From Practice to Policy:

Promise and Constraints of Contemplative Ethics Interventions in Science

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Abstract

This invited commentary responds to Berryman et al. (2025), "The mindful scientist: How meditation could support ethical scientific practice," and offers an implementation-focused perspective on the role of meditation-based ethical development interventions (MBEDs) within contemporary academic systems. We begin by acknowledging the importance of the ethical challenges facing academia and the potential utility of the authors' proposal to apply contemplative practices to support ethical scientific conduct. We then raise two concerns. First, we argue that individual-level interventions such as MBEDs may have limited capacity to address unethical behavior that is shaped by structural factors, including academic incentive systems. Second, we highlight a motivational trade-off that MBEDs are likely to encounter. On the one hand, voluntary participation risks self-selection and ceiling effects. On the other hand, mandatory implementation may lead to low engagement, as observed in other universal mindfulness-based interventions. For similar reasons, we question the reliance on meditation practice as the primary mechanism of ethical cultivation, given evidence that sustained benefits require ongoing engagement that may be unrealistic in universal or mandatory contexts. We conclude by proposing an integrated model for ethics in academia, in which MBEDs are embedded within ethical institutional initiatives—such as holistic career assessment, open science practices, and incentives for replication and methodological rigor—and supplemented with non-meditative contemplative methods. We argue that such integration is necessary for contemplative ethics initiatives to achieve durable organizational- and community-level impact.

Keywords: scientific misconduct; contemplative ethics; mindfulness-based interventions; meditation

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Amid frequent reports of paper retractions, data fabrication, replication failures, and the misuse of generative artificial intelligence, the scientific community is increasingly called upon to reflect on how it can sustain the ethical standards that underpin public trust in science. Responding to this challenge, Berryman et al. (2025) offer a thoughtful and comprehensive contribution proposing the development and evaluation of Mindfulness-Based Ethical Development Interventions (MBEDs) to foster ethical behavior within the scientific community. Their paper shifts the conversation about ethical behavior from a focus on rules and compliance toward the internal drivers of conduct—individual virtues that align with ethical scientific principles. The authors proposed that meditation-based practices cultivate "mindful scientists" who are intrinsically motivated to act ethically and who integrate ethical principles throughout all aspects of their work, from maintaining scientific rigor in scientific investigation and publication to treating research participants and colleagues with integrity.

One of the paper's strengths is its comprehensive conceptual synthesis linking personal mindful virtues with scientific ethical principles. We also appreciate the authors' explicit acknowledgment that, in the absence of explicit ethical content, meditation-based interventions (MBIs) do not always improve ethical behavior (Berry et al., 2020). We thus commend the proposal to develop a secular MBI that incorporates an explicit ethical component in the service of enhancing ethical scientific practices.

While MBEDs have the potential to strengthen values that support ethical scientific practice, developing and evaluating such programs requires substantial investments of time, expertise, and institutional support. Such investments are most defensible when MBEDs are

designed to produce organization- and population-level improvements in ethical conduct within academia. We begin this commentary by raising two primary concerns regarding the proposed intervention's ability to produce such effects. First, as currently conceptualized, MBEDs operate at the individual level and may have limited capacity to produce large-scale change while the systemic conditions that facilitate and in some cases privilege unethical behavior remain intact. Second, like other organizational interventions, MBEDs may encounter substantial implementation challenges when deployed at scale. Next, we consider the frequently overlooked relational dimension of unethical scientific behavior—poor mentorship and lack of collegiality—that MBEDs may be well positioned to address. Finally, we outline strategies for strengthening the impact of MBEDs at the organizational level and across academia more broadly.

Limits of Individual-Level Interventions

Unethical behavior in science is caused by a range of interconnected factors. Individual ethical deficits are indeed one of them. Individual-level interventions may therefore help by strengthening internal virtues and self-regulatory capacities that support ethical decision-making. However to a large extent, scientific misconduct is shaped by the incentive structures that reward output over rigor, and research cultures and norms that weaken oversight, accountability, and ethical boundaries (Davis et al., 2007; Franzen et al., 2007; Gross, 2016; Lacetera & Zirulia, 2011). The 'publish or perish' culture is considered one of the core structural drivers of scientific misconduct (Edwards & Roy, 2017; Holtfreter et al., 2020). It refers to academic evaluation systems in which career advancement, funding, and job security are tightly linked to increasingly frequent publication, often prioritizing the quantity and prestige of outputs over research quality or integrity. These pressures are further amplified by intensifying competition and growing job insecurity in academia (Holtfreter et al., 2020). As Franzen et al. (2007) observes, "what started

as a competitive intellectual enterprise has turned into an intense competition for scarce resources" (p. 4). When coupled with weak incentives for replication and low probability of fraud detection, such conditions create an environment that can facilitate unethical behavior (Holtfreter et al., 2020; Lacetera & Zirulia, 2011). When the difference between a high-profile publication that could advance one's career or secure a faculty position and a middling one (or no publication at all), is presenting an unplanned test as planned or including an extra covariate that produces more desirable results, systemic incentives ally against ethical practices.

Structural factors enabling scientific misconduct also include power asymmetries within academia. Individual-level interventions such as MBEDs implicitly assume a degree of autonomy in research decision making that many scientists do not, in practice, possess. Ethical agency is unevenly distributed across career stage, institutional position, and other structural and individual factors, shaping who has the capacity to uphold ethical standards. For example, an international PhD student whose ability to remain in the country depends on their advisor has only bad choices when their advisor pressures them to engage in research misconduct to obtain desired results. This scenario is not hypothetical. A survey of PhD candidates in Norway found that 1.5% reported having experienced pressure to engage in severe scientific misconduct—falsification, fabrication, or plagiarism—between 2010 and 2020, and 2.1% reported pressure to present results in a misleading manner (Hofmann et al., 2023). Similarly, a tenure-track professor may feel pressure to not only publish, but publish in a tier of journal that will earn tenure. We do not know the results of studies before we conduct them, however, and although there have been improvements in recent years, it remains evident that while rigorous journals consider study design and methodology during review, positive findings remain an important determinant in publication (Button et al., 2016).

In sum, it is difficult to imagine how individual-level interventions such as MBEDs will be able to change behavior at scale while the systems that allow or reward unethical conduct remain unchanged. Notably, the limitations of individual-level interventions are not unique to MBEDs and have been well documented across psychology, public health, and organizational research (Kazdin & Rabbitt, 2013; Waddell et al., 2023). Despite this longstanding awareness, the issue persists (Alegría et al., 2023), and we therefore believe it is important to revisit it here. We recognize that Berryman et al. (2025) position MBEDs as complementary to, rather than a replacement for, other efforts to promote ethical behavior in science. However, in our view situating MBEDs within the existing academic system deserves more thorough consideration. Sustainable ethical behavior change requires interventions at multiple levels, including institutional incentives, governance structures, and research culture (Davis et al., 2007; Franzen et al., 2007; Gross, 2016; Lacetera & Zirulia, 2011).

Implementation and the Problem of Mandates

Our second concern relates to the implementation of MBEDs. As Berryman et al. (2025) note, for such interventions to be effective, participants must be motivated to learn and internalize mindful ethical virtues, which typically necessitates voluntary participation (Chiodelli et al., 2022). However, keeping MBEDs voluntary can introduce a ceiling effect: individuals who opt in may already be ethically motivated, whereas those who might benefit most may be less likely to participate, thereby limiting organization-wide impact. Conversely, when participation is mandated, such trainings may elicit resistance, psychological reactance, or performative compliance rather than substantive attitude and behavior change. This pattern is not unique to MBEDs but applies more broadly to behavior change interventions, particularly those targeting deeply held values and attitudes. For example, this has been documented extensively in

the diversity training literature, where mandatory programs—particularly those perceived as coercive, punitive, or disconnected from everyday organizational practices—may provoke individual and institutional resistance, whereas offering them on the voluntary basis is often insufficient to produce meaningful organization-level change (Dobbin & Kalev, 2018; Leslie et al., 2025; Noon & Ogbonna, 2021).

Further, while Berryman et al. (2025) acknowledge that personal virtues can be cultivated through multiple pathways, MBEDs as currently conceptualized rely primarily on meditation practice as a mechanism of change. Evidence from MBI research suggests that sustained effects depend on continued meditation practice (Parsons et al., 2017). Yet meditation is an effortful activity that requires a substantial and ongoing motivational commitment. In the absence of a salient personal concern or intrinsic interest, many participants are unlikely to engage at a level sufficient to produce meaningful effects. Recent large-scale attempts to implement MBIs universally in schools are a relevant example. These trials have yielded null or limited effects, largely attributed to the low levels of engagement—most youth report little or no meditation practice over the course of the intervention (Galla, 2024). These trials have also raised questions about whether large-scale implementation of MBIs that require skillful trainers is feasible, and whether poor implementation is a cause of low engagement. There is evidence from MBI studies in schools of poor quality mindfulness instruction once scaled up (Miller et al., 2023). Concerns about facilitator training extend beyond school-based programs to MBIs more broadly, where meditation instructors may be permitted to lead programs with as little as one year of personal practice following an 8-week Mindfulness-Based Stress Reduction course (Van Gordon et al., 2014). Similarly low engagement has been observed in universally available meditation apps, where users are not incentivized by participation in research studies. In these settings, about half

of the users did not complete any meditations and the median user completed only a single meditation session after installing the app (Jiwani et al., 2023). Thus, to our knowledge, there are no recent or historical examples of universal MBIs that yield high engagement, and few that maintain implementation fidelity (but see Hirshberg et al., 2025), when rolled out at scale.

Relational Aspects of Scientific Misconduct

Scientific misconduct has many elements. The most egregious commonly cited behaviors are falsification, fabrication, and plagiarism (Lafollette, 2000; Steneck, 2006), as well as unethical treatment of human research participants (Snyderman & Holmes, 2000) and animals (Garrett & Garrett, 2012). In recent years, increasing attention has also been paid to less visible questionable research practices, such as selectively reporting results that support a preferred claim (cherry-picking), hypothesizing after results are known (HARKing), inappropriate application of methodological practices, and insufficient reporting of methods (Fiedler & Schwarz, 2016). Unethical interpersonal workplace behaviors have been less frequently addressed in the research misconduct literature, even though they can erode relationships within research teams and similarly undermine scientific progress (Anderson et al., 2007; Kuhar & Cross, 2013). We suggest that the principle of ethical treatment of others articulated by Berryman et al. (2025) could be expanded beyond the treatment of research participants to include how scientists treat one another. MBEDs could explicitly frame good mentorship and collegiality as core components of ethical scientific behavior. We believe that MBEDs are likely to be effective for these interpersonal elements. Research evidence suggests that MBIs foster positive social interactions and relationships (Fredrickson et al., 2019; Jones et al., 2019) and, as Berryman et al. (2025) discussed in their paper, increase prosocial behavior under some circumstances. One plausible mechanism linking mindfulness to improved social functioning

involves more skillful attention deployment during interpersonal encounters. Specifically, mindfulness may enhance sensitivity and attunement to others' emotional states (Adair et al., 2018; Quaglia et al., 2019), facilitate more accurate interpretation of verbal and nonverbal cues (Bavelas et al., 2000; Burgoon et al., 2000), and support greater cognitive and emotional control in social situations. Embedding these attentional and regulatory skills within an explicitly ethical framework, as proposed in MBEDs, may further amplify their interpersonal impact by strengthening scientists' commitment to acting in ways that benefit their colleagues and collaborators and foster a more supportive culture in academic organizations. In practice, MBEDs could be incorporated into leadership and mentorship training through activities such as perspective-taking exercises, structured feedback and communication practices, and guided reflection on power, responsibility, and fairness in supervisory relationships. These activities could promote more supportive mentorship, improving trainee development and well-being, enhancing team functioning, and ultimately strengthening the quality and integrity of scientific work.

Overcoming Barriers to Population-Level Effects

Designing effective behavior change interventions is a complex task, and it is easy to criticize efforts that attempt to address problems as multifaceted as unethical scientific conduct. Thus, it seems only fair that we offer constructive suggestions. In this section, we outline strategies for overcoming the limited capacity of individual-level interventions to generate durable ethical change when the structural conditions that enable unethical behavior remain intact. The case of diversity trainings shows that interventions aiming for attitude and behavior change produce sustained effects chiefly when they are part of a larger organizational effort to change existing norms and practices (Bezrukova et al., 2024). We believe that the same is true

for MBEDs. Berryman et al. (2025) provide a sound theoretical rationale for MBEDs helping scientists internalize values aligned with ethical scientific conduct principles, which is a necessary first step to promote ethical behavior. However, for these personal commitments to endure and translate to behavior, they need to be part of a larger structural reform in academic systems aiming to create conditions that support ethical behavior at multiple levels. Accordingly, MBEDs should be designed not as standalone interventions but as components integrated into existing initiatives and academic governance structures, which we review below.

At the organizational level, counteracting "publish or perish" drivers of unethical behavior requires a shift toward more holistic evaluation practices. Research institutions could place greater emphasis on the quality and impact of research, responsible mentoring, and collegiality in hiring, promotion, tenure, and annual review processes. This change would signal that ethical conduct is institutionally valued, not merely aspirational. Some universities have already begun to implement these approaches. For example, the University of California system formally discourages evaluation based on journal prestige, impact factors, or sheer publication counts, instead emphasizing intellectual contribution and originality, teaching quality and mentorship, public engagement and service, and open science practices (University of California, Office of the President, 2015). In addition, a growing number of universities and publishers have declared their commitment to the San Francisco Declaration on Research Assessment (DORA; San Francisco Declaration on Research Assessment, 2012) and the Leiden Manifesto for research metrics (Hicks et al., 2015) which advocate for assessment based on scientific merit rather than publisher-driven metrics in hiring, promotion, and funding decisions. In this context, MBEDs could be integrated into existing faculty development, mentoring, and leadership training programs. Values articulated in institutional policies do not automatically translate into

behavior. Even when organizations formally endorse holistic evaluation principles, hiring and promotion committees may continue to rely on habitual, output-driven heuristics. MBEDs could support norm change by introducing structured moments of reflection within evaluation processes—for example, prompting committee members to reflect on whether their decisions align with stated institutional values or reproduce the status quo. Positioned this way, MBEDs would reinforce the values underlying revised assessment criteria and facilitate the transition to more holistic evaluation practices.

At the larger scientific community level, efforts are being made to encourage ethical practices through open science practices, such as preregistration and open sharing of all study materials, analysis code, and data. Adoption of open science practices varies substantially across disciplines, with psychology often cited as being further along than many other social and biomedical sciences in implementing preregistration and data-sharing norms (Ferguson et al., 2023; Munafò et al., 2017; Nosek et al., 2015). Here, MBEDs could be embedded within existing open science training infrastructures, such as preregistration or data-sharing workshops, inviting researchers to reflect on how transparency, accountability, and intellectual humility align with their own scientific values. For example, this could take the form of brief guided reflections and values statements that connect preregistration of hypotheses to intellectual humility and accountability. Workshops could also incorporate case-based ethical decision points, enabling researchers to evaluate realistic scenarios and explicitly link their choices to principles such as transparency, rigor, and social responsibility. This reflective component could support the internalization of these practices as ethical commitments rather than mere compliance with journal requirements.

Another path for the promotion of ethical practices is incentivizing replication as it increases the probability of fraud detection and thus discourages individuals from committing fraud in the first place (Lacetera & Zirulia, 2011). A number of journals, including several flagship psychology journals such as *Psychological Science*, *Journal of Personality and Social Psychology*, *Journal of Experimental Social Psychology*, and *Nature Human Behaviour* now publish and explicitly encourage replication studies. However, replication work remains weakly incentivized across scientific fields, receiving limited funding and recognition in publication, hiring, and promotion decisions despite its central role in ensuring research credibility (Ioannidis, 2014; Munafò et al., 2017; Nosek et al., 2012). MBEDs could complement replication initiatives by explicitly framing replication and verification as forms of ethical scientific contribution, rather than secondary or derivative labor.

Addressing inappropriate methodological practices and insufficient reporting requires a shift in priorities from "good findings" to good science. Achieving this shift necessitates more rigorous and comprehensive methodological and statistical training. Instructors could incorporate elements of MBEDs into their teaching by pairing technical instruction with reflection on epistemic humility, uncertainty, and the ethical implications of analytic choices, thereby encouraging trainees to prioritize methodological rigor and transparency. The peer review process also needs reform to prioritize rigor over positive findings. One approach is "results-free" or "results-masked" peer review, in which manuscripts are evaluated in two stages and reviewers assess the introduction and methods before accessing the results and discussion. *BMC Psychology* piloted this model between 2016 and 2020 (Button et al., 2016) but later transitioned to an open peer review system in which anonymous reviews are published alongside the manuscript. In addition, several industrial-organizational psychology journals launched a similar

trial initiative in 2017 (Wood, 2017), which remains ongoing at the time of writing. Furthermore, journals can rapidly shape research practices by setting explicit methodological requirements. For example, *Mindfulness* requires authors to report McDonald's omega for study measures, nudging the field toward more rigorous standards of scale internal consistency evaluation (Dunn et al., 2014). In traditional peer review models, MBED-informed prompts could be embedded directly into reviewer and editor evaluation forms, inviting reviewers to reflect on questions such as whether their concerns are driven by methodological limitations or by the direction of the findings, and whether their evaluation would differ if the results were null or contrary to expectations.

Integrating MBEDs with existing initiatives necessarily entails scaling them beyond standalone, opt-in programs. This leads to our second concern that MBEDs will face a motivational trade-off. If participation is voluntary, those who opt in are likely to already exhibit relatively high ethical commitment, leading to a ceiling effect. Conversely, if MBEDs are incorporated into existing initiatives and mandatory ethics training, they are likely to encounter engagement issues similar to those observed in universal school-based MBIs due to the high motivational commitment required to engage in a regular meditation practice (Galla, 2024) and possibly degraded implementation when brought to scale (Miller et al., 2023). It is unrealistic to expect all or even most MBEDs participants to sustain such levels of motivation. Accordingly, echoing Galla's (2024) recommendations for universal school-based MBIs, we propose redesigning MBEDs so that meditation is an optional component, alongside a broader set of practices that cultivate the virtues that support ethical scientific conduct. The field may benefit from widening the scope beyond meditation to include other contemplative practices such as reflection, values clarification, and contemplation of one's mindsets and beliefs. This proposal is

in line with the field of contemplative pedagogy which has put a wider range of practices including reflection and storytelling under the contemplative practices umbrella (Zajonc, 2013). Expanding the scope from meditation to a broader range of contemplative practices may help make the development of a contemplative worldview more accessible to a wider public. Historical accounts of contemplative traditions also suggest that meditation has rarely served as the exclusive or even primary pathway to cultivating a contemplative worldview for most adherents. When teaching to lay practitioners (i.e., non-monastics), the *Pali* canon has many examples of the historic Buddha emphasizing ethical behavior and generosity, rather than emphasizing meditation instructions (Bodhi, 2005). Similarly, MBEDs could foster a contemplative worldview through structured ethical reflection, guided discussion of real-world scientific dilemmas, and didactic instruction in values such as epistemic humility, responsibility, and care for consequences. Additional approaches may include reflective writing and norm-setting practices that encourage deliberate consideration of how scientific decisions affect society as well as researchers' immediate professional communities, including collaborators and trainees. Particular attention could be given to mentoring training programs, as mentors play a central role in shaping disciplinary norms by modeling ethical behavior and providing direct instruction to trainees. Such methods emphasize discernment, moral reasoning, and attentional orientation toward values, without requiring sustained meditation practice.

Conclusion

Berryman and colleagues (2025) offer an original and thought-provoking proposal for leveraging contemplative practices to promote ethical behavior in science. We agree that there continues to be a need to improve scientific rigor and ethical practice. Where we extend Berryman et al.'s suggestions is in highlighting the role of academic systems in shaping

individual scientists' unethical behavior, as well as the engagement challenges the proposed intervention is likely to face when implemented at scale. In so doing, we do not seek to absolve researchers who engage in unethical conduct of personal responsibility. While acknowledging unethical behaviors to be unethical, we think it is necessary to contextualize those behaviors, particularly when systemic incentive structures arguably encourage them. We therefore encourage the contemplative science community to attend to systemic and motivational factors when designing initiatives to reduce scientific misconduct, particularly if such efforts are to achieve organizational- and academia-level impact. We recognize that several of our suggestions require large-scale engagement from universities and the research community as a whole; consequently, they will not be easy to implement and contemplative science alone cannot bring about these changes. Nonetheless, contemplative scientists are embedded within the broader scientific ecosystem. Beyond contributing our field's distinctive expertise, we also share responsibility for shaping, advocating for, and institutionalizing norms of ethical research conduct within our institutions and disciplines.

References

Adair, K. C., Fredrickson, B. L., Castro-Schilo, L., Kim, S., & Sidberry, S. (2018). Present with you: Does cultivated mindfulness predict greater social connection through gains in decentering and reductions in negative emotions? *Mindfulness*, *9*(3), 737–749. https://doi.org/10.1007/s12671-017-0811-1

Alegría, M., Alvarez, K., Cheng, M., & Falgas-Bague, I. (2023). Recent advances on social determinants of mental health: Looking fast forward. *The American Journal of Psychiatry*, *180*(7), 473–482. https://doi.org/10.1176/appi.ajp.20230371

Anderson, M. S., Ronning, E. A., De Vries, R., & Martinson, B. C. (2007). The perverse effects of competition on scientists' work and relationships. *Science and Engineering Ethics*, *13*(4), 437–461. https://doi.org/10.1007/s11948-007-9042-5

Bavelas, J. B., Coates, L., & Johnson, T. (2000). Listeners as co-narrators. *Journal of Personality and Social Psychology*, *79*(6), 941–952. https://doi.org/10.1037/0022-3514.79.6.941

Berry, D. R., Hoerr, J. P., Cesko, S., Alayoubi, A., Carpio, K., Zirzow, H., Walters, W., Scram, G., Rodriguez, K., & Beaver, V. (2020). Does mindfulness training without explicit ethics-based instruction promote prosocial behaviors? A meta-analysis. *Personality and Social Psychology Bulletin*, *46*(8), 1247–1269. https://doi.org/10.1177/0146167219900418

Berryman, K., Lin, Y., Lazar, S. W., Parra, D. C., & Bernstein, A. (2025). The mindful scientist: How meditation could support ethical scientific practice. *Mindfulness*, *16*(10), 2900–2915. https://doi.org/10.1007/s12671-025-02646-0

Bezrukova, K., Spell, C., & Perry, J. (2024). Organizational diversity training programs. *Current Opinion in Psychology*, *60*, 101907. https://doi.org/10.1016/j.copsyc.2024.101907

Bodhi, B. (2005). *In the Buddha's words: An anthology of discourses from the Pali Canon*. Wisdom Publications.

Burgoon, J. K., Berger, C. R., & Waldron, V. R. (2000). Mindfulness and interpersonal communication. *Journal of Social Issues*, *56*(1), 105–127. https://doi.org/10.1111/0022-4537.00154

Button, K. S., Bal, L., Clark, A., & Shipley, T. (2016). Preventing the ends from justifying the means: Withholding results to address publication bias in peer-review. *BMC Psychology*, *4*(1), 59. https://doi.org/10.1186/s40359-016-0167-7

Chiodelli, R., Mello, L. T. N. de, Jesus, S. N. de, Beneton, E. R., Russel, T., & Andretta, I. (2022). Mindfulness-based interventions in undergraduate students: A systematic review. *Journal of American College Health*, *70*(3), 791–800. https://doi.org/10.1080/07448481.2020.1767109

Davis, M. S., Riske-Morris, M., & Diaz, S. R. (2007). Causal factors implicated in research misconduct: Evidence from ORI case files. *Science and Engineering Ethics*, *13*(4), 395–414. https://doi.org/10.1007/s11948-007-9045-2

Dobbin, F., & Kalev, A. (2018). Why doesn't diversity training work? The challenge for industry and academia. *Anthropology Now*, *10*(2), 48–55. https://doi.org/10.1080/19428200.2018.1493182

Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, *105*(3), 399–412. https://doi.org/10.1111/bjop.12046

Edwards, M. A., & Roy, S. (2017). Academic research in the 21st century: Maintaining scientific integrity in a climate of perverse incentives and hypercompetition. *Environmental Engineering Science*, *34*(1), 51–61. https://doi.org/10.1089/ees.2016.0223

Ferguson, J., Littman, R., Christensen, G., Paluck, E. L., Swanson, N., Wang, Z., Miguel, E., Birke, D., & Pezzuto, J.-H. (2023). Survey of open science practices and attitudes in the social sciences. *Nature Communications*, *14*(1), 5401. https://doi.org/10.1038/s41467-023-41111-1

Fiedler, K., & Schwarz, N. (2016). Questionable research practices revisited. *Social Psychological and Personality Science*, *7*(1), 45–52. https://doi.org/10.1177/1948550615612150

Franzen, M., Rödder, S., & Weingart, P. (2007). Fraud: Causes and culprits as perceived by science and the media. *The EMBO Reports*, *8*(1), 3–7. https://doi.org/10.1038/sj.embor.7400884

Fredrickson, B. L., Arizmendi, C., Van Cappellen, P., Firestine, A. M., Brantley, M. M., Kim, S. L., Brantley, J., & Salzberg, S. (2019). Do contemplative moments matter? Effects of informal meditation on emotions and perceived social integration. *Mindfulness*, *10*(9), 1915–1925. https://doi.org/10.1007/s12671-019-01154-2

Galla, B. (2024). How motivation restricts the scalability of universal school-based mindfulness interventions for adolescents. *Child Development Perspectives*, *18*(3), 129–136. https://doi.org/10.1111/cdep.12508

Garrett, J. R., & Garrett, J. R. (Eds.). (2012). The ethics of animal research: An overview of the debate. In *The Ethics of Animal Research: Exploring the Controversy* (p. 0). The MIT Press. https://doi.org/10.7551/mitpress/9780262017060.003.0001

Gross, C. (2016). Scientific misconduct. *Annual Review of Psychology*, *67*(Volume 67, 2016), 693–711. https://doi.org/10.1146/annurev-psych-122414-033437

Hicks, D., Wouters, P., Waltman, L., de Rijcke, S., & Rafols, I. (2015). Bibliometrics: The Leiden Manifesto for research metrics. *Nature*, *520*(7548), 429–431. https://doi.org/10.1038/520429a

Hirshberg, M. J., Davidson, R. J., Velarde Arrisueño, L. B., Olvera Puentes, J. M., Bardalez, X. M., Gonzalez, B. S., Goldberg, S. B., Chernicoff, L. I., & HCP-Well Study Group. (2025). Digital well-being training with health care professionals: A randomized clinical trial. *JAMA Internal Medicine*, *185*(10), 1248–1256. https://doi.org/10.1001/jamainternmed.2025.3888

Hofmann, B., Thoresen, M., & Holm, S. (2023). Research integrity attitudes and behaviors are difficult to alter: Results from a ten year follow-up study in Norway. *Journal of Empirical Research on Human Research Ethics*, *18*(1–2), 50–57. https://doi.org/10.1177/15562646221150032

Holtfreter, K., Reisig, M. D., Pratt, T. C., & Mays, R. D. (2020). The perceived causes of research misconduct among faculty members in the natural, social, and applied sciences. *Studies in Higher Education*, *45*(11), 2162–2174. https://doi.org/10.1080/03075079.2019.1593352

Ioannidis, J. P. A. (2014). How to make more published research true. *PLOS Medicine*, *11*(10), e1001747. https://doi.org/10.1371/journal.pmed.1001747

Jiwani, Z., Tatar, R., Dahl, C. J., Wilson-Mendenhall, C. D., Hirshberg, M. J., Davidson, R. J., & Goldberg, S. B. (2023). Examining equity in access and utilization of a freely available

meditation app. *Npj Mental Health Research*, *2*(1), 5. https://doi.org/10.1038/s44184-023-00025-y

Jones, S. M., Bodie, G. D., & Hughes, S. D. (2019). The impact of mindfulness on empathy, active listening, and perceived provisions of emotional support. *Communication Research*, *46*(6), 838–865. https://doi.org/10.1177/0093650215626983

Kazdin, A. E., & Rabbitt, S. M. (2013). Novel models for delivering mental health services and reducing the burdens of mental illness. *Clinical Psychological Science*, *1*(2), 170–191. https://doi.org/10.1177/2167702612463566

Kuhar, M. J., & Cross, D. (2013). Collegial ethics: Supporting our colleagues. *Science and Engineering Ethics*, *19*(3), 677–684. https://doi.org/10.1007/s11948-012-9364-9

Lacetera, N., & Zirulia, L. (2011). The economics of scientific misconduct. *The Journal of Law, Economics, and Organization*, *27*(3), 568–603. https://doi.org/10.1093/jleo/ewp031

Lafollette, M. C. (2000). The evolution of the "scientific misconduct" issue: An historical overview. *Proceedings of the Society for Experimental Biology and Medicine*, *224*(4), 211–215. https://doi.org/10.1177/153537020022400405

Leslie, L. M., Kim, Y. L., & Ye, E. R. (2025). Diversity initiatives: Intended and unintended effects. *Current Opinion in Psychology*, *61*, 101942. https://doi.org/10.1016/j.copsyc.2024.101942

Miller, E. J., Crane, C., Medlicott, E., Robson, J., & Taylor, L. (2023). Non-positive experiences encountered by pupils during participation in a mindfulness-informed school-based intervention. *School Mental Health*, *15*(3), 851–872. https://doi.org/10.1007/s12310-023-09591-0

Munafò, M. R., Nosek, B. A., Bishop, D. V. M., Button, K. S., Chambers, C. D., Percie du Sert, N., Simonsohn, U., Wagenmakers, E.-J., Ware, J. J., & Ioannidis, J. P. A. (2017). A manifesto for reproducible science. *Nature Human Behaviour*, *1*(1), 0021. https://doi.org/10.1038/s41562-016-0021

Noon, M., & Ogbonna, E. (2021). Controlling management to deliver diversity and inclusion: Prospects and limits. *Human Resource Management Journal*, *31*(3), 619–638. https://doi.org/10.1111/1748-8583.12332

Nosek, B. A., Alter, G., Banks, G. C., Borsboom, D., Bowman, S. D., Breckler, S. J., Buck, S., Chambers, C. D., Chin, G., Christensen, G., Contestabile, M., Dafoe, A., Eich, E., Freese, J., Glennerster, R., Goroff, D., Green, D. P., Hesse, B., Humphreys, M., … Yarkoni, T. (2015). Promoting an open research culture. *Science*, *348*(6242), 1422–1425. https://doi.org/10.1126/science.aab2374

Nosek, B. A., Spies, J. R., & Motyl, M. (2012). Scientific Utopia: II. Restructuring Incentives and Practices to Promote Truth Over Publishability. *Perspectives on Psychological Science*, *7*(6), 615–631. https://doi.org/10.1177/1745691612459058

Parsons, C. E., Crane, C., Parsons, L. J., Fjorback, L. O., & Kuyken, W. (2017). Home practice in Mindfulness-Based Cognitive Therapy and Mindfulness-Based Stress Reduction: A systematic review and meta-analysis of participants' mindfulness practice and its association with outcomes. *Behaviour Research and Therapy*, *95*, 29–41. https://doi.org/10.1016/j.brat.2017.05.004

Quaglia, J. T., Zeidan, F., Grossenbacher, P. G., Freeman, S. P., Braun, S. E., Martelli, A., Goodman, R. J., & Brown, K. W. (2019). Brief mindfulness training enhances cognitive

control in socioemotional contexts: Behavioral and neural evidence. *PLOS ONE*, *14*(7), e0219862. https://doi.org/10.1371/journal.pone.0219862

San Francisco Declaration on Research Assessment. (2012). *Declaration on Research Assessment (DORA)*. https://sfdora.org/

Snyderman, R., & Holmes, E. W. (2000). Oversight mechanisms for clinical research. *Science*, *287*(5453), 595–597. https://doi.org/10.1126/science.287.5453.595

Steneck, N. H. (2006). Fostering integrity in research: Definitions, current knowledge, and future directions. *Science and Engineering Ethics*, *12*(1), 53–74. https://doi.org/10.1007/PL00022268

University of California, Office of the President. (2015, June 29). *APM - 210-1-d, Review and Appraisal Committees | UCOP*. https://www.ucop.edu/academic-personnel-programs/academic-personnel-policy/policy-issuances-and-guidelines/revised-apm210-1-d.html

Van Gordon, W., Shonin, E., Sumich, A., Sundin, E. C., & Griffiths, M. D. (2014). Meditation Awareness Training (MAT) for psychological well-being in a sub-clinical sample of university students: A controlled pilot study. *Mindfulness*, *5*(4), 381–391. https://doi.org/10.1007/s12671-012-0191-5

Waddell, A., Kunstler, B., Lennox, A., Pattuwage, L., Grundy, E. A., Tsering, D., Olivier, P., & Bragge, P. (2023). How effective are interventions in optimizing workplace mental health and well-being? A scoping review of reviews and evidence map. *Scandinavian Journal of Work, Environment & Health*, *49*(4), 235–248. https://doi.org/10.5271/sjweh.4087

Wood, J. (2017, October 24). Results masked review: Peer review without publication bias. *Elsevier Connect*. https://www.elsevier.com/connect/results-masked-review-peer-review-without-publication-bias

Zajonc, A. (2013). Contemplative pedagogy: A quiet revolution in higher education. *New Directions for Teaching and Learning*, *2013*(134), 83–94. https://doi.org/10.1002/tl.20057