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Organizations in science and medicine must hold each other accountable for discriminatory practices

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DECLARATION OF INTERESTS

The authors declare no competing interests.

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Abstract

Many organizations persist in working with others that engage in known, remediable structural discrimination. We name this practice interorganizational structural discrimination (ISD) and argue it is a pivotal contributor to inequities in science and medicine. We urge organizations to leverage their relationships and demand progress from collaborators.

Introduction

The medical and scientific workforce is stressed due to multiple interrelated issues now converging to create unprecedented pressures: the COVID-19 pandemic, the movement for racial justice, the opioid epidemic, and the increased prevalence of mental health conditions. This stress exacerbates the existing need to address diversity, equity, and inclusion (DEI) issues among organizations.

Although women compose a large proportion of physicians and scientists, they are underrepresented in leadership positions, and their presence alone has been insufficient to drive change. One study assessed 134 United States (US) medical schools and found women faculty have not made significant progress in leadership positions (associate professor, professor, or department chair) over 35 years (Richter et al., 2020). These numbers are more worrisome when considering intersectional identities, such as race and ethnicity. For example, Black or Latina women physicians comprise 0%–1% of full professors in most medical specialties (Silver, 2020). The meager proportions may be considered an “inexorable zero,” which US courts have used to infer discrimination in the presence of inexplicably low numbers (i.e., zero or near-zero numbers) (Huang, 2004).

We need to consider new approaches. A preponderance of the evidence demonstrates that past interventions have not been sufficient to achieve gender and racial equity, and this is in part due to processes and policies that are embedded in organizations that fail to equitably support people who work in science, technology, engineering, mathematics, and medicine (STEMM). Although there are numerous definitions of structural racism and structural discrimination (SD), in general they involve macro-level conditions, such as policies and practices that produce systemic results that limit opportunities, resources, and power for groups of people based on identity characteristics (e.g., race, gender, sexual orientation, and disability), social class or socioeconomic status, religion, national origin, or other factors. Policies, practices, and culture within organizations (intraorganizational) and among connected organizations (interorganizational) contribute to SD (Powell, 2007). Recognizing and addressing both intra- and interorganizational factors that perpetuate SD are paramount to solving DEI concerns.

To date, STEMM organizations have generally operated by assessing themselves and attempting to fix their own DEI issues. We endorse this self-regulation approach but recognize it has not led to sufficient change. Since the advancement of science occurs through the collaborative work of many organizations, there is an opportunity to move beyond institutional self-regulation and focus on interorganizational relationships (IORs).

IORs have positive features, such as pooling resources and leveraging power. However, they can also cause harm—often due to unethical practices or opportunism (Oliveira and Lumineau, 2019). To avoid harm, organizations have developed mitigation strategies, such as how academic research enterprises have policies in place to avoid industry influence from pharmaceutical and other for-profit companies. However, some unhealthy relationships are easier to address than others. As such, we narrow our focus to a subset we call “interorganizational structural discrimination” (ISD). This is a novel concept we define as possessing three features: (1) two or more organizations intentionally work together, (2) one or more of them has an obvious issue consistent with structural discrimination (SD), and (3) that issue is known to be remediable.

We believe ISD has played a significant but largely unrecognized role in obstructing the advancement of individuals from underrepresented groups, including, but not limited to, women and people from marginalized racial and ethnic groups. When groups of talented and qualified individuals lack opportunities to participate in the advancement of science and medicine, this causes harm to physicians, researchers, patients, and society. Given that multiple organizations (e.g., academic institutions, professional societies, and journal editorial boards) interact to impact the career success of those in STEMM, ISD needs to be identified and addressed to support the entire biomedical workforce.

Examples of ISD

To illustrate ISD, we offer two examples of this type of relationship relevant to the STEMM disciplines—the relationship between journals and professional societies and the collaborations among professional societies to produce clinical practice guidelines (CPGs). In our examples, we encourage readers to focus on two components of the ISD criteria: they are intentional relationships, and the SD (i.e., the conditions that limit opportunities, resources, and power to individuals and groups of people based on identity or other characteristics) is remediable. Many relationships are involuntary and exist due to such factors as geographic proximity—such as a hospital’s legal obligation to comply with a regulatory agency—and are not part of ISD as we define it. In the examples we highlight, the SD issues have been successfully addressed by other organizations and are therefore remediable. In an ISD relationship, it is the intentional support one organization provides to another that allows it to insist its partner address a remediable SD issue (Figure 1). If this does not happen, then it has the power to terminate the relationship (albeit there may be some contractual and legal issues to address).

Journals and professional societies

One of the best-documented ISD issues is the affiliation of professional societies with journals that have not ensured gender equity among their editors. For example, in medicine, excluding women as journal editors—including at the top leadership positions—has been documented for over two decades and involves dozens of published studies and reports (Silver, 2020). In every field of science and medicine, including those with low proportions of women, this is a simple problem to fix because the number of qualified women far exceeds the number of editorial positions needed to achieve gender equity. Many journals have achieved gender equity among editors, thus making it impossible for any journal to justify continued inequities.

Professional societies support ISD if they are engaged in collaborative relationships with journals that have not sufficiently addressed this long-standing and remediable structural gender bias problem. Any journal that has failed to self-regulate should be put on notice that they need to change now and be offered a short but reasonable timeline to achieve editorial gender equity. If the journal still fails to equitably include women editors, then the society should consider terminating its relationship.

Professional societies are likely to lose credibility with those they represent (e.g., physicians and scientists), as well as opportunities to collaborate with other organizations, if this ISD remains unresolved. One study examined whether organizations within the Council of Faculty and Academic Societies (CFAS) of the Association of American Medical Colleges (AAMC) are affiliated with journals that equitably include women editors. The study found the proportion of women among journal editors ranged from 0% to 53% among affiliated journals (Ellinas et al., 2021). Notably, the AAMC is a strong proponent of workforce gender equity and demonstrates equitable inclusion of women leaders within its organization and affiliated journal. Yet, the issue of ISD is germane as the CFAS is composed of professional societies advising the AAMC. Given that some of the societies affiliate with journals that do not exercise the gender equity the AAMC advocates for, it is reasonable to question the value of the advice they give to AAMC.

Journal editors' lack of racial and ethnic diversity is a well-known but less-documented problem than women's underrepresentation. One study focused on the race and ethnicity of editorial board members and editors in psychiatry and neuroscience journals and found significant underrepresentation of people identifying with marginalized groups. The inequities were more apparent when additional oppressed and marginalized identities, including gender identity and sexual orientation, were considered (Shim et al., 2021).

Further investigation of race and ethnicity among journal editors is needed; however, it is not necessary to wait for published studies to recognize this is an urgent issue to address. All professional societies should examine their IORs with affiliated journals and consider implementing accountability standards for achieving racial and ethnic equity on their editorial boards. Examining other identity characteristics is also essential and, toward this end, increasingly organizations are inviting people to voluntarily self-report relevant aspects such as disability, sexual orientation, gender identity, etc.

Professional societies and CPGs

Another example of ISD comes from developing CPGs, among the most critical documents in medicine. CPGs are evidence-based documents developed by a group of experts that guide patient care and influence how financial resources are distributed (e.g., whether third party payers cover care). They are often issued by professional societies and are highly cited. A report summarizing the current literature found underrepresentation of women overall (including scientists who are not physicians), women physicians specifically, and individuals from marginalized racial and ethnic groups (Verduzco-Gutierrez et al., 2022).

In CPG development, ISD becomes a factor when collaborating societies, foundations, companies, or governmental agencies participate despite remediable gender or racial and ethnic inequities among the authors. One CPG that had a marked lack of diversity among authors and contributors acknowledged the support of 10 “participating” and “contributing” societies and stated this does not “necessarily imply endorsement” (Kreiner et al., 2020) (Figure 2). This statement alone cannot absolve collaborating societies from their role in perpetuating ISD, because the diversity of authors on CPGs is a known SD problem. Collaborating organizations should actively inquire about, and if appropriate, participate in, a process that ensures author diversity. If a collaborating organization affirms their professional support (i.e., documented on the CPG), they should address an SD issue at any point that it becomes apparent. If concerns about author diversity (or any other SD issue) are not addressed, then the society should voluntarily end the relationship.

We recognize this commentary will bring about needed discourse on the topic, and though the examples we present are straightforward, the issue of ISD is complex. For example, institutional review boards (IRBs) are essential bodies that regulate biomedical research involving human subjects and belong to a milieu of groups that need to work together to achieve diverse investigative research goals. Whether some of the relationships between IRBs and other groups can be categorized as ISD should be explored.

The potential for harm

Discrimination is acknowledged to cause harm, and therefore is antithetical to codes of ethical conduct in science and medicine. Although damage can occur in various ways, in the ISD examples provided, we describe some of the actual and potential harm to physicians, researchers, patients, society, and collaborating organizations. The root causes of SD are multifactorial, and a detailed discussion is beyond the scope of this commentary. However, they may be influenced by conscious (explicit) and unconscious (implicit) bias, as well as processes, procedures, and cultural norms that should be changed. From a legal perspective, organizations may be responsible for redressing harm that results from structural racism or other discrimination, even if it is beyond their institution’s control and regardless of the intent to harm (Powell, 2007). Notably, in many cases harm is predictable or foreseeable (Powell, 2007).

Harm to physicians, scientists, patients, and society

In academia, faculty from underrepresented groups face barriers to promotion if they cannot participate in scholarly activities (e.g., CPG author) or achieve national leadership roles (e.g., journal editor). Regardless of the work setting, people from underrepresented groups that face SD miss out on incalculable career benefits.

Diverse leaders and teams may contribute unique insights that advance science and improve clinical care. For instance, women physicians and scientists have been champions of women's health. Conversely, a lack of diversity may have a negative impact. For example, the aforementioned CPG analysis demonstrated gaps in guideline content focused on pregnancy, menopause, healthcare disparities, and social determinants of health (Verduzco-Gutierrez et al., 2022). Another study examined race-related content in high-impact journals and found “striking evidence of the failure of leading medical journals to publish extant scientific research on racism and health” (Krieger et al., 2021). Whether more diverse authorship or editorial teams would substantially change the content of CPGs and journals is unknown. However, when a group is overly homogeneous, some of the brightest scientific minds are missing, which impacts science and society.

Harm to collaborating organizations

IORs provide advantages to organizations such as pooling resources and leveraging power, and we acknowledge that addressing ISD may result in the loss of invested time, money, and other resources. However, IORs pose considerable risk if one organization does something improper, and a single issue identified as problematic often leads to an in-depth investigation to uncover serious problems. For example, fraud is often detected when someone recognizes a single accounting anomaly that leads to further analysis. A similar situation can occur with DEI concerns, whereby one issue triggers deeper investigation and a cascade of events ensues. The deeper investigation often poses the greatest risk to the organization, and it may result in reputational, financial, or other harm.

As an example, the Journal of the American Medical Association (JAMA) produced a podcast featuring one of its editors that resulted in widespread condemnation of race-related remarks (Mandavilli, 2021). The podcast was retracted and a public apology posted; nevertheless, it triggered a deeper investigation of DEI issues at JAMA and its affiliated journals and professional society (American Medical Association [AMA]). The editor-in-chief of JAMA resigned, and the fallout continues (Mandavilli, 2021). However, there are promising signs of progress, including the appointment of Kirsten Bibbens-Domingo, MD, PhD, as editor-in-chief of JAMA—the first Black woman to serve in this role.

This example underscores the significant reputational and financial risk for a collaborating organization (i.e., the AMA) when engaged in an IOR. The aggregate harms caused by SD should compel organizations to examine their collaborative relationships and actively reduce the risk of harm to their own organization as well as workers, trainees, patients, and society.

The path forward: Dismantling interorganizational structural discrimination

Organizations need to focus on self-regulation and dismantle their SD while simultaneously avoiding ISD relationships. Admittedly, addressing ISD will cause disruptions in the status quo—which is the purpose. Although we advocate for identifying issues small and large, we recommend initially attending to the most important ones that may affect many people and/or cause harm to researchers, physicians, trainees, patients, or others. Increasingly, DEI expertise is a core competency for organizational leaders, and part of this involves structural competence, which is an evolving concept that emphasizes forces that influence outcomes above the level of individuals' interactions with each other (Metzl and Hansen, 2014). Structural competence considers how social, economic, political, and other factors influence grant funding long before a scientist submits a proposal to reviewers or shape health outcomes before a doctor and patient are in a room together. Developing structural competence aligns with a review of the literature on IORs, which concluded that leaders should be competent in general and have a high degree of integrity to avoid problems (Oliveira and Lumineau, 2019).

A report by Awad and colleagues focuses on macrointerventions to address macroaggressions—defined as obvious, overt, system-wide racial offenses and abusive acts manifested in organizational systems and structures—and structural and institutional racism (Awad et al., 2021). The authors provide allies and targets of macroaggressions with a framework and strategies to effect system-level change. The framework is composed of six phases: (1) criticize the environment, (2) strategize a course of action, (3) mobilize resources, (4) exercise a course of action, (5) energize and galvanize, and (6) analyze and recalibrate. Macrointerventions in each of the phases include observing and documenting the macroaggression, gathering data about the macroaggression, making a formal report of the macroaggression, building allies and coalitions to develop and provide feedback on strategies, pivoting with reporting to different leaders if initial reports are futile, consulting affected groups and tracking changes over time, and continuously assessing the pros and cons of implementing macrointerventions.

Awad et al. (2021) designed the macrointerventions at the level of the individual actor (ally or target), and to address ISD, we are now proposing movement toward macrointerventions conducted by collaborating organizations. Their six-phase pathway is a good process and aligns with other types of procedures used for hospital safety, etc. To help people engage in this process, we encourage readers to share this commentary with organizational leaders.

When an ISD concern is raised with an organization, the response will be telling. The best response is to admit there is an issue, develop a plan that is likely to work, implement it, and measure the outcomes of the intervention. All medical specialties struggle with their history of racism and gender bias, and neurology is no exception. In 2020, senior leaders of *Neurology* published an editorial titled “*Neurology's* commitment to address gender bias in neurology journals” that included specific metrics and a timeline to correct the problem (Merino et al., 2020). The Snow Medical Research Foundation recognized its finances were being allocated in an inequitable way by Melbourne University (Krier, 2022). The foundation met with senior leaders at the university and then issued a press release stating

that Melbourne's explanation had been "unsatisfactory." The foundation stated it would not consider fellowship applications until the university "demonstrated better outcomes." In short, the foundation identified a remediable SD issue and dismantled an ISD relationship.

ISD plays an important and not previously described role in supporting inequities in science and medicine. When an organization engages in a collaboration with a partner organization with obvious remediable inequities, it plays a supportive role in perpetuating the problem and takes on shared responsibility for its remediation. Now is the time for organizations to develop structural competence (Metzl and Hansen, 2014) and recognize their role in dismantling SD extends beyond their institution to relationships they have with other organizations. IORs should align around shared values of DEI consistent with ethical conduct in science and medicine.

The study of IORs has evolved, but there are significant gaps in the literature around the positive and negative consequences of organizational collaborations in science and medicine, particularly as they relate to DEI. This is an important area of future study as these relationships are typically intended to provide organizations with a competitive advantage and have far-reaching ethical, financial, and legal implications. Though future research is needed, we advocate immediate action now to dismantle ISD relationships. If STEM organizations avoid ISD, this may be a "tipping point" to drive long overdue changes needed to support the entire biomedical workforce. Urgent action combined with new strategies is the path forward.

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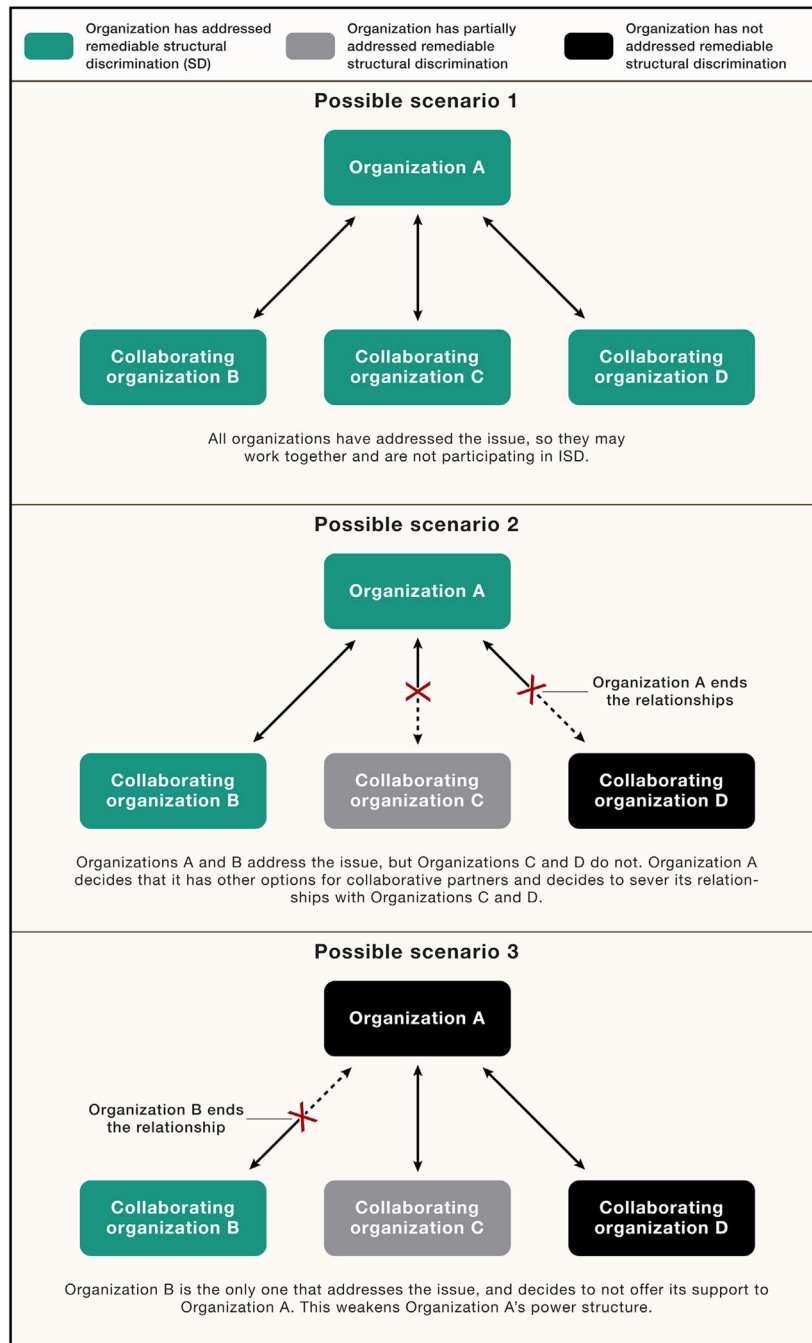


Figure 1. Interorganizational structural discrimination and possible outcomes

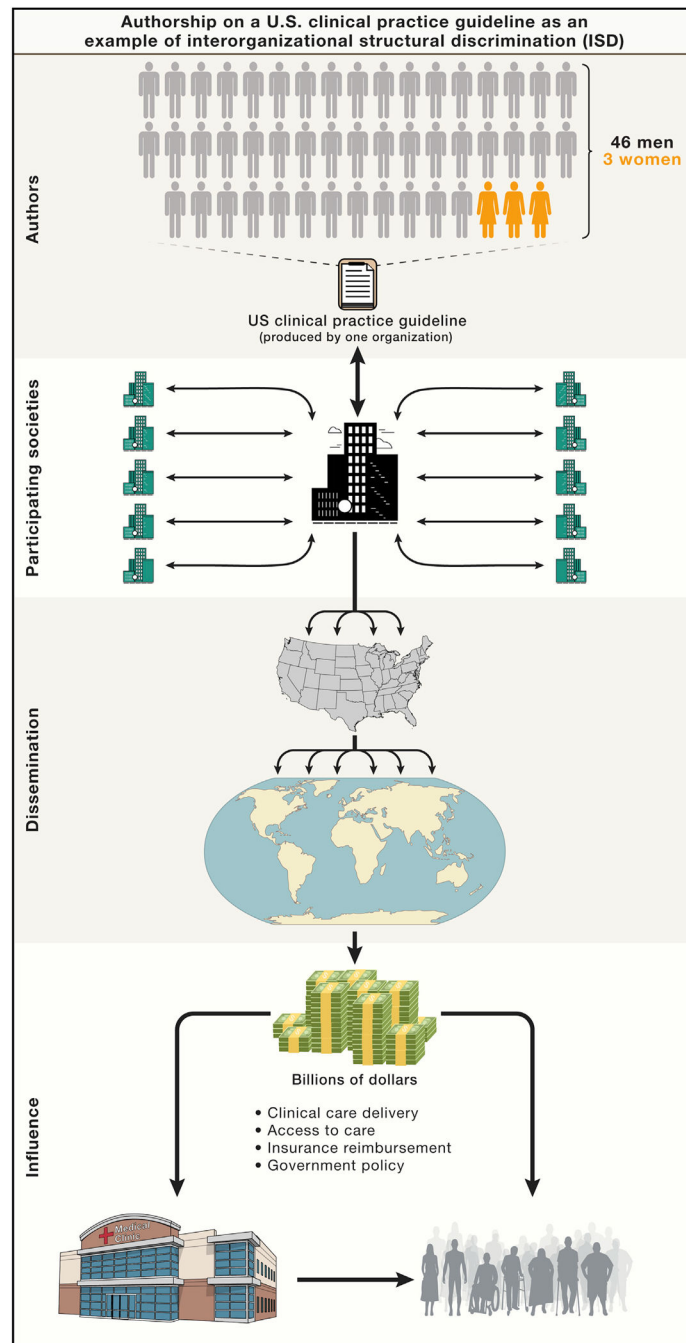


Figure 2. Authorship on clinical practice guidelines as an example of interorganizational structural discrimination

Clinical practice guidelines (CPGs) produced in one country may be widely disseminated throughout the world—distributing or redistributing large sums of money toward or away from various organizations (e.g., hospitals, insurance companies, government agencies, and healthcare businesses) and affecting the health of many people. In this example, the CPG had 49 authors, of which there were 46 men and 3 women (gender was evaluated in a binary manner and is a known limitation of the study) [Kreiner et al., 2020]. Race analysis revealed 36 White/Caucasian (34 men and 2 women), 11 Asian (10 men, 1 woman), and 2

Black/African American (2 men, 0 women) authors. There were no Hispanic/Latino authors identified. The professional society that produced the CPG invited 10 other societies to be participating or contributing societies. The arrows represent interorganizational relationships (IORs), which in this case are the participating societies supporting a known and remediable structural discrimination issue (i.e., author diversity on CPGs).

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