

Symposium Articles

Fostering Accountability: How Institutions Can Promote Research Integrity with Practical Tools and Knowledge

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Abstract

Research is a human enterprise, and for institutions to hold themselves accountable, people and structures must work in concert. Too many institutions limit their accountability to enforcing formal rules and regulations. This undermines their everyday functioning, institutional integrity, and public trust. In so doing, they fail to honor their own educational, research, and service missions. Institutional accountability for research integrity means going beyond enforcing regulations, teaching required responsible conduct of research courses, and responding to allegations of misconduct. It means recognizing and acting upon the knowledge that researchers' interpersonal conduct is crucial for creating and sustaining productive and healthy work environments, and that work environments often dictate the norms and behaviors that create (or undermine) a strong culture of research integrity within an institution. Everyday actions of setting the tone, defining success, articulating values and expectations, and providing resources are crucial foundations of an institutional working culture that consistently values rigor, reproducibility, belonging, and integrity. Providing and normalizing engaging, relevant professional development programs is one way to be proactive about supporting all organizational members to be accountable for work cultures that buttress research integrity.

Keywords: accountability; research ethics; professional development; research integrity; research misconduct

Introduction

What does it mean for a university or research institution to “hold itself accountable?” In part, institutional accountability means sustaining high standards for research quality and integrity, acting in ways that align with the organization's mission, and being accountable to organizational members, funding entities, and the public. Institutional accountability is about processes as much as outcomes: it means caring about both *what* work is done and *how* that work is done. Too many institutions limit their accountability to enforcing formal rules and regulations while offering minimal support for the complex interpersonal challenges that shape an organization's work environment. This undermines their everyday functioning, institutional integrity, and public trust. In so doing, they fail to honor their own educational, research, and service missions.

Purpose: Identify Paths Forward for Enhancing Institutional Accountability

There are concrete, achievable, practical ways that institutional leaders can promote research integrity and hold themselves

accountable within their organizations. Fundamentally, we argue that institutions must create and sustain environments where there is both support for people to succeed, and consequences for breaches in ethical conduct. How might institutions accomplish this? From a practical perspective, this means providing meaningful, realistic, relevant professional development opportunities for organizational members — in addition to conveying rules and regulations — and providing guidance on how to improve conduct when appropriate. This also means responding effectively and transparently when research ethics problems arise, and it means monitoring institution-wide skills, behaviors, and work climates in a sustainable way through routine, scalable, benchmarked assessments.

Other papers in this symposium are addressing institutional responses to misconduct and explore the importance of transparency in those processes.¹ In this paper, we focus on daily practices for fostering research integrity and institutional accountability. We start by outlining common challenges and barriers to institutional accountability that include institutional reward structures, overdependence on compliance-focused Responsible Conduct of Research (RCR) training, and ambiguous diffusion of responsibilities within institutions. Then, we propose three specific avenues for enhancing institutional accountability and provide illustrative examples that show why these avenues can be effective. Finally, we describe evidence-based programs that the National Center for Principled Leadership and Research Ethics (NCPRE) offers to buttress institutional accountability.

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The Challenge of the Existing (Flawed) Reward Structure

A central challenge to institutional accountability is the existing reward structures at institutions that emphasize — disproportionately — *what* work is done without enough emphasis on *how* that work is done. Most institutions rely on metrics of grant funding, publications, prizes, prestigious memberships, and numbers of “star” researchers. These metrics indicate “success” no matter how they are achieved, and without regard to sustainability, which is damaging to the scientific enterprise,² as well as demoralizing to those observing higher standards of integrity and practice. Thus, a “star” who garners many large grants and turns out dozens of publications is generally viewed as a contributor to “institutional success” even if that individual churns through students and staff through abusive conduct.

Toxic work environments undermine research integrity: consider the graduate student laboring to please a PI who openly values results above all else. That student may feel pressured to engage in detrimental research practices (e.g., dropping a few data points, adjusting parameters, tweaking visual displays, etc.). Too many students find themselves in such situations: a recent survey showed that 23% of responding junior researchers and students felt pressured by supervisors to produce a particular result.³

Currently, institutions and the people within them are not typically rewarded for monitoring how “success metrics” are achieved, and thus not many institutions do. Institutional leaders can stay comfortably unaware (at least officially) of potentially toxic work cultures that exist at their institutions — notwithstanding the many sources of information at their disposal flagging them: climate surveys, disproportionate complaints and grievances, excessive turnover of faculty and staff, declining enrollments, as well as the knowledge of the front-line staff who deal regularly with those affected by the problems.

While a flawed reward structure represents one challenge to institutional accountability, another less obvious challenge to institutional accountability is one of complacency. This includes the polite fiction that RCR training is necessary and sufficient for creating high standards for research integrity.

Challenges with Standard Approaches to RCR

In fact, RCR education is both necessary and *insufficient* for building or sustaining research integrity — and we too regularly do it poorly while knowing that is the case. Institutions must deliver and document that training has occurred across large numbers of people, resulting in widely used materials that provide information and measure completion through multiple choice online programs.⁴

Despite the complex, nuanced nature of research, too much standard RCR training is regularly presented in ways that are tedious, time-consuming, and without faculty participation. It is presented at times that might not match needs and with content often misaligned with current career stages or specific local issues and challenges. Thus, a researcher starting at a new institution may be required to complete standardized training in areas that are utterly irrelevant to them (i.e., a human subjects researcher must complete training on chemical safety or a lab worker who deals only with non-biological samples may be required to complete human subjects training). Participants focus on getting the required training out of the way so that they can get on with the “real work.” We know that this type of RCR can be ineffective and can even build cynicism.⁵

At the same time, we know that researchers’ interpersonal conduct is crucial in the work environment, and that often dictates the norms and behaviors that create (or undermine) cultures of research integrity within an institution. As Gunsalus and Robinson point out,⁶ researchers tend to receive plenty of compliance-oriented information (e.g., formal definitions of misconduct and plagiarism, information about the Belmont report, etc.), when “what they really need is information about how to take action and to make decisions in tricky circumstances. And how to approach a senior faculty member or colleague over concerns about data in a constructive, non-threatening manner.”⁷

One meta-analysis of 26 ethics program evaluations showed that the effects of ethics instruction were “modest,” and they found that training was more likely to be successful when going beyond standard ethics training modules.⁸ In part, this is due to ethical quandaries occurring in interpersonal contexts rather than in a vacuum. For example, the same poll showing that large numbers of junior researchers felt pressured to produce particular results also showed that 13% would not feel comfortable approaching their supervisor to report they could not reproduce results.⁹ How often does standard RCR training provide guidance on how to proceed in such situations? Topics that have interpersonal components — how to give (and receive) appropriate authorship credit, how to resolve disputes professionally, and how to choose the right mentors/colleagues that support long-term professional goals — are not typically addressed,¹⁰ but are needed. Such topics require effective interactions among research group members, and resolving them successfully and in ways that buttress research integrity can turn on the interpersonal skills — as well as the knowledge — of the people involved.

Beyond individual and interpersonal dynamics, systemic issues and institutional frameworks also play a critical role in shaping research environments. For example, institutions may have policies in place that require standard training, regardless of the relevance of such training for a particular person or role, or reward systems that reinforce detrimental research practices. Rules and regulations, while intended to standardize and enhance the research process, can be written or implemented in ways that are perceived as cumbersome or counterproductive, leading to a tendency to circumvent them to achieve goals. This underscores the need for thoughtful and well-designed policies that align with the practical realities of research work that are monitored to verify they are operating as intended.

Challenges with Interlocking Roles and Responsibilities

Institutional accountability is a part of every member’s daily behavior and conduct: all organizational members bear responsibility for contributing to a positive work environment — and to know that they do so. Too much standard RCR focuses only on individual acts without addressing environmental effects and the influence individual conduct has on groups, and vice versa.¹¹ People learn from each other and model their behavior on those around them. The dynamic interplay between individual characteristics and external pressures means that each research group (lab, clinic, division, work group, etc.) forms a unique ecosystem where interpersonal relationships mediate the impact of institutional demands and systemic challenges. In other words, a cohesive and supportive team, composed of members with complementary strengths and a shared commitment to collaborative problem-solving, is likely to better withstand the stresses imposed by the pervasive “publish or perish”

culture of academia. In contrast, a group characterized by discordant personalities and mistrust may find these pressures exacerbated, leading to a more hostile and less productive work environment.

Notably, bad behavior can propagate from the bottom up as well as the top down. Take two real cases from our experience of a graduate student who refused to acknowledge any woman beyond his own advisor, or a senior faculty member who denigrates questions at seminars by some, yet rewards similar questions with positive attention from those seen as in his favor. Such conduct can poison a working atmosphere, and the response to that behavior by leaders contributes to the work environment. If leaders are slow to respond (or do not respond at all) to such conduct, this defines the norms in the unit — and sets an example for rising as well as established scholars. More broadly, is the institution tracking metrics of junior scholars' progress and success (retention, time taken for degree completion, diversity of faculty and student body)? These and other institutional data often signal when climate issues are present or developing. Are institutional leaders held accountable for aligning with their own mission statements? Who holds institutional leaders accountable?

Leaders — formal and informal — must clearly set the standards for institutional members and actively participate in cultivating cultures of integrity and accountability through modeling, programming, and monitoring. Members must know about these standards — and see them living around them — and embrace them in their everyday work lives.

How to Enhance Research Integrity Accountability

A range of approaches can enhance research integrity. We argue that key elements include providing meaningful, useful professional development at every career level, creating and socializing processes that foster psychological safety, and proactively taking the “institutional temperature” with climate and interpersonal assessments.

1. *Provide professional development resources at every level.* All members of an institution can benefit from high-quality, practical professional development programs that cover self-management and interpersonal skills — and these programs are likely to be particularly effective if they are tailored to people's specific career stage and provide useful information relevant to their daily lives and needs. Reconceptualizing professional development programs to focus on identified needs of participants that encompass research integrity and interpersonal skills in the workplace (e.g., communication, conflict resolution and negotiation skills for problem-solving, and giving and receiving effective feedback) can be a way that institutions hold themselves accountable for best practices in research, and more broadly, at work.

For example, in a pilot study of approximately 200 researchers receiving funding from the Howard Hughes Medical Institute, participants completed a professional development program framed around growing personal leadership skills, recognizing that today's complex problems require effective collaboration. Designed to support better science through practical tools for teamwork, the program is rooted in personal values, and skills to deal with colleagues directly, constructively, fairly, and inclusively. This Labs that Work for Everyone (LTW) program centers on a feature film, *A Tale of Two Labs*, about a troubled interdisciplinary collaboration, and is accompanied by individual reflection and practice activities, supplemental expert videos, and scenario-based lab discussions.

In qualitative interviews, participants reported that participating in LTW led to important and instrumental discussions that helped

lab members feel closer to one another and work more harmoniously together.¹² Exploring individual and group “core values and goals” in lab-based discussions was perceived as particularly valuable, as were opportunities to develop specific skills for managing complicated interpersonal interactions. Lab leaders found it helpful to have a program that broached topics that are typically difficult to discuss, such as identity-based dignitary attacks (microaggressions), mismatches in mentoring expectations and styles, problem-solving in collaborations, and taking accountability for mistakes. Qualitative interviews also revealed that in general, lab leaders felt vulnerable and insufficiently supported in topics raised such as mental health stresses and suicidal ideation.

This illuminates that while lab members need relevant, meaningful education that contextualizes their interpersonal and research conduct, *leaders* — from principal investigators through top leadership — also need career-specific, relevant professional development support for the myriad responsibilities that get added as one progresses. Organizational leaders and members can benefit from professional development programs that raise topics that can otherwise be awkward to work into busy work lives, yet when addressed, can help build stronger understanding and healthier working relationships. Professional development programs like LTW can facilitate effective and proactive problem solving at work by normalizing difficult discussion topics and building skills and trust among group members.

Graduate school and traineeships do not prepare faculty for hiring, supervising, and giving feedback to group members. Disciplinary training does not prepare faculty to assume responsibility for committees or task forces, much less academic department leadership. Real-world, oft-unaddressed topics that can undermine the integrity of environments include: dealing with complaints — including about research environments — and other conflicts; giving and receiving feedback; setting norms and expectations; and the special challenges of leading in the academic environment. Regularly, in NCPRE's Principled Academic Leadership programs (PAL), department heads and even deans and vice provosts identify bullying as an issue in their organizations and seek effective tools for managing such problems. Participants reported that participation in the PAL program helped to equip them with a useful vocabulary and approaches for bullying behavior and facilitated discussion of such issues and solutions in a productive way.¹³

Normalizing realistic, relevant professional development that provides an array of concepts and tools for addressing issues that arise regularly should not be an add-on to joining or working in a group setting. Ideally, foundational programs should be incorporated into paid service expectations and not presented as an additional or optional duty. Even more ideally, individuals would be provided a menu of *choices* about programs so that the relevance to an individual's perceived needs and work could be maximized.

2. *Create transparent institutional processes to foster psychological safety—and socialize them.* Leaders can encourage ethical conduct by having clear processes in place for addressing ethical issues. For institutions to hold themselves accountable, they need multiple ways to learn of problems, and one important way to do that is by providing multiple legitimate entry points for raising concerns and getting advice, filing complaints/grievances, and creating a transparent, well-socialized process for following through on those reports. Anonymized cases and examples shared regularly can provide signals about where to report,¹⁴ what happens when there is a report, and signal that the institution cares about its processes and enforces them regularly.¹⁵ Even more transparently, reports of misconduct processes could be made

public at the conclusion of processes to increase public trust and accountability.¹⁶

For example, if a graduate student feels their lab leader has unreasonable expectations or is verbally abusive, what realistic recourse is available? Are there clear, accessible procedures for that student to follow to get support and navigate the difficult interpersonal interactions, and/or the relationship itself? Does the student have access to mentors beyond the lab leader, through a mentoring committee or other accessible network the institution provides? Creating guidelines for institutional members,¹⁷ publicizing a process to follow, and, just as importantly, assuring that there is effective, coordinated action for received reports, can improve institutional accountability for research integrity.¹⁸

But how many researchers would know what to do? How supportive are institutions when it comes to identifying entry points for reporting an issue, and how transparent are they about these processes? If the gatekeeper for a complaint or grievance process is the person about whom one is concerned, and if the institution does not have multiple entry points for complaints/grievances, the person with the grievance can be stuck.¹⁹ In the graduate student example, if well-meaning institutional officers, understanding that disputes are usually best resolved directly among those involved, refer the student back to the advisor, the student may have no realistic recourse.²⁰

In such circumstances, students realistically choose to take the abuse, or more sadly, to leave grad school and often research entirely. If, instead, there are multiple functional and effective sources for advice, guidance, support, and information readily available, the situation is more likely to be assessed and understood in a way that can lead to changes in the environment or in student's understanding of expectations at the graduate level. Consider another (real) example: Research group X believed that research group Y manipulated images prior to publication. Group X appealed to the editor of the journal who referred them to the Research Integrity Officer (RIO) at the home institution of the corresponding author, indicating that the journal had no capacity for investigation. It emerged that the corresponding author of the paper in question was the institutional RIO. Who would hold group Y accountable in this instance? How confidently would members of group X approach higher institutional leaders? How likely would such leaders be to respond effectively?

Similarly, for instances of sexual harassment, breaches in protocol, etc., if the gatekeeper *is* the problem, how does one get help? In this second example, a researcher from group X talked to one of the authors of this paper, who happened to be sitting next to the publisher of that journal at a meeting. The author told the publisher the story, and after a neutral investigation, manipulated images were confirmed and the questioned paper was retracted. The resolution in this example required serendipity; rather than similar situations being left to chance, institutions can increase their accountability by offering multiple effective entry points for grievances — and track responses.

3. Measure and assess the institutional temperature and compare to others. One way to gauge the institutional temperature is by conducting high-quality, large-scale survey research. To our knowledge, there are only two instruments designed specifically for academic research settings: the validated Survey of Organizational Research Climate (SORC),²¹ and the preliminarily validated Climate of Accountability, Respect, and Ethics Survey (CARES).²²

Gathering baseline data on interpersonal and research climates is useful to organizations for several reasons. Research climate perceptions measured by the SORC are associated with research

practices,²³ and thus assessment scores on the SORC provide an idea of how an organization is functioning. Scores on the CARES have been associated with job satisfaction, lower intentions to quit one's organization, and higher levels of life satisfaction,²⁴ thus scores of the CARES can help inform organizational leaders about the likely rates of turnover in their workforce. If employees are happy and satisfied with their jobs, they are more likely to remain and contribute positively to the work culture.

The CARES measurement tool allows institutions to understand the degree to which its members feel psychologically safe.²⁵ If psychological safety is lacking based on survey data, institutions can (and should) take action to enhance psychological safety. Similarly, if certain areas of an institution are thriving, the CARES scores can help indicate to institutional leaders the factors that contribute to an exceptionally well-functioning unit. For example, if one unit at an institution scores especially high on "conflict resolution," a subdomain of the CARES, indicating that leaders within that department take effective roles in helping to resolve conflict, it may be helpful to probe what they are doing to see how other units might benefit from their interpersonal (and perhaps institutional) wisdom.

Assessing related interpersonal skills by administering the Behavioral, Emotional, and Social Skills Inventory (BESSI)²⁶ is another way that institutions can learn about the skills that their members have (or lack), and intervene by offering professional development that specifically addresses areas of improvement (e.g., communication skills, perspective-taking skills, and emotional resilience skills, which have been shown to be lacking in research-intensive environments).²⁷ Institutional leaders can also gain insight into the specific skills that are most strongly related to psychological safety and research integrity environments in their organizations.

Knowing the nature of the strengths and weaknesses within an organization provides a useful place to start for institutional accountability, and knowing where an institution stands relative to other, similar institutions provides a practical understanding of how much change an institution can reasonably strive to achieve. Benchmarking interpersonal and research climates — and making these assessments routine and standard — is one step towards institutional accountability by providing gold standard metrics that reflect how work is done.

At NCPRE, we have built a custom web-based infrastructure, the Results Analysis Engine (RAE), that deploys validated surveys, stores data, and allows for comparisons to other institutions that comprise a benchmarking database with (to date) data from over 30 distinct institutions.²⁸ The RAE displays data at three levels of granularity: the institution level, the "parent unit" level (commonly called the "college level" or "school" level), and the unit level (commonly called the department, unit, or lab level), allowing leaders to identify how the institution is performing overall, which colleges/schools are performing well (or not), and which departments are excelling (or struggling). Each level may be compared with external disciplinary peers or to other units or groups of units within the same institution. Thus, the scores of a chemistry department can be compared to other chemistry departments in the benchmark database for disciplinary norms and can also be compared to any other department or group of departments within the same institution (for example, within its college and campuswide) for insights into local norms. This is especially useful when a leader is trying to understand if the working climate in a unit is problematic, or if the unit is reflecting the norms of the discipline. For example, if most departments of chemistry across many institutions

tend to score lower than other units on “conflict resolution,” (i.e., they tend to score lower in an absolute sense, score lower relative to other departments on campus, but score similarly to peer departments of chemistry), a leader may be differently concerned than if their chemistry department scored low in an absolute sense *and* scored substantially lower than other departments of chemistry at peer institutions.

Using the RAE, the University of Illinois Urbana-Champaign administered the SORC in 2014, 2018, and 2024. This has two benefits for institutional accountability: it allows leadership to observe change (or stability) over time, and it contributes to our growing benchmarking database of research integrity data. Institutional leaders can see if their organization is remaining stable or improving in an absolute sense (indicated by similar scores on SORC domains across time within an organization) as well as in a relative sense (indicated by rank order stability in SORC scores across time between organizations).

In addition to Illinois, other institutions have employed our RAE to see how their climate has changed over time. For example, The University of North Carolina at Charlotte used the RAE to fulfill its aims for an institutional transformation grant over the last four years by administering the SORC and observing changes in climate as a function of their proposed intervention. Making surveys of this sort standard and accessible is one concrete way that institutions can hold themselves accountable. Even when leaders (and faculty/staff/students) change over time, the overall functioning of the organization can be gleaned if leaders are routinely assessing the climate.

Taking institutional temperatures should be standard practice. NCPRE has the *infrastructure available* to support this for research institutions.²⁹ We hope that institutions will eventually opt to advertise the results of their climate assessments and promote the idea that fostering good work conditions is critical for institutional success. To date, over 30 institutions have used the SORC to take their institutional temperature regarding research integrity climate, and we hope that this figure grows to the hundreds in coming years. The research integrity climate data is aggregated, anonymized, and available for comparison when institutions receive their own data in the RAE.

Notably, there is resistance to this idea; measuring climates triggers ever-present reputational fear factors. We regularly get asked by prospective users, “What if our results show we have a bad working environment?” We respond, “What if you have bad working environments and don’t know about them?” Further, these assessments are not required — so why would reactive leaders engage in them? Even for proactive leaders, there can be a lack of clear standards and guidelines for what to do with the information about research and interpersonal climates. In part, we address this challenge below with additional recommendations for targeted professional development programs beyond foundational programs generally offered.

Recommendations for Using Professional Development Programs to Bolster Institutional Accountability

Research will always be difficult. It requires intelligence, drive, and personality traits that are not always amenable to creating a constructive work environment. It involves repeated failure and finding ways to manage that without personalizing it to being a failure as a professional — or as a person. What is the path forward to addressing the challenges faced in environments that are especially challenging to navigate?

Personality traits and the scientific enterprise are relatively stable;³⁰ behavior and skills are not.³¹ Interpersonal skills can develop and change; they can be targeted, cultivated, rewarded, and outwardly valued by leaders in an institution. Focusing on building these skills — known as social, emotional, and behavioral skills, or SEB skills, and measured by the BESSI — can set people up for success and help mitigate the issues that arise when personalities clash. Furthermore, the climates or environments that people work in are informed (and, in part, crafted) by the skills that people use.

The goal for institutions should be to discourage poor practices (i.e., bad behavior) while taking preventive measures that encourage best practices. Equipping people with relevant, practical, directly useful soft skills and fostering psychological safety related to their current work provides the means to deal with everyday interactions as well as truly awful situations. Institutions can accomplish this — at least in part — by selecting and implementing professional development programs that are best suited for the needs of an organization, and measuring/monitoring associated soft skills and interpersonal climates regularly. In supplemental materials (see Appendix A), we provide an outline of several specific programs that can help institutions hold themselves accountable in concrete, practical ways that can be tracked, measured, and monitored over time.

Professional development is not the “be all end all” of academic and institutional success, yet it is certainly preferable to inaction or inattention. To be effective, it must be of high quality: relevant, engaging, useful, and timely for the needs of the audience. Setting the tone from the top — valuing professional development and encouraging people to gain the skills to solve real, everyday problems that arise from interpersonal disputes through professional development programs — is one concrete path forward. Our evidence suggests that thoughtful, intentional professional development helps people navigate everyday interactions as well as difficult or crisis situations — and stay true to themselves and institutional missions in the process.

Conclusion

To create and sustain institutional integrity, leaders and members across an organization must understand their roles, and that how they work affects their own integrity as well as that of their colleagues. Leaders must believe it is their responsibility to create and sustain positive work environments across institutions. They must know about and use mechanisms for monitoring the myriad micro-climates and work environments across the institution — and commit to intervening when there are problems. Cultivating a culture of accountability through attending to the environments in which people work and equipping them with the tools to interact effectively within those environments will lead to better research, empowering people to do their best possible work at their highest levels of creativity and productivity.

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Appendix A

Professional Development Programs Available at NCPRE

Programs that boost accountability. To help create cultures of integrity (and to minimize the toxicity that is likely to be forged in a hyper-competitive environment), we present a "program of programs" tailored to different audiences at different career stages with the primary aim of fostering better research practices. Research shows that new habits take up to three months to form³² which is why our professional development programs build in practice time by design.

Principled Academic Leadership Program (PAL). Our Principled Academic Leadership umbrella (PAL) offers cohort-based programs that cater to different career stages. We tailor core content and examples, case studies, and activities specifically for the daily work lives of audience members, using information from interviews, focus groups, and literature reviews. Participants attend sessions over the course of an academic year, which allows time for reflection, independent engagement, and, perhaps most importantly, practice. Participants are able to use the practical tools provided to them in their communications with colleagues, in negotiations, and in everyday life as they work through the material.

Nanyang Technological University Academy (NTU). Started in 2013, our longest standing program is a year-long leadership academy we developed for and with the Nanyang Technological University (NTU). This is a cohort-based program, with an initial two-day off-site meeting in the fall, four or five additional half-day meetings, and a two-day off-site meeting in the spring. Participants report that the practical tools in the program were instrumental in helping them develop as leaders.³³ Notably, participants in NTU have become leaders at the Nanyang Technological University and elsewhere and have been recognized as leaders in Singapore's national honors. Over time, NTU expanded the program, asking us to add a day focused on mentoring. Participants cited topics such as "boundaries" and "active listening" as particularly useful. Additionally, participants report being very likely to use "personal scripts" in their work life, which refers to a prepared and practiced wording for anticipated situations that may be interpersonally challenging.

Transforming Challenged Units conference (TCU). TCU is an annual conference designed to assist struggling academic units — ones experiencing stress or dysfunction from a wide range of causes — return to vibrancy and alignment with their academic and research missions. TCU is a one and a half-day working event, and members of units work systematically through a set of steps with experts to develop actionable plans to restore unit vibrancy. To date, TCU has

had over 200 participants across 40 units from 36 institutions between 2016 and 2024, and participants report that the program's coverage on "not rewarding bad behaviors" and "problem-solving" are particularly instrumental.

Labs that Work for Everyone (LTW). As mentioned, our LTW program centers around a feature film and is rooted in the idea that people engage with professional development programs more when the programs are relatable, interesting, and immediately useful. LTW presents scenarios that resonate

and lead to compelling discussions with peers and supervisors, and the content becomes more memorable as it is a part of a shared, collective experience. LTW has been piloted in biomedical science labs and is particularly amenable to lab-based sciences for people in various career stages (graduate students, post docs, and PIs). Other topics envisioned for the LTW program include "negotiation skills for problem solving at work," "giving and receiving feedback," and "starting a lab."