrity" catalog is scheduled to be released in full in early 2024 and will include extensive treatment of a variety of topics relevant to conducting research responsibility in order to ensure that a culture of research integrity is broadly fostered across our research enterprise.

#### **IV. Ensuring Compliance with NSF PAPPG 23-1**

##### **A. Requirements and Plan for Delivery of Training**

At a programmatic level, RCR@UMD satisfies the aspect of the revised NSF requirements that training "should be effective and must be appropriately tailored to the specific needs and circumstances at each institution." In following, the first two courses released under the RCR@UMD banner have been developed to provide our research community with a robust alternative to CITI that offer UMD-specific information and related resources, directly respond to the agency's focus on mentorship training, and address other recent regulatory requirements related to the creation of safe research environments. The available courses include:

1. The *RCR Overview Course*, which serves as a primer on the foundational concepts and range of topics traditionally associated with RCR education, tailored to our institution's research community.
2. The *Mentor/Mentee Responsibilities & Relationships Course*, developed in direct response to agency focus on mentorship, which offers in-depth training in scholarly mentoring relationships, and equipping all researchers with the knowledge, skills, and resources necessary to nurture and maintain healthy, safe, and inclusive working environments that foster research integrity.

***In keeping with NSF PAPPG 23-1 directives, the University of Maryland is requiring that faculty, senior personnel, undergraduate students, graduate students, and postdoctoral researchers participating in research supported by NSF complete the requisite RCR@UMD training<sup>1</sup> prior to the funding of any impacted award by:***

- Completing RCR@UMD's "RCR Overview" course, which satisfies the requirement for RCR training broadly by providing a UMD-specific primer on foundational RCR concepts and topics.
- Completing RCR@UMD's "Mentor/Mentee Responsibilities & Relationships" course, which is also considered necessary in light of: the NSF's requirement that the institution provide training that meets the specific needs and circumstances at each institution; our stated commitment to providing the resources necessary to support our research community; and the recognition that mentorship constitutes the means through which we create healthy, safe, and inclusive environments, train the next generation of researchers (technically, professionally, and ethically),

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<sup>1</sup> Note: research community members who have completed the current CITI training within the last three years (prior to 8/1/23) do not need to complete any new training. As their certification expires, however, they will need to complete the new RCR@UMD training courses.

and propagate model behaviors for conducting research responsibly and avoiding detrimental research practices and research misconduct.

All RCR@UMD courses are built in ELM-Canvas, hosted on UMD's Open Learning platform as part of the "Research Integrity" catalog, and accessible using UMD credentials through single sign-on ("SSO"). Direct links to existing and forthcoming RCR@UMD courses will be permanently housed on the [Research Integrity "Education" webpage](#).

## **B. Communication, Monitoring, and Oversight**

A broad communication was distributed by e-mail to the UMD research community upon release of the two courses referenced above in order to ensure that all researchers were aware of the revised NSF training requirements and were provided with detailed instructions regarding how to achieve and maintain verification of compliance. This plan, direct links to RCR@UMD courses, and other information regarding funding agency requirements, materials, and resources, will be housed and frequently refreshed on the [Research Integrity "Education" webpage](#). Periodic reminders about NSF PAPPG 23-1 and associated requirements for those funded in part or in full by NSF will be issued, and the research community will be directed to the established website.

*As stated, UMD is requiring that faculty, senior personnel, undergraduate students, graduate students, and postdoctoral researchers participating in research supported by NSF complete the requisite training prior to the funding and set-up of any impacted award. We strongly encourage UMD community members to take RCR@UMD's two course offerings, but are allowing that individuals who have completed the current CITI training within the last three years (prior to 8/1/23) do not need to complete any new training. As their certification expires, however, they will need to complete the new RCR@UMD training courses. Responsibility for ensuring that all impacted individuals receive the appropriate training is shared between the institution and the Principal Investigator(s) associated with the implicated awards. At present, the NSF does not require training plans to be included in proposals; however, those plans are subject to review upon request. Completion of an RCR@UMD course will automatically generate a certificate of completion for the course, and any individual at UMD who is required to complete this training is asked to maintain a copy of their certificate/completion documentation so that they are able to provide it upon request.*

In addition, there are mechanisms available for tracking and reporting on completion of the training at the departmental (college or school) level. UMD currently has a Payroll and Human Resources ("PHR") administrative report titled "Responsible Conduct in Research," which is available to all departmental administrators. Criteria used to generate the report (employment category types and funding account sources) have been aligned with the requirements associated with the NSF PAPPG to ensure that impacted individuals who need to take the required training to participate in NSF-funded research projects will be flagged. We have provided instructions for the departmental

administrators on how to access the RCR PHR administrative report to view who has NSF training requirements.

Note: UMD is in the process of modernizing its Enterprise Resource Planning (“ERP”) systems by transferring its Finance, Human Capital Management, and Student Information systems to the Workday platform. The team developing RCR programming at UMD has been working with Workday’s Learning and Reporting teams to establish seamless, robust, institutional-level tracking and reporting capabilities for RCR compliance that will supplant the PHR administrative reports referenced above. This plan will be updated to reflect any related changes to the current communication, oversight, and monitoring approach described above.

## **V. Campus Support**

Questions regarding the fulfillment of the revised NSF requirement, other funding agency requirements, or the “RCR@UMD” program should be directed to [rcr@umd.edu](mailto:rcr@umd.edu).