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

Effective Date: July 31, 2023 Updated: October 2025

University of Maryland, College Park Statement on Research Integrity

The integrity of our research is the foundation of the University of Maryland'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; research security; rigor and reproducibility; 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.

I. Overview of Relevant Legislation and Associated Funding Agency Requirements

As a recipient of funding from the National Science Foundation ("NSF"), the University of Maryland, College Park ("UMD") must ensure compliance with all related agency requirements, including those that involve training in the responsible and ethical conduct of research ("RECR").¹

The RCR/RECR training requirements were first introduced in 2007 by the America COMPETES Act, which required that all institutions applying for NSF funding have "a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project." NSF implemented this requirement for all new proposals submitted or due on or after January 4, 2010. The Research and Development, Competition, and Innovation Act (a division of the CHIPS and Science Act) amended the America COMPETES Act with regard to RCR/RECR training by adding faculty and "other senior personnel" to the covered population and specifically requiring the inclusion of "mentor training and mentorship" (among other topics). Accordingly, NSF issued revised training requirements in the version of its Proposal & Award Policies & Procedures Guide ("PAPPG") that went into effect on January 30,

¹ This is also referred to as "responsible conduct of research" – or "RCR" – by other federal funding agencies/sponsors. The term "RCR/RECR" is used throughout the document in recognition of the fact that some individuals or entities are more familiar with "RCR," whereas others (including NSF) are more familiar with or regularly utilize the term "RECR."

² America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act, Pub. L. No. 110-69, tit. VII, § 7009, 121 Stat. 680 (2007) (codified at 42 U.S.C. § 1862o–1).

³ Research and Development, Competition, and Innovation Act, Pub. L. No. 117-167, Division B, tit. III, § 10337, 136 Stat. 1553 (2022) (codified at 42 U.S.C. § 19036). Section 10337 also added "training to raise awareness of potential research security threats" and "Federal export control, disclosure, and reporting requirements" to the amended version of the America COMPETES Act language regarding training requirements.

2023 (NSF 23-1).⁴ The subsequently issued PAPPG (NSF 24-1) continued these requirements and modified "other senior personnel" to "other senior/key personnel." NSF Important Notice No. 149 (July 10, 2025) added research security training to the content that must be addressed in the institution's NSF RCR/RECR training plan as of October 10, 2025.⁶

A. Institutional Requirements

NSF requires that institutions:

- certify that the institution has "a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, postdoctoral scholars, faculty, and other senior/key personnel who will be supported by NSF to conduct research and that such training addresses mentor training and mentorship, training to raise awareness of potential research security threats, and Federal export control, disclosure, and reporting requirements" ("Plan");
- provide training that is "effective and . . . appropriately tailored to the specific needs and circumstances at [the] institution"⁸;
- bear the responsibility of determining "the content, focus and the delivery method for the [RCR/]RECR training";
- "designate one or more persons to oversee compliance with the [RCR/]RECR training requirement[s]" in the compliance with the second requirement requ
- verify that "undergraduate students, graduate students, postdoctoral researchers, faculty, and other senior/key personnel supported by NSF to conduct research have received" RCR/RECR training¹¹; and
- submit the Plan to NSF for review, upon request. 12

B. Associated Individual Training Obligations

At UMD, undergraduate students, graduate students, postdoctoral researchers, faculty, and other senior/key personnel who will participate in research supported by NSF *must* complete RCR/RECR training, as outlined in this Plan.

⁴ National Science Foundation, *Proposal & Award Policies & Procedures Guide* II-6, IX-3, IX-4 (2023).

⁵ National Science Foundation, *Proposal & Award Policies & Procedures Guide* II-6, IX-3, IX-4 (2024).

⁶ National Science Foundation Important Notice No. 149 (2025).

⁷ National Science Foundation Important Notice No. 149 (2025); *see also* National Science Foundation, *Proposal & Award Policies & Procedures Guide* II-6 (2024).

⁸ National Science Foundation, *Proposal & Award Policies & Procedures Guide* IX-3, IX-4 (2024).

⁹ National Science Foundation, *Proposal & Award Policies & Procedures Guide* IX-4 (2024).

¹⁰ National Science Foundation, *Proposal & Award Policies & Procedures Guide* IX-4 (2024).

¹¹ National Science Foundation, *Proposal & Award Policies & Procedures Guide* IX-4 (2024).

¹² National Science Foundation, *Proposal & Award Policies & Procedures Guide II-6*, IX-4 (2024).

II. Institutional Plan for RCR/RECR Training and Related Oversight

A. Training

The Office of Integrity and Responsible Conduct ("OIRC") is creating an institutional-level Integrity and Responsible Conduct Program ("IRC@UMD") that offers programming, support, and resources. The RCR/RECR-related programming available through IRC@UMD is designed to:

- ensure coverage of the variety of topics relevant to conducting research responsibly in order to foster a culture of research integrity across our research enterprise;
- directly address agency-specific regulatory requirements for institutions (such as NSF's focus on mentorship training and other expectations related to research environments¹³);
- provide UMD's research community with robust and comprehensive online training options that include institution-specific information and related resources;
- establish a foundation for acting in accordance with sponsor expectations by offering guidance, best practices, and tools;
- ensure appropriate stewardship of funds that support the important work conducted under the auspices of the institution; and
- help UMD's researchers fulfill related training requirements.

As part of this effort, online courses, which satisfy the aforementioned NSF criteria, have been created or adopted for use by the campus community when fulfilling the requirements of this Plan.

1. Courses

Taking the three online courses listed below will satisfy the content/topic requirements of this Plan, which has been developed to ensure compliance with the requirements set forth by NSF.¹⁴

- IRC@UMD's "IRC-R: Overview". course broadly satisfies the requirement for RCR/RECR training by providing a primer on a comprehensive range of foundational RCR/RECR concepts and topics, with reference to UMD-specific policies/procedures, processes, and offices.
- IRC@UMD's "IRC-R: Mentorship" course satisfies NSF's requirement for a focus on mentorship training and emphasizes that mentorship constitutes the primary means by which researchers propagate model behaviors for: (1) conducting research responsibly; and (2) avoiding detrimental research practices and research misconduct.

¹³ See, e.g., NSF's requirement for fostering safe and harassment-free environments (National Science Foundation, *Proposal & Award Policies & Procedures Guide* II-42 (2024)).

¹⁴ National Science Foundation, *Proposal & Award Policies & Procedures Guide* II-6, IX-3, IX-4 (2024); National Science Foundation Important Notice No. 149 (2025).

¹⁵ UMD is using the term "integrity and responsible conduct in research" ("IRC-R") to refer to this programming, rather than "responsible (and ethical) conduct of research" ("RCR/RECR"), as a constant reminder of the inherent link between integrity and responsible conduct, and the *practice* of conducting rigorous, reproducible, trustworthy research.

• The UMD Research Security Office's ("RSO") "Research Security Training" course employs the NSF SECURE Center's "Consolidated Research Security Training Module" and satisfies the UMD mandatory research security training requirements ¹⁶ as well as the research security training requirements set forth in NSF Important Notice No. 149 (July 10, 2025). "NSF, NIH, DOE, and DOD all recognize completion of the [consolidated] module as compliant with their respective [research security training] requirements." ¹⁷

In addition to the online courses listed above, there are a variety of other offerings available at UMD and externally¹⁸ which *might* satisfy the existing RCR/RECR requirement, in whole or in part. Individuals who offer or participate in such opportunities are encouraged to contact Karen Wehner, Ph.D., Director of Programming and Policy Initiatives, OIRC at ircp@umd.edu to discuss whether a particular event or course may satisfy the agency-specific RCR/RECR training requirements set forth in this Plan. OIRC will consult with the applicable UMD compliance unit head and/or the Office of the General Counsel, as appropriate, when considering equivalencies for courses listed as RCR/RECR training requirements in this Plan.

Note: Researchers who completed the RCR/RECR training via CITI before August 2023 and have a certification that has not yet expired do not need to complete any new RCR/RECR training at this time. As that certification expires, however, they will need to complete the IRC@UMD training courses mentioned above. Researchers who completed the research security training administered by RSO between January 1, 2025 and September 11, 2025 and have a certification that has not yet expired do not need to complete any new research security training at this time. As that certification expires, however, they will need to complete the RSO training course mentioned above.

2. Enrollment

All IRC@UMD courses are hosted on ELMS-Canvas and accessible for enrollment via UMD's Open Learning platform as part of the "Integrity and Responsible Conduct" catalog. Direct links to IRC@UMD courses are available on the OIRC website along with a detailed instructions guide that provides stepwise directions on how to enroll (under "Online IRC-R Courses"). Please note that individuals must enroll in IRC@UMD courses through Open Learning to ensure that their completion of the training via ELMS-Canvas is captured as necessary to generate a certificate of completion.

The RSO research security training course is hosted on ELMS-Canvas and accessible for enrollment via UMD's Open Learning platform. The course is cross-listed in the "Research Security Office" catalog and the "Integrity and Responsible Conduct" catalog. A direct link to this course is housed on the "Research Security Training" page of the RSO website. Please note that individuals *must* enroll in this course through Open Learning to ensure that their

¹⁶ UMD has research security requirements separate from those in this NSF-specific RCR/RECR Plan. For more information on UMD's research security requirements, visit the RSO website.

¹⁷ National Science Foundation Important Notice No. 149 (2025).

¹⁸ Examples include undergraduate and graduate-level courses on scientific integrity, RCR/RECR, and research ethics; workshops offered by the Office of Postdoctoral Affairs; department-level meetings, seminars, and workshops; and funding agency offerings designed to cover RCR/RECR topics, best practices, available resources, and other helpful information.

completion of the training via ELMS-Canvas is captured as necessary to generate a certificate of completion.

3. Frequency

Undergraduate students, graduate students, postdoctoral researchers, faculty, and "other senior/key personnel" who will participate in research supported by NSF must complete the IRC@UMD and RSO courses, included in this Plan, *prior to the funding of any impacted award* and then every 3 years thereafter (for the duration of the time that the individual is supported by NSF funding). Note: Individuals designated as senior/key personnel have an additional requirement to have taken the RSO course in the 12 months prior to the submission of any new proposal²⁰ on which they are identified as senior/key personnel. The RSO will be responsible for increasing the frequency and population of the RSO course as needed to meet agency or project specific requirements.

B. Oversight

1. Certifying Completion of Training

Upon completion of an IRC@UMD course on ELMS-Canvas, a certificate will be generated in Open Learning. Individuals should reference the detailed instructions guide – housed on <u>OIRC's</u> <u>website</u> – for stepwise directions on how to earn and access their course completion certificate.

Upon completion of the RSO course, listed above, in ELMS-Canvas, a certificate will be generated in and available through Open Learning.

Any individual who is required to complete the training listed in this Plan should maintain a copy of their certificate/completion documentation so that they are able to provide it upon request.²¹

⁹ NSF defines "senior/key perso

¹⁹ NSF defines "senior/key personnel" as follows: "Senior/key personnel include the individuals designated by the proposer/recipient organization and approved by NSF, who contribute in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award. There are two categories of senior/key personnel as follows: 1. (co) Principal Investigator (PIs) – NSF does not infer any distinction in scientific stature among multiple PIs, whether referred to as PI or co-PI. If more than one, the first one listed will serve as the contact PI, with whom all communications between NSF program officials and the project relating to the scientific, technical, and budgetary aspects of the project should take place. ... Both the PI and any co-PIs, however, will be jointly responsible for submission of the requisite project reports. For purposes of [the PAPPG], when used throughout, the term Principal Investigator also includes Project Director (PD), and the term co-PI also includes co-PD. 2. Faculty Associate (faculty member) (or equivalent) – an individual other than the Principal Investigator(s) considered by the performing institution to be a member of its faculty (or equivalent) or who holds an appointment as a faculty member at another institution, and who will participate in the project being supported" (National Science Foundation, *Proposal & Award Policies & Procedures Guide* Exhibit II-3 (2024)).

²⁰ National Science Foundation Important Notice No. 149 (2025).

²¹ Please note that individuals must enroll in IRC@UMD and RSO courses through Open Learning to (1) gain access to a given course and (2) ensure that their participation in and completion of the training via ELMS-Canvas is recorded as necessary to generate a certificate. Data about completion of IRC@UMD and RSO courses in Open Learning will also be integrated into the Workday Learning transcripts of those individuals who have Workday accounts.

Individuals who have met NSF's training requirements by taking other types of available training (see Section II.A.1. on page 4, including footnote 18, for examples) will need to certify their completion of that training in other ways. For example:

- individuals who completed the version of CITI's RCR/RECR training that includes the "Mentoring and Healthy Research Environments" module before August 2023 should maintain a copy of the associated "Completion Certificate," which can be located via an individual's <u>CITI</u> account²² under "My Records" (note: such individuals will need to complete the appropriate IRC@UMD courses when their CITI certification expires);
- individuals who participated in relevant seminars or workshops should contact the administrator of those events/offerings to receive the appropriate confirmation of their participation; and
- students who completed relevant courses (*e.g.*, as part of their graduate training program curriculum²³) should provide proof of course completion in the form of an unofficial transcript, which may be accessed through <u>Testudo</u>, or by contacting their course instructor for completion confirmation, if needed.

2. Communication

When the most recent version of NSF's training requirements went into effect in 2023, a broad communication was distributed by e-mail to the UMD community to ensure that all researchers were aware of the revised requirements and provide relevant information about how they could be satisfied, including direct links to the two IRC@UMD courses mentioned above.

To facilitate continued awareness of the training requirements and options for fulfilling them, OIRC:

- maintains a <u>website</u> with current information and resources, including a "Frequently Asked Questions" ("FAQ") section that provides additional details for the campus community regarding the contents of this Plan; and
- will send communications to the campus community via e-mail, including: (1) regular reminders of existing training requirements; and (2) notice of any new IRC@UMD programming, other training opportunities, or significant changes to related regulations or agency-specific requirements.

3. Monitoring

NSF does not require institutions to include their institutional NSF RCR/RECR training plan in proposals at the time of submission. Those plans are however subject to NSF review upon

²² Individuals affiliated with UMD can access their CITI training completion certificates, for courses completed through UMD's license for CITI. Click on the blue "Log In" button on the top right of the CITI homepage and select the "Log In Through My Institution" option.

²³ See Section II.A.1. on page 4, including footnote 18, for additional information about courses that might satisfy agency-specific training requirements in whole or in part.

request. UMD's Plan is publicly available on the <u>OIRC website</u> and the institution will provide the Plan directly to NSF upon receipt of a request from NSF.

Responsibility for ensuring that all impacted individuals receive the appropriate training is shared between the institution and the individuals associated with the implicated awards.

Any individual at UMD who is required to complete the training described in this Plan is asked to maintain a copy of their certificate(s)/completion documentation so that they are able to provide them upon request. Refer to Section II.B.1. of this Plan for additional information about how completion of required RCR/RECR training can be certified.

OIRC will continue to track regulatory activity and developments that could impact training requirements and communicate necessary updates to the campus community via the methods described above.

III. Questions/Support

Questions regarding the fulfillment of NSF's RECR training requirements, other funding agency RCR/RECR training requirements, or the "IRC@UMD" program should be directed to Karen Wehner, Ph.D., Director of Programming and Policy Initiatives, OIRC at ircp@umd.edu.