

## Commentary

# Rigorous science demands support of transgender scientists

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<https://doi.org/10.1016/j.cell.2024.02.021>

**To build a just, equitable, and diverse academy, scientists and institutions must address systemic barriers that sex and gender minorities face. This Commentary summarizes (1) critical context informing the contemporary oppression of transgender people, (2) how this shapes extant research on sex and gender, and (3) actions to build an inclusive and rigorous academy for all.**

## Introduction

You are in science, technology, engineering, math, or medicine (STEMM). You and your colleagues have similar interests, training, and expertise. Empiricism and impartiality are central values in your field, which demands precise and rigorous work. However, these principles are too often eschewed when it comes to *you*. Your existence is a challenge to **imprecise and simplistic notions of sex and gender**, igniting rancorous debate on your “scientific” validity in and outside of STEMM. **Up until a few years ago**, you were a niche curiosity of an exclusionary

academy: someone labeled with a “disorder” based on **dubious science**. Now, this **scientific misinformation** is used to support **legislative and political efforts all around the world** to not only **dictate what topics are academically permissible** but also to “eradicate” you from public life.

You are a transgender scientist.

**You repeatedly explain what is happening** and express to your colleagues how basic activities—from using the bathroom and being addressed by your name to traveling for conferences and accessing needed healthcare—are seen as political statements and **sometimes dangerous**.

You tell your colleagues **that supporting trans people (Box 1)** in the face of these **coordinated pseudoscientific movements** will strengthen the scientific community,<sup>1</sup> foster a scientifically informed society, and contribute to bringing inclusion and justice for all people in STEMM. Many, if not most, of your colleagues are surprised by the **violence and threats** motivated by transphobia (Box 1) but are ready to do what is necessary to build an academy for all people. The questions that remain: How did we get here, and what do we do?

We are twenty-four trans (and/or family of trans) individuals with diverse



**Box 1. Trans 101: Common terms and concepts**

In this work, we discuss transgender, nonbinary, and/or gender nonconforming (“trans”) identities using these terms as generally agreed upon in the US, UK, and Europe:

**Cisgender/cis person:** an individual whose gender identity aligns with their sex assigned at birth.

**Cisheteronormativity:** a social belief system that naturalizes and reinforces heterosexuality and cisgender status over alternative sexualities and gender modalities.

**Deadname:** a name that a trans person no longer uses. Deadnames may still be on documentation depending on local laws and an individual’s choice or ability to update their documents. Can also be used as a verb, as in “to deadname someone.”

**DEIJ:** diversity, equity, inclusion, and justice.

**Epistemic injustice:** the idea that one can be discriminated against as a knower or wielder of knowledge based on identity and attendant differences in “ways of knowing.” For example, the notion that trans people are “biased” when considering legislation around access to healthcare and thus shouldn’t have input on how this legislation is drafted and implemented, even if they have the appropriate legal/medical credentials, while the biases inherent to a cisgender perspective on the topic are overlooked.

**Gender:** a multidimensional cluster of norms used to define a particular range of aspects of a person’s identity and role within a society. Common genders include man, woman, and nonbinary person. Often tied to sex and labor roles, defined by cultural consensus, and variable across (sub) cultures and over time. Gender may also be used as a verb, reflecting the conceptualization of gender as a process, with terms such as “gendering” or “engendering” referring to processes that produce or reproduce social conceptualizations of gender.

**Gender-affirming care (GAC):** gender-affirming hormone therapy; gender-affirming surgery; other methods that change one’s physical characteristics; psychological, social, and behavioral support services; and other care from medical providers that supports and affirms an individual’s gender identity. The GAC needs of each trans person are a unique combination of the types of care described here.

**Gender expression:** the behavioral and social performance of gender. As an example, some cultures may define the length of one’s hair or the choice to use makeup as an element of gender expression. Note that gender expression may or may not conform to someone’s gender identity.

**Gender identity:** an individual’s personal sense of “being” a woman, man, and/or other gender(s) or the range of such identities a person comfortably inhabits. A person’s gender identity may or may not align with their assigned sex/gender at birth.

**Gender modality:** [how a person’s gender identity stands in relation to their sex and/or gender assigned at birth](#); the category that includes “trans” and “cis.”

**Intersex person:** an individual born with sex traits such as chromosomes, gonads, or genitals that do not all adhere to a single “male” or “female” category. Intersex people may or may not consider themselves trans. An individual who is not intersex is considered endosex or dyadic.

**Nonbinary:** having a gender identity that is not well-described by normative binary gender, such as identifying with neither binary gender, no gender (agender), or two or more genders. Nonbinary people may or may not identify as transgender.

**Pronouns:** terms used to refer to someone in place of a proper name, such as “she,” “he,” “ze,” or “they.” The pronouns someone uses may depend on context and personal choice and are not equivalent to gender. Many languages gender at least third-person pronouns; some also gender other pronouns or have gendered word declinations with similar functions.

**Sex:** a context-dependent category that summarizes the associated traits in an individual, such as chromosomes, reproductive organs, hormones, anatomy, and others,<sup>2</sup> many of which directly or indirectly reflect adaptations for sexual reproduction. These categories include female, male, and intersex, among others. Sex categories are typically assigned at birth by examination of external genitalia for use in legal and some medical purposes. In many cases, these categories are then conflated with gender identities. Sex can be reassigned for legal and/or medical purposes in various jurisdictions, sometimes contingent on medical procedures and sometimes through self-declaration.

**Social transition:** changing one’s appearance, name, and/or pronouns. This may involve a legal name and/or gender marker change and may occur to different extents in different communities (such as using a different name or set of pronouns in personal vs. professional settings).

**Transgender/trans person:** an individual whose gender identity does not fully align with their sex assigned at birth.

**Transmisogyny:** prejudice against trans feminine individuals resulting from the interaction between transphobia and sexism.<sup>2</sup> Consider also trans-misogynoir, which describes the interaction of transphobia, sexism, and racism directed specifically at Black trans feminine people.

**Transphobia:** discrimination and prejudice against people based on their trans status.

While these terms are useful for discussion, it is important to remember that individuals transgressing gender roles and identities have been known throughout history and language, and the cultural framework of these definitions significantly varies.<sup>3</sup> Examples of gender-diverse (i.e., representing conceptualizations of gender beyond a cisgender binary) peoples include hijra, thirunar/thirunangai/thirunambi, kinnar, khwaja-sira, nupa manba/nupi manbi, jogappa, mangalamukhi, and aravani in South Asia; muxe in southern Mexico; fa’afafine in Samoa and American Samoa; bakla in the Philippines; waria, bissu, calabai, and calalai in Indonesia; Two-Spirit Indigenous peoples of the Americas; femminielli in Naples; and sworn virgins in the Balkan states. We recognize that this list is not exhaustive and that gender-diverse people around the world may not identify with modern, Western conceptions of “transgender” as an identity.

experiences in STEM (Box 2). We know firsthand how hostile narratives and environments operate to exclude trans people from pursuing scientific careers to the detriment of the collective scientific endeavor. Here, we describe how the contemporary marginalization of sex and gender minorities in the academy is intimately linked with the histories of colonialism and oppression of individual au-

tonomy. We present a call to action to address the challenges trans people face, their relationship to other forms of marginalization, and strategies to support our community (Figure 1). We acknowledge that these topics can elicit discomfort and recognize responses to that discomfort will vary. We encourage readers to work through that discomfort. It is only then that we can take the neces-

sary steps together to liberate not just trans people, but all people, and build a truly diverse, equitable, inclusive, and just academy.

### Historical contexts inform current challenges

Trans liberation [interacts with](#) and builds upon the accomplishments of the women’s liberation, Black liberation, antiracist,

## Box 2. Author positionality

The authors of this commentary represent a variety of different perspectives and life experiences relevant to our contributions. Authors were solicited to voluntarily submit individual identities they hold with the understanding that these would be presented in aggregate. Personal and professional identities were equally solicited.

Most authors self-identified as trans or transgender, transsexual, genderqueer, or gender\*ck, with one author identifying as cisgender. The author list includes men and transmasculine persons, women and transfeminine persons, non-binary persons, and the parent of a transgender child. Authors self-identified as European, Latina, Mexican, Asian American, South Asian, and white. Authors were or had been citizens or residents of Australia, Canada, Germany, Ireland, India, Mexico, the Netherlands, Sweden, the United Kingdom, and the United States. Authors included able-bodied, disabled, and chronically ill persons. A portion of authors identified as autistic or neurodivergent. Authors self-identified as queer, gay, lesbian, and straight. Other identities volunteered include being middle-class, a migrant, and a person displaced by anti-trans legislation.

The authors represent a variety of career stages, including both early career and established positions. Roles included graduate students, postdoctoral scholars, early career faculty, a learning developer, an outreach officer, an associate professor, research staff, and a department head.

anticolonial, class liberation, and disability justice movements. All assert that a person's identity should not determine what opportunities they have access to and that it is each person's right to control what happens to their body (i.e., bodily autonomy). Today's movements for trans liberation continue this progress by upholding the simple fact that one's assigned sex does not determine who one is. While intersectional movements such as [Street Transvestite Action Revolutionaries](#), anticolonial movements in the South Asian subcontinent, and third-wave feminists made significant headway toward trans liberation, the trans community still faces considerable systemic oppression in the academy and in society. Anti-trans activists continue to use [pseudoscientific claims](#) to justify discrimination, oppression, and [elimination](#) of people outside of essentialized "biological" categories. In order to effectively dismantle the systems that oppress trans and other marginalized people in STEM, we must first understand their origins and how they continue to impact trans people in academia.

Gender-diverse people have existed across cultures, each with their own rich history ([Box 1](#)).<sup>4</sup> European colonists expressed disbelief at the widespread public existence of people outside their rigid binary categories of "male/female," demonstrating how the colonial mindset denied data on gender variance.<sup>5</sup> They then imposed these essentialist beliefs upon their colonies, both culturally and legally. Across North America in the 16th century, European colonists consistently

targeted Two-Spirit individuals.<sup>6</sup> In 19th century India, the British pursued a legal agenda that reinforced caste patriarchy by categorizing trans persons along with nomadic indigenous groups as "[criminal tribes](#)"—considered criminal suspects solely by virtue of their group identity. The British also imposed specific criminal punishments for sex "[against the order of nature](#)."<sup>3,7</sup> In addition to directing state violence to enforce rigid sex binaries onto their colonial subjects, governments of the Global North replicated these practices inwards on their own citizens. This mindset was, and still is, intertwined with white supremacy,<sup>5</sup> primarily directed at people of color in the Global North.<sup>3,8</sup> Indeed, state violence toward racialized transfeminine individuals across the world is a consistent thread from 16th century colonial powers to today's "Global Trans Panic."<sup>3</sup>

The work to reclaim and rebuild authentic scholarship on gender-diverse identities in the legacy of colonization remains a powerful act of healing and resistance. However, gender-diverse peoples and their cultures, histories, and practices remain conspicuously absent from academic and popular discourse in the Global North. This has created various gaps in understanding those discourses, such as the inability of trans-exclusionary white feminism to see itself as a culturally specific phenomenon emerging from the relative erasure of trans people in white supremacist cultures. In South Asia, despite colonial suppression, strong feminist solidarity across cisgender (cis; see [Box 1](#)) and transgender identities

stems from a long history of public visibility of trans women and their shared daily struggles with cis women against caste patriarchy and misogyny across rural, small town, and urban settings. Acknowledging these enduring trans-inclusive feminist traditions is necessary for effective trans advocacy, as the erasure of these cultural precedents enables the proliferation of ahistorical claims about the supposed novelty of gender diversity. Historical epistemological exclusion by the dominant sociocultural context has ultimately led to a dearth of sex and gender diversity in academia, science, and medicine, reinforcing the contemporary marginalization and oppression of trans people.

## Oppression of individual autonomy

"My body, my choice," the slogan for reproductive rights, summarizes the right to bodily autonomy. While being trans is not a choice, being able to make informed choices about what happens to one's body and how one expresses oneself throughout their life without external interference is a fundamental human right.

Erasure and delegitimization of scientific knowledge on sex and gender diversity are inextricably linked to attacks against bodily autonomy. [Such actions](#) have been widespread throughout the last century and continue to this day, including [non-consensual "corrective" surgeries on intersex infants](#) and sterilization of adults based on [disability](#), [race](#), and [ethnicity](#). Notably, in 1933, the Nazi government destroyed the [Institut für Sexualwissenschaft \(Institute for Sexual Research\)](#), the first modern institute for sexual and gender sciences that pioneered gender-affirming hormone therapies and surgeries. During their raid, [the Nazis burned 20,000 books in the Institut's library](#), irreparably destroying research and knowledge that was incompatible with their ideology. Nazi propaganda surrounding the raids stated, "[entrust to the flames the intellectual garbage of the past](#)."

Today, from [Russia](#) and [Hungary](#) to the [United Kingdom](#) and [parts of the United States](#), state denial of and action against transgender existence continues: governments are [revoking individuals' rights](#) to hormone therapy, surgery, and legal recognition of their sex, erasing the



**Figure 1. Sex and gender minorities experience multiple axes of marginalization and oppression in the contemporary academy**

The current academic structure privileges those of white, cisheteronormative identities and produces research, knowledge, and institutions that inevitably exclude sex and gender diversity (Challenges). Individuals and institutions must act to support transgender scientists at multiple levels (Intersectionality): eliminate discrimination, build inclusive environments, and foster solidarity (Actions). Working together to dismantle structural barriers and to incorporate many diverse and complex perspectives will not only improve the quality and rigor of science but will also create a truly just academy that serves all people.



existence of trans people. Policymakers advocating for restrictions on gender-affirming care (GAC; [Box 1](#)) [rely on false, misrepresented, or unreliable scientific sources or contradictory arguments](#). For instance, [policymakers often center fertility concerns that are unsupported in the medical literature](#) while simultaneously [advocating for and enacting policies which \*de facto\* compel surgical sterilization as a prerequisite for legal recognition of a trans individual's sex](#). Governments and institutions have criminalized [drag performance](#); restricted trans people from accessing [gendered facilities that are necessary for accessing public space without undue health risks \(e.g., restrooms\)](#); prevented trans people from participating in [gendered athletic activities](#); sought to police [gender nonconforming](#) presentation; prohibited diversity, equity, and inclusion offices at public institutions of higher [education](#); and restricted trans people from changing their [legal sex and gender markers](#). Few laws exist guaranteeing or protecting the rights of trans people. Where they do exist, [anti-trans advocates are working to erode them](#). Extralegally, trans people are threatened with [physical, sexual, emotional, or digital violence and harassment](#), and [hate-based attacks are on the rise](#).

Where rights have not been revoked, [inaccessible medical care](#) becomes one of the primary financial and psychological barriers to obtaining bodily autonomy. GAC that is not legally restricted is often uninsured. In countries with nationalized healthcare, such as the United Kingdom and the Netherlands, GAC is often limited by [wait times of 5+ years](#) and multiple stages of referrals, while in the United States, GAC coverage significantly varies by [employer](#) and [state](#). Even when GAC is available, access often requires “diagnostic assessments” built on archaic and discriminatory conceptions of gender and gender roles. Where medical care is contingent on financial security, these restrictions are compounded by the fact that trans people are [twice as likely to be unemployed](#) and less able to rely on family support than their cis counterparts.

Legal and material precarity puts educational attainment and a productive research career, already a challenge for early career researchers, even further

out of reach for trans people. Some trans individuals may be fortunate enough to live in or relocate to safer environments, but this option is not available to all. According to early insights from the latest [US Trans Survey](#), nearly half of respondents have considered changing states in the US because of proposed or passed legislation in their state, and 5% of respondents have already done so. Even when possible, moving to find refuge elsewhere threatens the individual and familial well-being while interrupting career-defining projects. Travel for conferences or field work may be, and often is, unsafe or impossible, further limiting trans people's opportunities for professional development, research, and collaboration.

### **Institutional oppression and apathy**

Trans individuals in the academy face oppression across multiple dimensions of “professionalism,” gendered harassment, and [workplace discrimination](#). “Professionalism” entails a demand for conformity to [white, cisheteronormative standards](#) ([Box 1](#)) that are the result of sexist, racist, and ableist prejudices. These expectations punish individuals who do not conform to a narrowly defined set of behaviors. Appeals to professionalism have greater consequences for people with intersecting marginalized identities, such as for trans women of color, who face additional, uniquely racialized pressures to perform femininity. Controlling what is “acceptable” gendered behavior or expression in the workplace marginalizes trans people as well as cis people with nonconforming gender expression.

Trans scientists report higher rates of gendered harassment in the STEM workplace compared to their [cis peers](#). This leads to worsened mental health consequences, decreased self-efficacy, increased attrition, and lower rates of productivity.<sup>9</sup> While data collection on how these conditions affect trans populations is limited, in 2022, transgender adults in the United States lost jobs at [three times the rate of cis men](#). Experiencing gendered harassment or remaining closeted to avoid it can have detrimental effects on trans people's mental and physical health.<sup>9</sup>

Discrimination, including within the workplace, leads to the loss of trans

knowledge, expertise, experiences, perspectives, and language from academia and medicine. Remarkably, the international health standards organization that addresses transgender medicine, the World Professional Association for Transgender Health, only incorporated input from the trans community on their Standards of Care in the last decade. These epistemic injustices ([Box 1](#)) directly impact the treatment of trans people in society. Historically, cis researchers studied trans populations without consultation or collaboration with trans communities,<sup>10</sup> causing harm by [perpetuating myths and bad science](#). For example, a transmisogynistic ([Box 1](#)) fascination with the bodies and psychology of transfeminine people led some researchers to [promote](#) and even create *de novo* myths about transfeminine psychology and sexuality. Transmisogyny has made transfeminine individuals hypervisible and transmasculine individuals invisible, contributing to a lack of research examining the health outcomes and lived experiences of transmasculine individuals.<sup>2</sup>

Institutional oppression, both by itself and combined with oppressions to individual autonomy, threatens the lives and existence of trans people, hinders their productivity, and disadvantages their ability to continue in competitive academic careers. This makes it harder for trans people to achieve sufficient representation within scientific leadership and makes it all but impossible for trans people to advocate for necessary institutional changes toward an academy that serves all people.

### **Call to action**

As scientists, we have the power to work toward a better society. Achieving equity in science and beyond requires shifts in collective values, policies, infrastructure, and governance. Advocacy on the behalf of trans people will provide benefits to all members of the scientific community regardless of their gendered expression or experience, as demonstrated by previous successful advocacy [for journal name change policies](#). Critically, this work is an ongoing process. Without sustained action by cis colleagues, achieving inclusion and equity becomes the *de facto* responsibility of those who are already burdened and marginalized. Here, we provide

actions that individual scientists and large scientific institutions can undertake to contribute to supporting trans scientists and trans liberation as a whole. While the specifics of these actions may differ across the globe, the fundamental nature of these suggestions remains the same.

### Individual actions

Individual actions can be distilled into three key components: showing respect to trans colleagues and students without singling them out, educating oneself and others, and utilizing one's privilege and influence to advocate for institutional and political change.

The fundamental first step is offering the basic respect of referring to people with the [names and pronouns that they use for themselves](#). Active allyship also requires correcting others when they misgender or deadname ([Box 1](#)) someone so that this burden does not always fall on the trans individual. Allies must use [gender-inclusive language](#) to help everyone feel welcomed and included. While there may be instances where faculty and staff need to know a trans person's deadname, basic respect and trust demand these not be used or shared with others. Similarly, those on hiring committees need to understand that CVs and certificates may include more than one name or gender across various documents and publications.

Educating oneself about the challenges and needs of the trans community is necessary for effective solidarity. Institutional LGBTQ+ centers offer workshops and resources on support and advocacy for trans students and colleagues and can provide connections to local organizations that are the best resources for helping trans people in your area. Many conferences and STEMM societies have diversity, equity, inclusion, and justice (DEIJ) workshops or committees that can offer resources about field-specific challenges and issues along with ongoing actions to address them. Nationally, organizations such as [Stonewall](#), [interACT](#), and [oSTEM](#) offer information and opportunities to contribute. Use this knowledge to create a safe and inclusive work environment in your role as a mentor and colleague; education about trans issues is not just the responsibility of trans people.

STEMM educators at secondary and tertiary levels must engage with these issues

by [developing curricula](#) that include relevant trans and queer topics and that showcase work by trans scientists. Critically, educators must challenge myths that pathologize queer and trans people and erase intersex people. These include common simplifications that assume an essential, biological binary of male and female that immutably programs an individual's physical body, physiology, and behavior into one of two possible phenotypes.<sup>11</sup> Importantly, trans-inclusive curricula reduce the spread of pseudoscience and directly improve trans representation in science by [increasing the number of trans students who pursue careers in STEMM](#).

Ultimately, solidarity with trans people is necessary to achieve transformative change. Supporting trans liberation as an individual means engaging in political and social action to enshrine the legal rights of trans people and change cultural beliefs, sometimes by taking on personal risk. [Collaborate with trans people to build trans-inclusive policies at your institution. Advocate for laws expanding trans rights. Boycott places enacting transphobic legislation and engage in protests and direct action to prevent transphobia becoming law.](#) Consider [community-driven collective organizing](#) to draw attention to the effects of the current climate on trans people. Solidarity means engaging in these actions earnestly and knowing that trans liberation is part of liberation for all. Join us in making our institutions and the places we live truly safe.

### Institutional actions

Universities, research institutions, professional organizations, publishing institutions, and other groups must overcome distinct challenges to achieve trans inclusion. Institutions need to work alongside trans people within their community to identify the distinct challenges they face. Nevertheless, certain fundamental recommendations and principles universally apply, categorized into three core domains: accessible environments, inclusive policies, and institutional accountability. Institutions that successfully implement and publicize trans-inclusive policies will not only benefit their current employees but are also more likely to recruit trans scientists who will bring their valuable perspectives to places where they are welcome.

Institutions must create environments that physically and socially include trans individuals. They should establish policies that protect individuals from disrespectful behavior and harassment and provide accessible, gender-inclusive facilities, such as restrooms, changing rooms, and lodging. Uncertainty regarding our personal safety and the potential misinterpretation of our presence can transform ordinary activities like using the restroom or random roommate assignments at conferences into distressing, distracting, and potentially dangerous experiences. Without shared respect and access to these spaces, it becomes difficult to meaningfully participate in our training programs, careers, and scientific pursuits. Establishing gender-neutral and trans-inclusive spaces and explicitly stating that gendered spaces are available to trans individuals according to how they identify can reduce everyday anxiety and cognitive burdens. One inexpensive and effective strategy for creating these spaces is designating pre-existing facilities as "[gender-inclusive spaces](#)." Dismantling these barriers empowers individuals to focus on making more effective contributions to their scientific fields and helps trans scientists to persist in STEMM.

Realistically, much of the world outside the classroom or lab currently lacks gender neutrality or inclusivity. Events like conferences, fieldwork, workshops, and other programs may require travel to regions with legislation that is hostile toward trans individuals. Organizers [should refrain from hosting events in areas with exclusionary and trans-hostile laws](#). While some STEMM LGBTQ+ resources offer guidance on navigating hostile environments,<sup>12,13</sup> it is essential to underscore the need for [trans support](#). Such support includes [remote options for event attendance](#), [travel grants to financially support people in hostile regions](#), [inclusive mentorship networks](#), and legal/logistical assistance for individuals subjected to law enforcement scrutiny while traveling in these regions. Implementing these types of support will enable inclusion of scientists from across the globe.

Institutional support also extends into inclusive policies, health care, and hiring practices. Clarify formally that as far as the institution is concerned, a person's

gender is based on self-identification, and employees should expect to be treated in alignment with their identities. Institutions must implement and follow through on explicit policies against harassment, including intentional misgendering. If local legislation prohibits this, partner with other institutions and civil liberties organizations to pursue [litigation to ensure a discrimination-free environment](#) while simultaneously [working around existing laws to support marginalized employees and students at your institution](#). We currently lack data on the representation of trans people within scientific institutions or [across academia at large](#). To inform and ensure accountability for equity initiatives, institutions and government agencies must [safely and ethically collect data on climate and outcomes for trans people in academia](#). Finally, while trans-supportive institutions represent valuable safe havens, recognize that local legislation and attitudes toward trans people will inevitably influence their lived experiences outside the academy. Trans people cannot check the burdens they carry from a hostile society at the door, even when it opens to a supportive environment.

Equity demands organizations implement supportive policies that make accommodations for the challenges trans people have faced as they pursued their careers (see “[Oppression of individual autonomy](#)” above). Institutions must normalize transition-related delays, akin to parental and medical leaves, for milestones like candidacy, defenses, tenure, and promotions. Grant-issuing agencies and institutions must consider these delays and provide extensions for trans researchers applying for early career and transition funding awards with strict timelines/deadlines for applications. Similar to parental leave, trans academics may occasionally require leaves of absence to attend to transition-related medical needs. Such leaves must be considered when assessing time-sensitive promotions and objectives, and [reentry grants](#) must explicitly include transition-related interruptions as qualifying events.

Institutions must implement trans-inclusive healthcare benefits that explicitly extend to partners and dependents. These benefits must cover every aspect of GAC ([Box 1](#)). Trans healthcare access varies across regions, meaning that trans-inclusive healthcare benefits must

feature region-specific accommodations to provide access to care. In addition to ensuring that high-quality care is available and accessible to trans people, institutions must have robust resources so that navigating the available care is straightforward.

Institutions must highlight the significance of DEI-related contributions in hiring and promotion. Trans people, like other people with marginalized identities, take time and energy from their research and teaching to drive DEI efforts and activism to address the unique challenges faced by marginalized communities. The cost of this labor is compounded for individuals with intersecting identities that amplify experiences of marginalization and hidden labor, such as trans people of color and trans people with disabilities. Advocacy work benefits marginalized communities and improves science as a whole, and it is comparably worthwhile to research and teaching work. These contributions by marginalized individuals to the scientific community [must be respected and recognized during evaluation processes](#).

Institutions cannot claim inclusivity while endorsing harmful and poorly conducted [scholarship](#) or platforming exclusionary [voices](#). It is imperative that institutions conducting research that has relevance to trans populations ensure that such research is rigorous, ethical, and informed by the communities it studies.<sup>14</sup> Further, institutions must work to ensure that they do not offer a platform to cis academics to speak on trans issues if their expertise has nothing to do with gender or sex. Institutions must ensure that maintaining academic freedom does not mean freedom from academic rigor or ethics.

### Collective action for a better future

Science is a collective, human endeavor. While it is often portrayed as impartial and objective, subjective biases, funding and institutional priorities, and the socio-cultural milieu undeniably influence the scientific process. There is no contradiction between rigorous science and the existence of trans people. Indeed, many of us are conducting scientific research on sex and gender, and we welcome more—if and only if these research programs are rigorous enough to be ethical and their social applications are accountable to those impacted by their methods,

findings, and interpretations.<sup>14</sup> High-quality, ethical scholarship relevant to trans lives requires individuals, journals, institutional review boards, and conferences—the collective efforts of all in science—to involve trans researchers. As stated by the disability justice movement’s ethos, “nothing about us without us.”

The resurgence of hateful, supremacist, and extremist ideologies around the globe has specifically targeted trans people. Anti-trans advocates, including some scientists and doctors, continue to distort the science of sex and gender while dismissing or restricting well-established scientific and medical practices. False “biological facts”—reminiscent of racist and ableist eugenic science of recent history—are used to justify social, legal, and scientific eradication of sex and gender minorities. Allowing such attacks to go unchallenged disempowers all researchers, erodes public trust in science, and facilitates anti-trans movements. As Desmond Tutu said, “[If you are neutral in situations of injustice, you have chosen the side of the oppressor.](#)”

Our struggles, regardless of identity, are inextricably linked. We invite you to join us as scientists in community. When we fight for some of the most marginalized, we combat scientific bigotry, misinformation, and oppression. When cis and trans people alike challenge sex and gender essentialism, we enshrine bodily autonomy and intellectual freedom. When we build institutions and systems to support all who contribute, we move to rectify scientific inequity and injustice. When we include people from all walks of life, we enrich STEM with unique perspectives that reveal new ways to explore nature’s creativity.<sup>15</sup> Together, we will emancipate our science from the strictures of bias, injustice, and inequity, to liberate not just those of us subjected to sexed and gendered oppression, but all people.

### ACKNOWLEDGMENTS

L.v.D. thanks members of the Leading Edge initiative, including Leonor García-Bayona, Meike van der Heijden, Valerie Tornini, and Clarissa Whitmire, for early discussions of this project. We thank Catherine Clune-Taylor and Karissa Y. Sanbonmatsu for discussion of the manuscript narrative. The authors received funding from The University of Minnesota and the Damon Runyon Cancer Research Foundation (DFS-56-23 to L.v.D.); the

Gruber Foundation (to E.S.D.); the National Institute of Mental Health (R21MH125263 to A.I.S.); the German Research Foundation (DFG), the German Federal Ministry for Research and Education (BMBF), the German Center for Cardiovascular Research (DZHK), the European Union Horizon 2020 program, and the Helmholtz Foundation (to S.K.F.); the University of Toronto Faculty of Arts & Science, Wilfred & Joyce Polsons' Foundation, Women's Brain Health Initiative, and Brain Canada (to R.J.W.); the National Science Foundation (PRFB-2305910 to M.M.; EEC-2127509 to the American Society for Engineering Education supporting J.J.); the National Institute of General Medical Sciences (K99GM147825 to Z.Y.W.; U24GM132176 and U24GM132176-S to F.S.); the Howard Hughes Medical Institute (HHMI) (GT11808 to F.S.); a UCLA National Institute of Health Institutional Research and Academic Development Award (5K12GM106996 to K.A.); and an HHMI Hanna H. Gray Fellowship (to S.D.S.).

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Conceptualization, K.A., L.v.D., S.K.F.-S., D.M.G., E.M.G., I.J., J.J., J.F.M., M. Miyagi, B.R., F.S., S.D.S., R.J.W., and Z.Y.W.; writing – original draft, K.A., B.M.A., A.C., M.K.D., E.S.D., L.v.D., D.M.G., J.J., M. McLaughlin, B.R., F.S., S.D.S., and Z.Y.W.; writing – review & editing, K.A., B.M.A., B.M.C., M.K.D., E.S.D., L.v.D., S.K.F.-S., D.M.G., S.S.G., E.M.G., I.J., J.J., S.L., J.F.M., M. McLaughlin, M. Miyagi, B.R., F.S., A.I.S., S.D.S., F.D.T., R.J.W., and Z.Y.W.; data curation, B.M.A.; visualization, E.S.D., M. McLaughlin, S.D.S., and R.J.W.; project administration, B.M.A., E.S.D., L.v.D., D.M.G., M. McLaughlin, M. Miyagi, F.S., S.D.S., and Z.Y.W.; supervision, L.v.D., M. McLaughlin, and S.D.S.

#### DECLARATION OF INTERESTS

A.I.S. received consulting fees from the World Health Organization to conduct systematic reviews on transgender health.

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