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 responds to 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 training1 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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1 Note: research community members who have completed a version of CITI’s RCR training containing the new standard curriculum, which includes the “Mentoring and Healthy Research Environments” module, between July 1, 2023, and July 31, 2023, will be considered to have satisfied current training requirements. However, going forward, UMD research community members are strongly encouraged to utilize the new RCR@UMD program.
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 RCR@UMD training prior to the funding and set-up of any impacted award. Responsibility for ensuring that every member of the research team receives 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 the University of Maryland who is required to complete this training should maintain a copy of their certificate/completion documentation so that they are able to provide it upon request.

The Director of Responsible Conduct of Research Programming and research integrity staff will coordinate with UMD’s Office of Research Administration and sponsored projects staff to collect and maintain compliance information; identifying individuals who are required to receive training, tracking training completion, and generating and addressing reports of non-compliance with the appropriate parties.

V. Campus Support

Questions regarding the fulfillment of the revised NSF requirement, other funding agency requirements, or the forthcoming full “RCR@UMD” program should be directed to rcr@umd.edu.