IMPROVING RESEARCH INTEGRITY: THE ROLE OF ACCOUNTABILITY ACROSS THE RESEARCH ENTERPRISE

Report of a National Dialogue on the State of Research Integrity Education

The Association for Practical and Professional Ethics

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Improving Research Integrity: The Role of Accountability Across the Research Enterprise

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We are grateful to all of the members of the planning committee, whose expertise in the field of research integrity's past, present, and future led to a robust conversation. Their insights and feedback have been instrumental in developing this report.

Additionally, we want to acknowledge the contributions of all of the participants and guests at the National Dialogue. We heard from students, post-docs, early career professionals, and longtime contributors, and we were honored that they didn't just attend, but actively participated in shaping both the dialogue and the resulting strategies.

We would like to thank Rockwell Clancy who took notes during the event, coalesced themes, and prepared initial drafts of this report.

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Executive Summary

The Association for Practical and Professional Ethics (APPE) held a National Dialogue on the State of Research Integrity Education at the National Academies of Sciences, Engineering, and Medicine in Washington DC, November 8-9, 2023. The aims of the Dialogue were to (1) characterize historical and current approaches used to teach responsible conduct of research (RCR) and build cultures of research integrity, and (2) propose strategies to strengthen the network of accountability within and between relevant partner sectors.

RCR education policy and practice has typically been narrowly focused on the individual trainee or researcher, and on the prevention of research misconduct. However, the responsible conduct of research depends on a broader conceptualization of research integrity which requires responsible research *cultures*. This, in turn, requires the committed engagement of various vested partners across the research enterprise.

APPE convened leading scholars in the field of research integrity education as well as vested partners essential to responsible research. These partners included research universities, federal grant-making agencies, higher education accreditation bodies, and disciplinary and multi-disciplinary professional societies. These partners bear responsibility, both individually and as part of a network of accountability, for efforts to promote research integrity and cultivate robust and responsible research environments.

We collectively examined the history of RCR education requirements, as well as the assumptions on which those requirements were based; the continuing challenges to providing robust and meaningful RCR education and creating responsible research cultures; and examples of specific approaches meant to address some of those challenges. Based on these discussions, and considering the deliberations of the breakout groups, we identified and formulated strategies that each partner sector can adopt by themselves and in cooperation with each other to strengthen the network of accountability for research integrity. Making and sustaining such changes in RCR education is a difficult task. It requires the separate and collective actions of numerous partners in the research enterprise. Only by involving these partners and coordinating their actions can RCR move beyond education to the creation of cultures of research integrity.

Strategies for Federal Grant-Making Agencies

1. Reframe their commitment to the responsible conduct of research as a positive and broad obligation rather than merely the avoidance of research misconduct.
2. Hold research institutions accountable and their leadership responsible for complying with the institutional assurances they submit or certify to funders.
3. Require a description of policies, programs, and resources related to institutional cultures of research integrity, including RCR educational programs, in all funding proposals.
4. When research misconduct or other violations of research integrity occur, consider reducing or otherwise mitigating institutional penalties if an institution has strong research integrity initiatives in place.

Strategies for Research Institutions

1. Conduct periodic internal, institution-wide inventories of RCR programs.
2. Assess the cost of effective RCR education and programming and commit appropriate funding and resources.
3. Provide and encourage participation in appropriate, tailored, and engaging RCR training for all who are engaged in research.
4. Seek guidance from the community of research integrity scholars, such as the APPE Research Integrity Scholars and Educators (RISE) Consortium, on best practices related to research integrity education.

5. Leverage existing tools to conduct periodic assessments of both the research integrity climate on campus and the effectiveness of RCR training programs.
6. Assess existing – or if none exist, consider developing – institutional policies, practices, and resources for protecting students and trainees in unhealthy research environments.

Strategies for Accreditation Bodies

1. Review policies and incorporate opportunities to hold institutions accountable for creating and maintaining effective responsible conduct of research programming.
2. Appropriately train peer evaluators and others who participate in accreditation assessments to ask questions about RCR education requirements and training programs.
3. Confidentially explore student, trainee, and early career faculty experiences with respect to the integrity of their training environments and institutional climate/culture.

Strategies for Professional Societies

1. Convene a working group to examine current and emerging ethical issues in the discipline, and assess whether the association has communicated relevant accepted norms of ethical research practice to their community.
2. Provide and regularly update disciplinary resources to support education and practice in responsible conduct of research.
3. Develop mechanisms to recognize exemplary research integrity programs and practices.
4. Highlight topics related to responsible research in conference sessions and plenary presentations.
5. Collaborate with cognate associations to encourage interdisciplinary work on research integrity.
6. Recommend that accreditation bodies include research integrity education as part of their accreditation criteria.
7. Incorporate explicit expectations of research integrity in the submission guidelines of journals published by professional societies.

Background

For over 30 years, federal grant-making agencies have relied on a system of responsible conduct of research (RCR) training and education as a tool for promoting research integrity. Since 1989, the National Institutes of Health (NIH) has required RCR education for trainees supported by NIH training grants (NIH 1989). The National Science Foundation (NSF) issued a similar requirement for NSF-funded students and postdoctoral scholars in 2009; and the United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA) followed shortly thereafter with a requirement for all personnel supported by the grant (2013). The NIH has updated their guidance twice (2011, 2022), and the NSF updated their requirement once (2023), in response to the CHIPS and Science Act (2022). Currently, these three federal grant-making agencies have similar mandates for providing RCR training to researchers and trainees supported by some of their funding programs, but there are significant differences regarding the scope of the requirement, and the content, format, duration and frequency of the training (Heitman 2024).

The current landscape of RCR education has been largely shaped by institutional responses to these federal grant-making agencies' compliance requirements. While some colleges and universities recognize the inherent value of RCR education and require all faculty, postdocs, graduate and undergraduate students engaged in research to complete training, many require only their federally mandated researchers to complete the training (Resnik and Dinse 2012). Likewise, while some colleges and universities have robust RCR programs that incorporate best practices in adult learning, many provide training that merely meets the minimum standards set by the federal grant-making agency (Phillips et al 2018). Furthermore, the training provided in response to these federal mandates tends to focus on the individual trainee or researcher, with an implicit goal of managing, through education, individual researcher behavior.

The training requirements of these federal grant-making agencies align with a general consensus that it is essential for all researchers to have the knowledge and skills both to prevent research misconduct and to produce research results that are valid and reproducible. However, the current requirements and related institutional practices fail to fully realize this goal in a number of ways. First, the federal mandates are limited in scope and do not cover all faculty, staff, and trainees engaged in research. The NIH mandate covers only a subset of grants generally referred to as "training grants"; faculty and trainees supported by other types of NIH grants (e.g., R01 and R03) are not required to complete RCR training. While the NSF and USDA-NIFA mandates cover all faculty and trainees engaged in research, they (like the NIH) cover only those researchers who are supported by their agency's funds. This network of federal mandates creates a patchwork of coverage that does not align with the need for RCR training. Second, the NSF and USDA do not state guidelines or requirements (with the exception of a few topics), and do not require submission or review of RCR training plans. The flexibility that the NSF and USDA allow institutions in providing the training, and the related lack of accountability, has resulted in institutions investing minimal resources and delivering the majority of RCR training through formats that fail to meet best practices in adult learning. Third, these training programs can be problematically narrow in their focus on individual behavior, the nature of research misconduct, and how an individual might avoid it.

There is growing understanding that research integrity is more than the absence of research misconduct, that it should promote good practice as well as address additional practices that are detrimental to research (National Academies of Sciences, Engineering, and Medicine 2017). The responsible conduct of research requires adherence to the values that should guide research, such as objectivity, honesty, openness, accountability, fairness, and stewardship (see Resnick & Shamoo, 2011; Macrina 2014; National Academies of Sciences, Engineering, and Medicine 2017). It also requires an awareness and avoidance of practices that, while not formally classified as research misconduct, erode the integrity of the research and the research community. These practices include, but are not limited to, p-hacking, mismanagement of data, non-financial conflicts of interest, and irresponsible authorship.

There is also growing awareness that a commitment to research integrity should focus not only on individual conduct, but also on the contexts in which research is conducted and will be applied, and proactively creating cultures of research integrity. That is, a commitment to moving beyond an approach that focuses primarily on the individual to one that includes a focus on cultures in which research takes place, and exploring how to instill integrity in individuals, groups, and throughout broader institutions (Gunsalus 1993, National Research Council and Institute of Medicine 2002, Lee 2023). Practices in the research environment which can erode the integrity of research include toxic supervision, abuse of power, inattention to trainee wellbeing, lack of effective institutional leadership and research support. When the informal aspects of research environments and cultures run counter to the goals of RCR, formal RCR education is an insufficient tool and should be supplemented with more comprehensive institutional support.

Research excellence and integrity depend on the creation of responsible research *cultures*, and the creation of cultures of integrity depends on the coordinated efforts of partners who are vested in the research enterprise—federal grant-making agencies, research institutions, accreditation bodies, and professional societies—to mandate, offer, endorse, and support comprehensive and relevant education on responsible research practices and to foster environments conducive to upholding these standards. Indeed, the conception of research integrity that informed the National Dialogue derives from the Institute of Medicine and National Research Council publication *Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct* (Institute of Medicine and National Research Council, 2002). Similar to the IOM/NRC report, we advocate for a commitment to good research practices, and to education in how to conduct research responsibly. We also broaden the focus to include the contexts in which research is conducted, supported, and disseminated, and reinforce the importance of being proactive in creating cultures of research integrity. Importantly, we advocate for enhancing RCR education infrastructure with improved understandings of actual research environments, and for best practices in recognizing and responding to flawed research cultures.

Working together can amplify the power of each partner sector to promote responsible research practices and cultures. Approaches to promoting research integrity have often been siloed *within* these partner sectors, where, for instance, institutions tend to work individually rather than in coordination, as is similarly the case with federal grant-making agencies, professional associations, and accreditation bodies. Likewise, approaches to research integrity have often been siloed *across* partners, with a lack of coordination among institutions, federal grant-making agencies, professional associations, and accreditation bodies. It is critical to understand the ways in which each sector can complement the others' efforts and abilities to promote research integrity and responsible research cultures.

To address these challenges to fostering responsible research practices and cultures of research integrity, the Association for Practical and Professional Ethics (APPE) held a National Dialogue on the State of Research Integrity Education. The aims of the Dialogue were to (1) characterize historical and current approaches used to teach responsible conduct of research and build cultures of research integrity, and (2) propose strategies to strengthen the network of accountability within and between those partners with vested interests across the research enterprise. We convened a meeting of approximately 40 colleagues from these partner groups that are essential to the responsible conduct of research. Those groups included research universities, federal grant-making agencies, higher education accreditation agencies, and disciplinary and multi-disciplinary professional societies. At the meeting, subject matter experts shared presentations on the history of RCR education mandates, described challenges and opportunities present in the current landscape, and finally, identified ways in which we might move forward with a more comprehensive sense of research integrity: ensuring researchers are educated and otherwise supported to conduct research responsibly, and tasking our partners in the research enterprise to attend to both education in the responsible conduct of research, and to the environments in which both education and research happen.

The meeting included breakout groups, organized according to partner sector, that were charged with identifying strategies to move forward, both within and between groups. Once reconvened, the groups reported back about their specific conversations, and a final general discussion among all partners resulted in endorsement of the following strategies.

Strategies for Federal Grant-Making Agencies, Research Institutions, Accreditation Bodies, and Professional Societies

Key partners within the research ecosystem have the responsibility to support good practices and cultures in their own sector, as well as the opportunity, and in some instances, the authority, to hold others accountable for promoting the responsible conduct of research. All partners, therefore, should not only assume responsibility for their own sectors, but also be willing to hold others accountable for meeting and fulfilling their obligations, and in turn be willing to be held accountable by others—in *a network of accountability*.

The strategies suggested below for key vested partners—federal grant-making agencies, research institutions, accrediting bodies, and professional societies—are not novel, but rather build on the foundations laid by numerous reports issued by various committees over the last three decades (NASEM, 1992, 2017; IOM/NRC 2002). These reports, singly or collectively, identified actions that each of the partners should take to foster responsible research practices and cultures. In this report, we emphasize the continuing need for these vested partners each to live up to those responsibilities (e.g., federal grant-making agencies should promote a comprehensive approach to RCR and professional societies should develop discipline-specific instructional materials), but more importantly, we explicitly highlight overlap and synergies between and across the different partner groups that we believe are essential to ensuring that RCR is at the core of researchers' training and that each partner is held accountable for achieving this goal.

Some of these strategies enhance existing compliance based RCR training, while others address culture and climate, going beyond simple educational initiatives. There is overlap in strategies suggested for the different sectors to address these two areas, such that, in contrast to traditional approaches to ensuring research integrity, which are siloed and independent, many of these strategies require partners to work together to strengthen the infrastructure for RCR training and develop additional mechanisms to promote a broader research integrity. Only by working together, identifying the strengths of each sector, developing synergies between and across sectors, and capitalizing on opportunities for collaboration and coordination, can the network of accountability for research integrity throughout/across the research enterprise be realized.

Strategies for Federal Grant-Making Agencies

Federal grant-making agencies exert influence on research institutions by requiring compliance with certain policies as a condition of receiving essential research funding. As noted above, federal grant-making agencies require training in the responsible conduct of research, and these regulations have shaped RCR education over the years.

In their 2017 publication *Fostering Integrity in Research*, The National Academies of Sciences, Engineering, and Medicine offered a checklist for best RCR practices in research institutions (National Academies of Sciences, Engineering, and Medicine, 2017). These best practices addressed several key areas including research management, climate assessment, misconduct investigations, and RCR training. Although many of the most important RCR areas appear on this list, greater attention needs to be paid to topics of neglected (but increasing) importance, such as ethical leadership at both the laboratory/research group and institutional levels.

Federal grant-making agencies appear to be moving toward this broader conception of what makes a responsible research environment. In 2022, NIH added a topic—"safe research environments (e.g., those that promote inclusion and are free of sexual, racial, ethnic, disability and other forms of discriminatory harassment)"—to its suggested areas of focus for RCR education (NIH, 2022), and NSF added for the first time a

specific requirement that RCR training include "mentor training and mentorship" (NSF, 2022). While these are welcomed acknowledgements, much more work from federal grant-making agencies is needed in this area.

In addition to promoting a more substantial, positive vision of RCR, federal grant-making agencies could offer more guidance for building meaningful and robust RCR education programs, resulting in research that is worthy of public funding and public trust.

Federal grant-making agencies could pursue the following strategies to strengthen the network of accountability for research integrity:

1. Reframe their commitment to the responsible conduct of research as a positive and broad obligation rather than merely the avoidance of research misconduct.

RCR education has been largely framed in negative rather than positive terms, concerned with preventing research misconduct by a few bad researchers. However, this approach is based on flawed assumptions about the nature of research and RCR. Misconduct results from individual actions that are influenced, sometimes even encouraged, by systemic factors, including misaligned incentives that can provide rationalization for bad behavior. Rather than thinking about RCR in negative terms and focusing primarily on such education as a way to prevent research misconduct, RCR should focus on and reinforce expectations of good research practices and behaviors; it can emphasize research integrity, which has been defined as "doing good science in a good manner" (Dubois and Antes 2018, pg 2). With this framing, a commitment to the responsible conduct of research would help researchers improve both the process and outcome of their work. Federal grant-making agencies could help institutions with framing RCR in these terms through guidance that emphasizes the value of improving research outcomes, and can work with accreditation bodies and professional societies to specify and help regulate what conducting research responsibly would mean in different research fields, laying out a clear vision and framework for conducting responsible research.

2. Hold research institutions accountable and their leadership responsible for complying with the institutional assurances they submit or certify to funders.

Institutional assurances are declarations by research institutions that they are following and will follow relevant regulations. Under 42 CFR 93 subpart C, for example, institutions that accept research funds from the US Public Health Service must agree to "[f]oster a research environment that promotes the responsible conduct of research, research training, and activities related to that research or research training, discourages research misconduct, and deals promptly with allegations or evidence of possible research misconduct" (Code of Federal Regulations, 2023). While these assurances already exist, the nature and importance of institutional assurances could be better communicated to institutional leaders, ensuring that leadership is cognizant of the contents of their assurances and their responsibility for upholding them.

3. Require a description of policies, programs, and resources related to institutional cultures of research integrity, including RCR educational programs, in all funding proposals.

Proposals for federal funding typically include the review criterion for environment (e.g. Facilities, Equipment and Other Resources), and describe how that environment would contribute to the probability of success**.** To increase accountability for institutional development and implementation of effective RCR programs, a discussion of RCR initiatives and resources should become a requirement in funding proposals. This requirement could motivate research institutions to take seriously and invest financial resources to "[f]oster a research environment that promotes the responsible conduct of research, research training, and activities related to that research or research training" (Code of Federal Regulations, 2023). Further, institutional resources are indicative of the quality of research efforts and outcomes, so RCR should be considered a quality bolstering factor. Research institutions are more likely to create and support research integrity initiatives if federal funding is on the line.

4. When research misconduct or other violations of research integrity occur, consider reducing or otherwise mitigating institutional penalties if an institution has strong research integrity initiatives in place.

As previously outlined, individual researchers are typically held to account for research misconduct. However, research misconduct rarely occurs in a vacuum. It is enabled by weak or damaging institutional cultures and perverse incentives. Because of this, research institutions can and should continue to be held publicly responsible for research misconduct when they fail to foster responsible research cultures. Holding institutions responsible will motivate research institutions to invest time and money in effective RCR initiatives and promoting cultures of research integrity. When institutions have done so and infractions still occur, these infractions may not be reflective of the culture of integrity at the institution. If this is the case, federal grant-making agencies could consider an institution's policies and systems promoting a culture of integrity as a mitigating factor when determining administrative remedies [see 2 CFR 200.339]. Working with research institutions constructively to identify areas for improvement in such circumstances could incentivize the development of strong cultures of research integrity.

Strategies for Research Institutions

Research institutions train future researchers who will work in a variety of public and private settings, including universities and industry. Ensuring both methodologic competence and responsible research conduct is a key role in all researcher training. Institutions follow requirements related to RCR education set forth by research funders as well as applicable university, state, and federal policy. Research institutions vary by size and complexity, variance which affects RCR education needs and approaches. Compared with colleges and universities with smaller research portfolios, large research-intensive universities have a larger number and more varied funders, faculty, trainees, and research groups with whom they must address responsible research development. Scaling RCR education programs to accommodate such differences should be considered when identifying RCR education strategies, but institutions should take responsibility for their responsible research programs regardless of institutional size or complexity.

Research institutions should pursue the following strategies to strengthen the network of accountability for research integrity:

1. Conduct periodic internal, institution-wide inventories of RCR programs.

Given the variety of requirements for RCR education across federal grant-making agencies and content across fields, research institutions might not have a sense of where RCR education and programming occurs across their curricula. In the absence of an inventory, it is impossible to assess the efficacy of RCR education initiatives. Such inventories should include specific educational requirements as well as exemplary programming in departments and research groups. Inventories should include what is being taught, how RCR is being taught, as well as by and to whom it is being taught. The inventory should also identify the level of the programming—whether it is aimed at individuals, groups, overall culture—as well as goals and objectives of RCR education, federal policies they fulfill, and communication and outreach activities related to RCR. Periodic inventories should also include a determination of how education is being evaluated and the impact it is having. Routine assessment and evaluation is an important way for institutions to hold themselves accountable for meaningful and effective RCR programming.

2. Assess the cost of effective RCR education and programming and commit appropriate funding and resources.

To estimate the cost of effective responsible conduct of research education, research institutions must first determine where such education exists across curricula, what might be missing from their current RCR programming, and what it would mean for RCR to be appropriate and effective. Once these questions are answered, research institutions must determine the real costs of providing RCR programming. Estimating costs should consider both the cost of program development and delivery as well as potential losses or fines resulting from RCR infractions, including reputational damage. Many research institutions provide too little financial support for effective RCR programming or rely solely on existing budgets and add RCR education responsibilities as additional duties to existing faculty or staff.

Given the lack of dedicated federal funding for research integrity training, the onus is on research institutions to adequately fund and support a strong RCR program. Although there has been some work to guide the ways research universities meet the NSF training mandate (Phillips et al 2017), many RCR coordinators, administrators, and educators in the US have described challenges in raising both money and support (from administration, faculty, or both) to develop robust and effective programming. Compared with the cost of doing research—especially basic laboratory and biomedical research—costs for developing and implementing responsible research education are quite small, so small that allocating even 0.1 percent of a university's research budget to research integrity education would provide an adequate starting point (Kalichman 2006). In addition to providing needed resources, when budgets are allocated to an activity, institutions and funders tend to be more interested in accounting for those funds.

3. Provide and encourage participation in appropriate, tailored, and engaging RCR training for all who are engaged in research.

To improve accountability, RCR education must become an organizational endeavor aimed at transforming research cultures. This requires soliciting and incorporating the expert knowledge and active participation of researchers at all stages of their careers, across the research spectrum. This also requires the coordinated efforts and support of administrators and researchers throughout institutions. Traditionally, RCR education has focused on research trainees and tended to comprise topics relevant to the field of biomedical research. Given that nearly all disciplinary and professional fields train researchers and have an interest in conducting valid and reliable research, different types of RCR education and programming would be more appropriate to different kinds of research professionals and research fields. RCR education topics and programming should be tailored to the educational needs, disciplinary focus, and professional development stage of the various audiences.

While all researchers need an understanding of basic research ethics topics, researchers in social and educational sciences might need different focus on specific topics than their biomedical or engineering counterparts. Discipline-specific topics should be covered in a comprehensive RCR program. Research institutions should engage discipline-specific professional societies to assist with the development of discipline-specific topics and education experiences. Institutions must tailor the content, form, frequency, and duration of RCR education to different audiences. Institutions must abandon the "silver bullet" myth of RCR training, that one type of intervention serves all fields equally. Rather, RCR education should focus more on skills that apply across research fields than general RCR topics, and it should emphasize active rather than passive learning.

In an effort to increase relevance, research institutions should incorporate researchers from all levels of the research environment in the co-production and co-presentation of topics and educational programming—including students, trainees, laboratory and research staff, postdoctoral fellows, principal investigators, co-investigators, and research managers. Doctoral students need different RCR education—both topics and pedagogical methods—compared with experienced principal investigators. RCR education should be framed as professional development for all researchers and offered institution-wide as opposed to a set of required topics or classroom hours to be completed in order to release grant funds.

4. Seek guidance from the community of research integrity scholars, such as the APPE Research Integrity Scholars and Educators (RISE) Consortium, on best practices related to research integrity education.

Research and scholarship published over the past decade has produced some promising practices and revealed a number of gaps related to research integrity education. Research institutions should consult the research integrity scholarly community to ensure that their RCR education programming meets contemporary standards of best practices for the field. Much of this research has been conducted by and at the institutions of members of the APPE RISE Consortium, which serves as a resource for research integrity colleagues across the globe. For example, in 2023 APPE RISE crafted several documents—to be posted to the Online Ethics Center website in 2024—that provided guidance for RCR education and drafting institutional RCR plans; institutions could take advantage of this guidance to help ensure they are meeting the contemporary standards of best practices for the field.

Research institutions with long-standing and exemplary RCR programming that makes use of best practice guidelines should commit to support peer institutions to develop similarly effective programs by sharing educational materials, institutional experiences, and methods of evaluation. It would help institutions that are interested in starting or improving RCR initiatives to know what to do and how to do it. This work could be undertaken in collaboration with professional societies.

5. Leverage existing tools to conduct periodic assessments of both the research integrity climate on campus and the effectiveness of RCR training programs.

Over the past two decades, research integrity scholars have come to appreciate the role of institutional culture and research group climates on facilitating research excellence. As a result, a new research focus on factors that lead to a culture of ethical excellence has emerged. Recognition of the role of principal investigators and mentors in creating research group cultures led the National Science Foundation to expand RCR training requirements in 2023 to include all faculty and senior personnel funded by the agency (NSF 2023).

Institutions should assess how inputs and resources affect research outputs, which should be part of a continuous effort to improve the quality of RCR education and to ensure healthy research climates. Assessment of researcher perceptions about the research integrity climate and culture of their institution and department provides important data for the development of effective responsible research education. Institutions should conduct periodic surveys using reliable tools (e.g., SOURCE, n.d.; Collaborative on Academic Careers in Higher Education, n.d.) to inform tailored improvements to integrity programming in individual departments as well as across the institution writ large. Engaging faculty champions to encourage survey completion and providing results back to the research community can send positive messages about integrity as a priority for top leaders.

6. Assess existing – or if none exist, consider developing – institutional policies, practices, and resources for protecting students and trainees in unhealthy research environments.

Despite best institutional efforts, irreconcilable conflict can occur between trainees and their research supervisors. Stressful, discriminatory, or toxic laboratory or research group environments can lead to practices that are detrimental to both trainees and the integrity of the research. The costs of extricating students and trainees from such environments are high. They face a choice of leaving the graduate program entirely, losing months or years of effort by switching advisors, or working as quickly as possible to complete their project, which could lead to a poorer training experience and behaviors that are detrimental to the integrity of the research. In an effort to support students and trainees, research institutions should develop mechanisms and resources that allow trainees to work in a healthier research environment without losing time and effort already invested. In addition to adopting proactive approaches, such as the use of mentoring compacts that align expectations and address common sources of conflict, and regularly providing substantive mentor training for faculty, other resources at the point of conflict could include clearly communicated processes for reporting grievances, conflict resolution and mediation, mental health support, an Ombuds dedicated to trainees, mandated interventions to address supervisory or lab leadership shortcomings, and protected mobility to a different environment and supervisor.

Strategies for Accreditation Bodies

Higher education accreditation bodies are charged with ensuring that the education provided in colleges and universities meets acceptable standards of quality, both at the overall institutional and individual program levels. Both levels of accreditation play an important role in the success of higher education institutions and could play a greater role in holding research institutions accountable for creating and maintaining cultures of research integrity through effective programming in the responsible conduct of research (RCR).

Accreditation bodies have a unique opportunity—one not taken to date—to assess and evaluate RCR education programming that higher education institutions provide as part of meeting federal requirements. The Higher Learning Commission's 2020 Criteria for Accreditation does include a criterion related to RCR education for basic and applied research, but at present, those accreditation requirements are underspecified (Higher Learning Commission, 2023). While the document calls for oversight and effective support, it does not specify what this oversight or guidance would consist of nor how it would be assessed.

Accreditation boards for particular fields could make assessing RCR education and programming more central in the accreditation process. For instance, engineering's Accreditation Board for Engineering and Technology's[1] (ABET) criterion 6, which focuses on faculty, could address the responsibilities faculty have to foster research integrity in their research groups or laboratories, a criterion that could be added and assessed. Laboratory and faculty leaders play a substantial role in the lives of trainees, and the relationship between leadership and research cultures is crucial. The lead faculty should have direct involvement in fostering the responsible conduct of research. In addition to assessing safety issues or other violations when visiting engineering laboratories, ABET program evaluators could ask RCR-related questions about laboratory and research group culture, including lab leadership, mentoring, data collection, documentation, storage practices, authorship practices, and so on.

Similarly, ABET's criterion 8, which focuses on institutional support, emphasizes resources available to support the attainment of student outcomes. This criterion could explicitly address resources for student outcomes related to research integrity and professionalism.

The creation of substantive, evidence-based accreditation criteria for assessing RCR programming will help to galvanize a shared institutional commitment to research integrity across disciplines and fields. These changes could encourage RCR-related conversations throughout college and university hierarchies. Department chairs and heads could hold faculty responsible, deans could hold department heads responsible, and so on. Integrating RCR-related standards into accreditation criteria would provide a powerful additional motivation for colleges and universities to improve RCR education and programming.

Accreditation bodies should pursue the following strategies to strengthen the network of accountability for research integrity:

1. Review policies and incorporate opportunities to hold institutions accountable for creating and maintaining effective responsible conduct of research programming.

Accreditation bodies that do not currently include a requirement related to research integrity should consider adding this requirement to their review criteria. Since the responsible conduct of research is integral to the performance of research more broadly, accreditors should review RCR programming alongside other research-related requirements. In all research institutions, research is an integral part of the educational mission and accreditation bodies should include a review of RCR education and policies as part of the means of attaining educational objectives. Discipline-specific accreditation bodies should develop these standards in collaboration with professional societies.

2. Appropriately train peer evaluators, who participate in accreditation assessments, to ask questions about RCR education requirements and training programs.

For accrediting bodies to adequately review RCR education, evaluators must be trained to assess RCR education and programming. Accreditation bodies should develop effective assessments and train evaluators to use them to evaluate RCR education and policies at colleges and universities. Such evaluator training should be incorporated into the training that accreditation bodies provide to their site visitors. Incorporating the evaluation of research integrity efforts would position RCR as an expectation of accrediting bodies and communicate to institutions that research integrity education is as integral to the research process as training on research methods. Depending on the nature of the accreditation body, this process could be research field-specific and developed with input from professional societies.

3. Confidentially explore student, trainee, and early career faculty experiences with respect to the integrity of their training environments and institutional climate/culture.

[1] Though ABET largely accredits undergraduate programs, there are enough undergraduate research students in labs world-wide that this emphasis on research integrity should be part of the ABET mission.

Ensuring enculturation of integrity among research trainees and new faculty is an essential task of academic research institutions. Accrediting bodies should assess trainee and early career faculty experiences and perspectives about how the institution, department, and research group develop and maintain a culture of integrity and provide research integrity education. For example, while evaluators observe laboratory facilities, they should confidentially ascertain student and trainee experiences, how students and trainees perceive the integrity and support in their laboratory or research group. Where possible, evaluators should assess the extent to which students, trainees, and early career faculty are comfortable with and competent in RCR-related topics and skills.

Strategies for Professional Societies

Professional societies are uniquely situated to be leaders in promoting the responsible conduct of research. As membership organizations, professional societies have direct access to individual researchers as well as academic departments that train the next generation of scientists. In addition, professional societies have the power of voice, being in a position to advocate on behalf of their members' interests in robust funding, maintaining the integrity of public data resources, and effective protection of human participants in research, among other RCR concerns. Professional societies also have a convening power, by which they bring people together for the purposes of research exchange, professional development, dissemination of research findings, and a celebration of accomplishments. And last but not least, professional societies have a legitimating, or standard-setting, power through the adoption of codes of ethical conduct.

Professional societies set standards for how their members should conduct research in their respective disciplines, and while some professional societies robustly integrate research integrity into their ethos and core programming, others address only some aspects of research integrity (e.g., working with human participants or nonhuman animals, or publication practices). Other professional societies do not, as part of their general operations or programming, highlight research integrity in general, or do not address critical research integrity issues such as relationships between students and faculty, between peers, and between colleagues.

Because professional societies explicitly and implicitly set standards for research in their fields, they have a unique opportunity to integrate responsible research practices into the broader research enterprise. When professional societies adopt codes of ethical conduct, they should ensure that the code includes a robust framework for fostering responsible research practices; they can, and often do, provide discipline-specific educational opportunities for members and nonmembers; and they can serve as a resource for federal grant-making agencies, research institutions, and accreditation bodies, providing best practices and expectations of researchers in their professional community.

Professional societies represent the interests of their members, such as advocating for research funding and communicating with policymakers. They also provide necessary guidance and resources for members along an array of disciplinary concerns and practices, including a more well-rounded education and training that encompasses responsible research practices, career development and professional responsibilities such as mentoring and peer collaborations. Professional societies can and should play a crucial role in the broader conversation about responsible research.

Professional societies should pursue the following strategies to strengthen the network of accountability for research integrity:

1. Convene a working group to examine current and emerging ethical issues in the discipline, and assess whether the association has communicated relevant accepted norms of ethical research practice to their community.

Professional societies should better integrate RCR commitments and expectations into their mission, resources, and practices. They should communicate both clear principles of integrity and specific behavioral expectations. For example, many professional societies have codes of ethics or codes of conduct that address responsibilities and obligations of their members. The standards contained in these codes serve as a statement of expectations to members, an educational tool for members to incorporate into training programs, and a

statement to the public about what they can expect from the profession and its practitioners. Professional societies should examine their codes of ethical conduct to assess whether they accurately represent the profession's commitment to values and expectations of responsible researchers in the particular field. Professional societies should then examine their current RCR resources and if they are inconsistent with the profession's ethical expectations, are outdated, or have not yet been developed, and should engage their membership to develop effective RCR educational tools.

2. Provide and regularly update disciplinary resources to support education and practice in responsible conduct of research.

Professional societies should better support responsible research practices by developing and promoting field-specific RCR resources to all members. These RCR resources should address discipline specific norms and codes of ethics when relevant, and provide educational materials such as discipline-specific case studies. These discipline-specific materials should be designed to complement general RCR education resources used at many institutions. Such initiatives should take place in collaboration with federal grant-making agencies and research institutions.

3. Develop mechanisms to recognize exemplary research integrity programs and practices.

Recognizing RCR efforts of individual members of their society as well as academic departments would underscore the importance of RCR and encourage its promotion in research. Integrity awards should be framed like other research and mentorship awards developed and distributed by professional societies. To ensure the highest visibility of the recognition, professional societies should take care to nominate productive or innovative researchers who explicitly incorporate integrity priorities.

4. Highlight topics related to responsible research in conference sessions and plenary presentations.

Conferences organized by professional societies often host distinguished speakers on discipline-specific topics, for instance, methods and funding. Similar speaking engagements should be organized for speakers with RCR expertise in the field. As with awards, prominently featuring RCR speakers at conferences would help to communicate the importance and raise the profile of research integrity in professional societies and their corresponding research fields.

5.Collaborate with cognate associations to encourage interdisciplinary work on research integrity.

Research integrity should be a priority for all professional and academic disciplines and professional societies could benefit from engaging in cooperative rather than siloed efforts. Furthermore, as transdisciplinary research becomes more of a focus at most research-intensive institutions, discipline-specific integrity practices might be at odds. Given their role for setting expectations for excellence in a particular discipline, professional societies should work together to develop principles and best practices for interdisciplinary research collaborations. The APPE RISE Consortium, as a convener of the largest group of research integrity scholars, should facilitate professional societies' efforts to engage across disciplines to promote transdisciplinary integrity collaborations. Such effort should be coordinated with federal grant-making agencies, since federal grant-making agencies are concerned with and often promote interdisciplinary research.

6. Recommend that accreditation bodies include research integrity education as part of their accreditation criteria.

Discipline-specific accreditation bodies are highly responsive to the standards and policies adopted and endorsed by professional societies. For that reason, professional societies should recommend that their disciplinary accreditation body evaluate standards and policies for RCR education and programming. Even if accreditation bodies are inclined to develop such standards and policies themselves, they are more likely to be applied with additional support from professional societies.

7. Incorporate explicit expectations of research integrity in the submission guidelines of journals published by professional societies.

Scholarly journals, monographs, books, and other publications promote research associated with a particular disciplinary field. Publishers serve as gatekeepers of scholarship and should require as a condition of publication that authors attest to conducting their work in accordance with disciplinary expectations—as well as broader research standards and expectations—for research integrity. This model has been implemented by many publishers regarding human and animal subjects protections, requiring confirmation of review by the appropriate research review board before publication, as well as financial conflicts of interest and other conflicts of commitment, requiring disclosure and publication of such interest. However, there are other practices that are not governed by review boards but that can nevertheless be problematic. Having clear standards for those practices (e.g., deception and debriefing, authorship, management of data, and appropriate permissions) and confirming that those disciplinary standards have been met can be helpful in communicating the importance of conducting research responsibly. Attestation of adherence to disciplinary expectations of research integrity would place the responsible conduct of research at the center of research endeavors, thereby promoting research progress and public trust in science.

References

ABET. (n.d.-a). Retrieved May 9, 2024, from https://www.abet.org

ABET. (n.d.-b). Member Societies. Retrieved March 12, 2024, from https://www.abet.org/member-societies/

Chips and Science Act – H.R.4346 (2022). 117th Congress (2021-2022). Retrieved from https://www.congress.gov/bill/117th-congress/house-bill/4346?q=%7B%22search%22%3A%22H.R.4346+Chips+and+Science+Act%22%7D&s=1&r=1

The Collaborative on Academic Careers in Higher Education. (n.d.). Retrieved May 9, 2014, from https://coache.gse.harvard.edu/#

DuBois, J. M., & Antes, A. L. (2018). Five Dimensions of Research Ethics: A Stakeholder Framework for Creating a Climate of Research Integrity. *Academic Medicine, 93(4)*, 550–555. https://doi.org/10.1097/ACM.0000000000001966

Gunsalus, C. K. (1993). Institutional Structure to Ensure Research Integrity. *Academic Medicine, 68(9)*, S33–S38. https://doi.org/10.1097/00001888-199309000-00031

Federal Register Volume 74, Number 160. (2009, August 20). Notices, 42126-42128. Retrieved May 8, 2024 from https://www.gpo.gov/fdsys/pkg/FR-2009-08-20/pdf/E9-19930.pdf

Heitman, E. (2024). What Does it Mean to Teach "RCR"? in advance. *Teaching Ethics*. https://doi.org/10.5840/tej2024430146

Higher Learning Commission. (2023). *HLC Policy Book*. Retrieved March 12, 2024, from https://download.hlcommission.org/policy/HLCPolicyBook_POL.pdf

Institute of Medicine and National Research Council. 2002. *Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct*. Washington, DC: The National Academies Press. https://doi.org/10.17226/10430.

Kalichman, M. W. (2006). Ethics and Science: A 0.1% Solution. *Issues in Science and Technology, 23(1)*, 34–36. Retrieved from http://www.jstor.org/stable/43314367

Lee, L. M. (2023). Research Integrity and the Regulatory-Industrial Complex. *Accountability in Research*. https://doi.org/10.1080/08989621.2023.2179395

Macrina, F. L. (2014). Scientific integrity: Text and Cases in Responsible Conduct of Research. John Wiley & Sons.

National Academies of Sciences, Engineering, and Medicine. (1992). *Responsible Science: Ensuring the Integrity of the Research Process*. Washington DC: The National Academies Press. https://doi.org/10.17226/1864

National Academies of Sciences, Engineering, and Medicine. (2017). *Fostering Integrity in Research*. Washington, DC: National Academies Press. https://doi.org/10.17226/21896

NIH. (1989). *NIH Guide for Grants and Contracts (Vol. 18)*. Retrieved from https://grants.nih.gov/grants/guide/historical/1989_08_11_Vol_18_No_27.pdf

NIH. (2011, April 19). Update on the Requirement for Instruction in the Responsible Conduct of Research. Retrieved January 31, 2024, from https://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-019.html

NIH. (2022, February 17). FY 2022 Updated Guidance: Requirement for Instruction in the Responsible Conduct of Research. Retrieved January 31, 2024, from https://grants.nih.gov/grants/guide/notice-files/NOT-OD-22-055.html

NSF. (2023). *Proposal & Award Policies & Procedures Guide (PAPPG)*. Retrieved from https://nsf-gov-resources.nsf.gov/2022-10/nsf23_1.pdf

Phillips, T., Nestor, F., Beach, G., & Heitman, E. (2018). America COMPETES at 5 years: An Analysis of Research-Intensive Universities' RCR Training Plans. *Science and Engineering Ethics, 24(1)*, 227–249. https://doi.org/10.1007/s11948-017-9883-5

Remedies for Noncompliance, 2 CFR § 200.339 (2020). https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR86b76dde0e1e9dc/section-200.339

Resnik, D. B., & Dinse, G. E. (2012). Do U.S. Research Institutions Meet or Exceed Federal Requirements for Instruction in Responsible Conduct of Research? A National Survey. Academic Medicine, 87(9), 1237–1242.

Resnik D.B. & Shamoo A.E. (2011). The Singapore Statement on Research Integrity. Accountability in Research. 18(2), 71-5.

Responsibilities of Institutions, 42 CFR § 93.300 (2023). https://www.ecfr.gov/current/title-42/chapter-I/subchapter-H/part-93/subpart-C

SOURCE: Research Climate Measure. (n.d.). Retrieved May 9, 2024, from https://ncpre.csl.illinois.edu/institutional-integrity/source

USDA (2013) Research Terms and Conditions. Retrieved May 8, 2024 from https://www.nsf.gov/pubs/policydocs/rtc/agencyspecifics/nifa_213.pdf

Appendix

Appendix 1: Meeting Agenda

APPE Presents: National Dialogue on the State of Research Integrity Education

November 8 and 9, 2023
Washington DC

Wednesday, November 8, 2023

National Academies of Sciences, Engineering, and Medicine, Room 120
2101 Constitution Avenue, NW, Washington D.C.

8 a.m.	**Breakfast**
8:30 to 8:45 a.m.	**Welcome and Opening Remarks** **Dena Plemmons, PhD; APPE Chair** **Lisa M Lee, PhD, MA, MS; APPE Immediate Past Chair**
8:45 to 9:15 a.m.	**Session 1: Where have we been? 1988 to present: Introducing responsible conduct of research training into the federally funded research infrastructure** **Presentation 1: What do we mean when we say "RCR instruction"** **Presenter: Elizabeth Heitman, PhD** Professor, Program in Ethics in Science and Medicine, University of Texas Southwestern Medical Center **Presentation 2: Responsible science in a non-ideal world** **Presenter: Jon Herington, PhD** Assistant Professor of Philosophy and Health Humanities & Bioethics, University of Rochester
9:15 to 10 a.m.	**Discussion**
10 to 10:15 a.m.	**Break (Coffee and snacks available)**
10:15 to 11:15 a.m.	**Session 2: Where are we now? What is working and what is not** **Presentation 1: What should we keep doing and where can we improve? Evidence on the effectiveness of research ethics education** **Presenter: Tristan McIntosh, PhD** Assistant Professor of Medicine, Bioethics Research Center at Washington University School of Medicine **Presentation 2: Barriers to effective RCR Education** **Presenter: Michael Kalichman, PhD** Professor Emeritus, University of California, San Diego

Presentation 3: **Unanticipated challenges and their consequences**
Presenter: Nicholas H. Steneck, PhD
Professor Emeritus of History, University of Michigan; Leader RCR Advisor, Epigeum; Independent RI Consultant

Presentation 4: Implementation on the ground: Administrative perspective as well as student perspective
Presenter: Kory Trott, JD
Director, Researcher Integrity and Consultation Program at Virginia Tech

11:15 a.m. to Noon **Discussion**

Noon to 1 p.m. **Lunch**

1:15 to 2:15 p.m. **Session 3: Where should we go? How can we get closer to what we want?**

Presentation 1: What does federal funding agency commitment look like?
Presenter: Sharon Milgram, PhD
Director, Office of Intramural Training & Education at National Institutes of Health

Presentation 2: What does institutional commitment look like? Research Integrity Leadership and Assessment Strategies
Presenter: Carol Thrush, EdD
Professor, Departments of Surgery, Medicine and Graduate Medical Education at the University of Arkansas for Medical Sciences

Presentation 3:
What does accreditation-agency commitment look like?
Presenter: Laura Grossenbacher, PhD
Director of the Technical Communication Program and the Director of the Undergraduate Program Review in the College of Engineering at the University of Wisconsin-Madison

Presentation 4: What does professional society commitment look like?
Presenter: Billy M. Williams, MS
Executive Vice President, Diversity and Inclusion at American Geophysical Union

2:15 to 3:15 p.m. **Discussion**

3:15 to 3:30 p.m. **Break**

3:30 to 4 p.m. **Session 4: Charge for tomorrow**
Dena Plemmons, PhD, APPE Chair

Thursday, November 9, 2023

National Academy of Sciences, Room 120
2101 Constitution Avenue, NW, Washington D.C.

8 a.m. **Breakfast**

8:30 to 8:45 a.m. **Welcome and opening remarks**
Dena Plemmons, PhD.; APPE Chair
Lisa M Lee, PhD, MA, MS; APPE Immediate Past Chair

8:45 to 10:15 a.m. **Session 5: Small group work to identify strategies by constituent groups**

- Federal Funding Agencies
- Institutions

- Professional Societies
- Accreditation

10:15 to 10:30 a.m. **Break (Coffee and snacks available)**

10:30 to 11:30 a.m. **Session 6: Presentation of small group strategies and large group discussion by chairs/co-chairs**

11:30 a.m. to Noon **Session 7: Next steps and concluding remarks**
Dena Plemmons, PhD; APPE Chair
Lisa M Lee, PhD, MA, MS; APPE Immediate Past Chair

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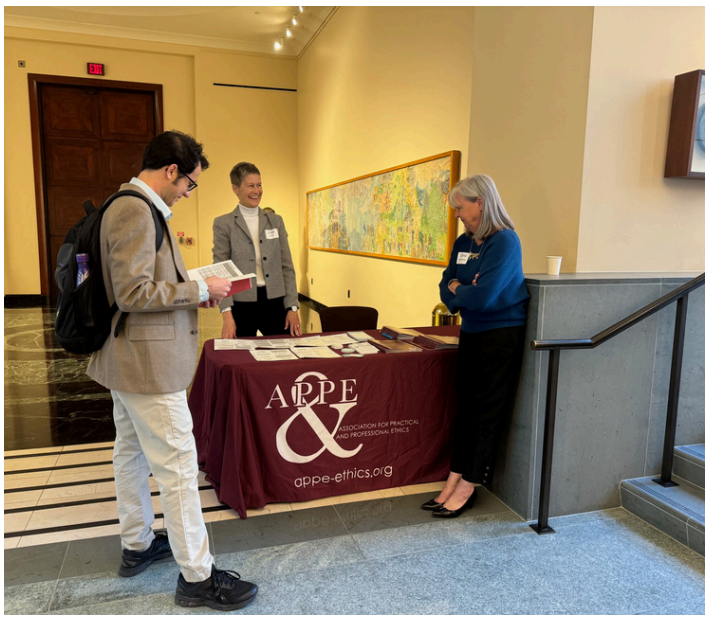

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