



Confronting Racism in All Forms of Pain Research: A Shared Commitment for Engagement, Diversity, and Dissemination

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Abstract: This third paper in the “Confronting Racism in All Forms of Pain Research” series discusses adopting an antiracism framework across all pain research disciplines and highlights the significant benefits of doing so. We build upon the previous call to action and the proposed reframing of study designs articulated in the other papers in the series and seek to confront and eradicate racism through a shared commitment to change current research practices. Specifically, we emphasize the systematic disadvantage created by racialization (ie, the Eurocentric social and political process of ascribing racialized identities to a relationship, social practice, or group) and discuss how engaging communities in partnership can increase the participation of racialized groups in research studies and enrich the knowledge gained. Alongside this critical work, we indicate why diversifying the research environment (ie, research teams, labs, departments, and culture) enriches our scientific discovery and promotes recruitment and retention of participants from racialized groups. Finally, we recommend changes in reporting and dissemination practices so that we do not stigmatize or reproduce oppressive forms of power for racialized groups. Although this shift may be challenging in some cases, the increase in equity, generalizability, and credibility of the data produced will expand our knowledge and reflect the pain experiences of all communities more accurately.

Perspective: In this third paper in our series, we advocate for a shared commitment toward an antiracism framework in pain research. We identify community partnerships, diversification of

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research environments, and changes to our dissemination practices as areas where oppressive forms of power can be reduced.

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Before the colonization of the Americas and the Caribbean, there was no concept of “race” in the way we understand and use the word today. Devaluation and degradation of those classified as non-European based on physical characteristics like skin color were used to justify an economic system that relied on the institution of forced labor, especially the enslavement of African peoples.^{63,125} The first slave acts in Barbados in 1661 created distinctions between “Christian servants” and “Negro slaves,” using these distinctions as a tool of mastery.¹¹³ Carolus Linnaeus’s “Systemae Naturae” then later formally codified and ordered these racialized groupings with White people near the top and Black people at the bottom.^{63,134}

The Human Genome Project disproved the genetic assumptions upon which these classification and coding systems were based by demonstrating clearly that genetic variation between individuals is as small as 0.1–0.5%, with no identifiable continental or racialized genomic clusters.¹³⁷ In fact, the greatest genetic diversity is within typically defined groups, that is, 2 people of European ancestry are more genetically similar to a person of African ancestry than to each other.^{90,107} This historical and scientific evidence shows that “race” is not biological but rather a social construct that provides or withholds benefits and privileges.^{104,125} Even as science has made strides toward stripping away biological conceptualizations, laying bare the social and political functions, we are still left to grapple with the social consequences of race and its constant companion – racism.¹²⁵

Throughout this 3-part series, we use the term “racialization or racialized” instead of “race” or “racial.” to refer to people from non-White groups (Table 1 for a full description). This choice highlights that racialized “othering” serves as a political and economic process that maintains deep-rooted White European hierarchies and power. These hierarchies and associated power structures relegate non-White individuals to previously unclassified social groups that now undergird the modern concept of race.^{101,136} Racialization focuses on how race is defined, the meanings attached, and how it is used to create and reproduce racism and afford individuals the benefits of Whiteness.¹¹² Further, because racialization is not static, some groups (eg, individuals of Greek, Italian, and or Eastern European origin who immigrated to the USA in the 19th century) were first considered as non-White, but over the course of a century, assimilated to Whiteness and gained the associated social dominance and power.^{55,61}

A key driver of racialization is colonialism, which is the extended subjugation and control of sovereignty of 1 country over another country or countries that tied

black skin color to inferiority. Colonialism was framed not as the dehumanization of the oppressed but instead as a “civilizing mission of lesser developed” peoples,⁵³ which denied the knowledge of colonized peoples along with their agency. Colonialism dominance spread racialization globally and was used to justify the right to limit Filipinos or Puerto Ricans the ability to self-govern, the public display of Black people in Europe in the 19th and 20th centuries, the classification of the African Diaspora of distinct tribes and cultures as 1 universal Black “primitive” culture to rationalize enslavement, and the creation of taxonomies for the Indigenous Peoples of Australasia and the Americas to facilitate their erasure as a cognizable group.⁶⁴

Some groups experience social and political oppression or stratification in relation to their position in a social hierarchy (eg, caste system in India) or religion (eg, Rohingya Muslims in Myanmar). However, colonial anthropology also used racialization to classify and hierarchize castes and religious groups.⁵¹ This type of racialization often operates through the lens of colorism (eg, perceived skin tone discrimination from racialized groups and White people) and functions similarly to racialization as a form of hierarchy and discrimination. For example, some Syrian Christians express their identity as “light-skin colored” of upper-caste Namboodiri origin.⁵¹ Although it has received less attention in disparities research, colorism can have significant effects on health, with recent research demonstrating that in a large sample of White and Black adults in the USA, in-group Black colorism was a stronger predictor of pain than everyday discrimination.⁹⁵ This research highlights that although previously colonized countries have gained their independence and landmark legislation in the United States (USA) such as the Civil Rights Act of 1964 forbade discrimination based on racialized identity, intrapersonal, interpersonal, structural, systemic, and cultural policies and practices sustain inequities in both implicit and explicit ways to the detriment of psychological and physical health.⁷

Despite the fallacy of “race neutrality,” racist policies continue to impact every system in society, including scientific inquiry. Science has its own shameful history of overt racism, like the Eugenics Movements in both the USA and Europe that later fueled the genocides of Jewish and Romani people in Nazi Germany⁷⁷ and “The Tuskegee Study of Untreated Syphilis in the Negro Male,”^{20,72} an enduring example of unethical research conduct resulting in intergenerational harm to Black men in the USA and their families.¹¹⁴ Examples of contemporary scientific racism, such as research that ties racialized disparities in COVID-19 burden to gene expression²³ continue to pathologize Blackness. Opara et al. 2021 labeled this conflation of race and genetic

Table 1. Explanations of Common Language Choices in Scientific Narratives and a Commonly Used Underlying Research Framework in Pain Research With Proposed Shifts Based on an Antiracism Framework

COMMON APPROACH		PROPOSED SHIFT*		RATIONALE FOR SHIFT
KEY TERM	DEFINITION	KEY TERM	DEFINITION	
Common Underlying Research Framework				
Non-Racism	The passive rejection, opposition, and disassociation from behaviors, discourses, and ideologies that are considered racist	Antiracism	The active process of eliminating racism by changing systems, organizational structures, policies and practices, and attitudes, so that power is redistributed and shared equitably	Calls on investigators to actively build cultural humility, self-reflect on study design choices, and engage in power-sharing and other behaviors that will bring the field of pain closer to justice for racialized groups
Common Language Choices in Scientific Narratives				
Race/Racial	Social classification of individuals based on a mix of physical features (eg, skin tone and hair texture)	Racialized identity or racialized group identity when referring to racialized groups; "Race" (in quotations) when referring to White people or the general construct	A social process by which racialized meaning is ascribed to a group of individuals that previously did not identify as such; historically, White Europeans racialized individuals who did not have similar physical features to their own, leading to "othering" and differential treatment; because White people initiated the process of racialization, in our series, we do not refer to White people as being racialized	Indicates the action of White European societal and structural influences in creating and perpetuating racialized groups and hierarchies based on those groups (ie, acknowledges the sociopolitical process) rather than implying distinct classes of people (ie, might be inferred as biologically based); We use quotation marks around the term "race" where relevant to connote that it is a socially constructed, dynamic phenomenon
Minority	A distinct group that coexists with, but is subordinate to, a more dominant group	Minoritized	Group(s) in society that are defined as "minorities" by a dominant group	While used by some to denote minority percentage of the population, this term has taken on connotation that that racialized groups are relegated to a "minority" status by White dominant society
Social Determinants of Health	The conditions in the environments where people are born, live, work, play, and age that affect health, functioning, and quality of life that ultimately lead to poor health outcomes	Social Indicators of Health	An imperfect replacement term that seeks to emphasize social factors that contribute to health outcomes while moving away from deterministic language (see Salerno & Bogard, 2019)	Indicates that conditions are not fixed and can change across the lifespan, be surpassed because of resilience factors, or change with intervention
People of Color, BIPOC, non-White	Naming conventions typically used to refer to racialized groups	Use individuals' preferred identities or "racialized group(s)"	For example, "Black" or "African American" or "Jamaican American" when referring to a particular identity; "Racialized groups" can be used when referring to individuals spanning more than 1 pan-ethnic category	Rather than passively cluster pan-ethnic identities – which erases their heterogeneity – using individuals' preferred identity is a step toward recognizing unique lived experiences, and using "racialized" actively acknowledges the reason for lumping these groups together

Abbreviation: BIPOC, Black, Indigenous, People of Color.

*Because semantic change occurs continually, the utility of these proposed shifts should be closely monitored over time. As needed, new terms that hold systems accountable and validate the experiences of racialized individuals should be used.

ancestry as a “modern-day Drapetomania” – the nonsensical notion that created a biological cause for enslaved people running away.¹⁰²

We see the insidious, but no less profound, influence of scientific racism in health care with increased maternal deaths for Black women compared to White women in the USA⁸⁴ and the United Kingdom (UK)⁸³ and reduced mortality for Black newborns cared for by Black physicians in the USA.⁵⁷ Most recently, a medical center policy in New Mexico (USA) separated only Native American women from their newborns as a “precaution” against the spread of COVID-19,⁴⁸ and maternal mortality in Black women in Brazil due to COVID-19 was almost 2 times higher than that observed for White women.¹¹⁶ Ignoring historical and modern-day patterns of oppression promotes inequities in research and clinical practice and does not address systemic issues.³⁸ Instead, mindfulness that scientific knowledge continues to benefit White people from Western, educated, industrialized, rich and democratic (so-called WEIRD) countries is necessary to change the status quo in all scientific fields, including pain science.⁹⁴

Shared Commitment

In this third paper in the “*Confronting Racism in All Forms of Pain Research*” series, we will build upon the call to action (Morais et al., in this issue⁹⁶) and reframing of study designs (Letzen et al., in this issue⁸⁵) and continue to highlight an antiracism perspective and a shared commitment to change or enhance current research practices through a critical race theory (CRT) lens. CRT provides a framework for investigators to remain attentive to equity throughout the research process.⁴¹ Terminology and language choices in this 3-part series have been deliberately chosen to reduce harm.⁸⁵ However, when specific examples have been provided or recommended, the goal is to improve clarity and acknowledge structural and cultural forces (ie, race vs racialization) rather than serve as the “only” option. Instead, we ask researchers to pause and reflect on terminology choices carefully with specific consideration for the preferences of the communities from which their samples are drawn, particularly those communities that have been under-represented in research.

Pain research has often focused on individual-level factors (eg, patient beliefs, genetic susceptibility) whilst adopting a deficit-based approach (eg, focusing on the perceived weaknesses of racialized groups). This approach does not allow for a deeper consideration of social, economic, and policy factors outside of the individual’s control, driving persistent disparities in pain outcomes.¹²³ We contend that together researchers can overcome these limitations through a *shared commitment* to interrogating racism as a critical driver of racial health inequities in the design, recruitment, analysis, interpretation of findings, and dissemination of pain research.¹¹⁰ We view our series as the beginning of this collective commitment toward antiracism instead of a prescriptive guideline, where together, we can address

unequal power differentials experienced by racialized communities and the deep connections to pain disparities.⁷ Without these changes in thinking *and* behavior, we will continue to reproduce old patterns of inequities and lessen our ability to alleviate pain across all groups.⁹⁴

This work will emphasize the systematic disadvantage experienced by racialized groups globally whilst acknowledging that these heterogeneous communities have complex identities, histories, and cultures and that social and political oppression work through different mechanisms across cultures.¹¹⁹ Specifically, we will discuss how forming community partnerships through engagement building can increase the participation of racialized groups in research studies and enrich the knowledge gained. Additionally, we will highlight why diversifying the research environment (ie, research teams, labs, department culture) promotes recruitment and retention of participants from racialized groups and the need for changes in disseminating research findings. Although challenging, the rewards are manifest, and this shift will produce knowledge that reflects the pain experiences of *all* communities more accurately.

Community Partnerships and Engagement Building

A critical component in moving pain science toward an antiracism framework is forming partnerships with patient advocates and community stakeholders throughout the research process. Researchers can inadvertently approach a project with a predetermined agenda that fails to include the community’s needs rather than co-producing knowledge. To gain buy-in from communities, this involvement cannot be a tick box exercise or an afterthought but instead works best as a feedback loop that is of mutual benefit with shared ownership of research ideas and achievements.⁷⁹ To foster this process, researchers will have to move out of traditional silos and, from the projects’ inception, aim to understand the interwoven history, climate, culture, and values of the people that may participate in the study.⁷

Before the project starts, the research team can complete an environmental scan (formal or informal). Environmental scans have been used frequently in healthcare systems and are an effective approach to seek, gather, and interpret information to inform decision-making and planning.²⁴ Through listening, observing, and reviewing publicly available resources, the team can begin to understand the current community policies and practices, better understand the existing systems and institutions, increase the credibility of the project, and enhance usefulness by aligning project outcomes with what the community perceives as their social and health goals.^{7,133} Pain scientists could also consider conducting a pilot needs assessment to systematically ascertain the “gaps” between current conditions (eg,

sociological or health) and the objectives of the research study.⁶⁰

Community-Based Participatory Research

The approach of establishing meaningful connections with communities to achieve shared research goals is exemplified by the community-based participatory research (CBPR) tradition, which is often seen as the gold standard for community-engaged research. Although CBPR was first widely used in the 1990s in the USA,⁸¹ it builds upon a rich history of social and political movements that advocated for communities as the primary sources of solutions for their own challenges.⁴⁶ The CBPR approach emphasizes cultural humility to support power-sharing between academic researchers and communities, as well as the application of research findings for social change and the reduction of health disparities. Therefore, it is an appropriate approach for addressing the justified mistrust of the health research establishment on the part of racialized groups.⁷⁵

Other well-defined CBPR principles include: 1) research should equitably involve community representatives in all aspects of the research process, 2) benefits of the research should accrue to all partners equitably, 3) a strengths-based rather than a deficits-oriented framework should guide work with communities and, 4) co-learning should occur between community and academic partners. Researchers can conduct interviews, focus groups, community dialogues and equity-focused listening sessions to gather stakeholders' perspectives and ensure that stakeholders are enabled throughout the *entire* project with co-ownership of data interpretation (both quantitative and qualitative), sharing the project impacts, and co-authorship of conference proceedings and peer-reviewed publications.^{76,131} CBPR shares a philosophy of valuing partnership and collaboration with Patient Public Involvement (PPI) utilized in Europe and the UK, along with decolonizing research methods used by researchers in African countries such as South Africa, Kenya, and Nigeria. Shifting from "power over" to "power with" in participatory research and acknowledging what can often be a Eurocentric research worldview lays the foundation for collaboration and trust, including making research materials available in the local language (eg, in Yoruba even if participants also speak English), promoting local ways of knowing, and recognizing individual and community assets.^{36,80}

Some recent studies have demonstrated the principle of co-producing knowledge with patients with sickle cell disease (SCD), their caregivers, and other stakeholders (eg, patient charities, service improvement experts) from the earliest planning stages (eg, proposal development) before applying for funding so that stakeholders can be compensated for their time.^{31,70} Patients with SCD can receive racialized care and pain treatment.^{66,98,109} As such, this population provides a valuable illustration for pain scientists incorporating CBPR into their research. During this collaborative process, via in-depth qualitative interviews and assistance in designing research tools, stakeholders have co-

designed an app to improve self-management,³² tested and provided input on virtual reality patient avatars and messaging,³² formed stakeholder advisory boards to advise on recruitment and retention strategies,⁷⁰ and identified the critical challenges for the transition from pediatric to adult care as feeling disregarded, questioned, or made to feel invisible when they demonstrated expertise about their pain treatment.⁹²

Despite the clear benefits of the CBPR approach, researchers wishing to alleviate health disparities often face practical barriers (eg, time, funding, and connections) to using the "full" CBPR approach. In recognition of this, Key et al. (2018) present a continuum of community engagement in research, from consultation with partners on 1 end to community-driven research on the other. The spectrum is flexible and identifies different entry points for community involvement, highlighting "leverage points" related to context and equity to support community-academic partnerships.⁸² Critically, however, when any degree of CBPR is implemented, the goal is to be transparent, respectful, and reciprocal.

The utilization of CBPR principles in preclinical research remains in its infancy. Fox et al., 2021 found only 32 preclinical studies (in vivo and in vitro) have incorporated public engagement, with the majority conducted in the USA, UK, and Europe. Studies assessed included a range of conditions, including cancer, Alzheimer's disease, autism, with some studies including pain populations, primarily rheumatic and arthritis conditions. Currently, however, no preclinical studies have incorporated patient engagement at the data collection and data analysis investigative stages.⁴³ Researchers have indicated that limits of citizen capacity, the complexity of science, the need for professional autonomy, and less scope for CBPR to beneficially impact research as reasons not to include patient involvement in preclinical studies.^{10,108} This cycle of low expectations has led to low investment,⁵² even though public participation in preclinical work could support efforts to conduct research in an ethical, accessible, and transparent manner whilst also generating novel ideas.⁸⁸ Additionally, involving the patients throughout the project in specific tasks (eg, assisting with data access) can help create research that reflects the balance and diversity of priorities within the population.⁹⁹

Community-engaged research traditions, particularly CBPR, laid the conceptual groundwork for the models of stakeholder engagement required for funding and support through the Patient-Centered Outcomes Research Institute (PCORI) in the USA, the PPI Initiative in the UK, and the European Patients' Academy on Therapeutic Innovation (EUPATI).^{16,44,122} Like CBPR, PCORI and PPI models promote genuine partnership in decision-making at each step of the research process. Importantly, it is increasingly supported by other major funders, for example, by the National Institutes of Health (NIH) in the USA as part of their HEAL (Helping to End Addiction Long-term)⁴⁷ initiative to address chronic pain and opioid misuse and the National Institute for Health Research James Lind Alliance in the UK.¹²⁶ However, expanding the funding opportunities

outside of these specific mechanisms along with creative thinking and flexibility from funding bodies is needed to support this work. For example, a recent supplement to the NIH HEAL Initiative in the USA funding that supports strategies to increase participant diversity, inclusion, and engagement in clinical studies could help pay competitive wages to non-traditional research staff (eg, supplements for community health workers)⁷³ or allow for adjustments in deadlines to obtain adequate stakeholder input.⁹³

Such stakeholder-engaged approaches align with principles of antiracism in that they give racialized populations a voice in the conduct of research, including the prioritization of research questions that will address disparities; ensuring that recruitment and retention strategies are accessible and equitable; and that data collected reflects the lived experience and priorities of the people under study. Ample guidance is available for researchers who wish to use these approaches, from ethical compensation of stakeholder-partners to demonstrating how to ensure fair and transparent governance of stakeholder bodies.²⁷ For other practical guidance specific to pain science, Janevic et al. (2021) also provide tips for engaging stakeholders and communities in pain research, including a checklist for researchers.⁷⁸

Participant Recruitment and Retention

Individuals from racialized groups often do not believe that scientific findings will produce beneficial results for them.^{28,74} Recruitment methods have remained stagnant and, for the most part, in WEIRD countries are still targeted to recruit White participants. Disclaimers for low participation of racialized individuals in pain research include “hard-to-reach” or

harboring “mistrust” without acknowledging the systemic barriers faced or the significant role of racism in institutional and medical systems.¹⁹ The onus is on racialized groups with the attribution that “mistrust” drives disparities without recognizing that within our approaches and systems, there are valid reasons for skepticism. By not acknowledging the barriers and supporting the facilitators to the inclusion and retention of racialized participants in research, we reduce our knowledge, delay understanding of factors contributing to poor outcomes among racialized populations, and prevent the receipt of high-quality care.^{50,117}

Applying an antiracism framework using CBPR principles offers a way to rebuild trust and increase the engagement of racialized groups in pain research. This process begins with carving out protected time during work hours to include diversity, equity, and inclusion training. A large-scale meta-analysis of over 260 studies indicated that integrated programs worked best with training that focused on skill-building and awareness.¹⁴ A recent successful example of this type of training implemented a pain-focused health equity curriculum (ie, defining, examining, and discussing ways to reduce implicit bias) at an academic institution.⁴ Team members could also complete confidential questionnaires to assess their *a priori* assumptions relative to each research question.⁴² In addition, regular community interactions (in-person or virtual) can engender trust,⁵⁴ reduce negative perception, and strengthen connections.^{118,135} Listening sessions in collaboration with leaders and familiar key players (ie, clinic staff at medical clinic, server at local restaurant) provide an opportunity to hear suggestions about overcoming barriers to participation and better understand local cultural attitudes and norms (Fig 1).

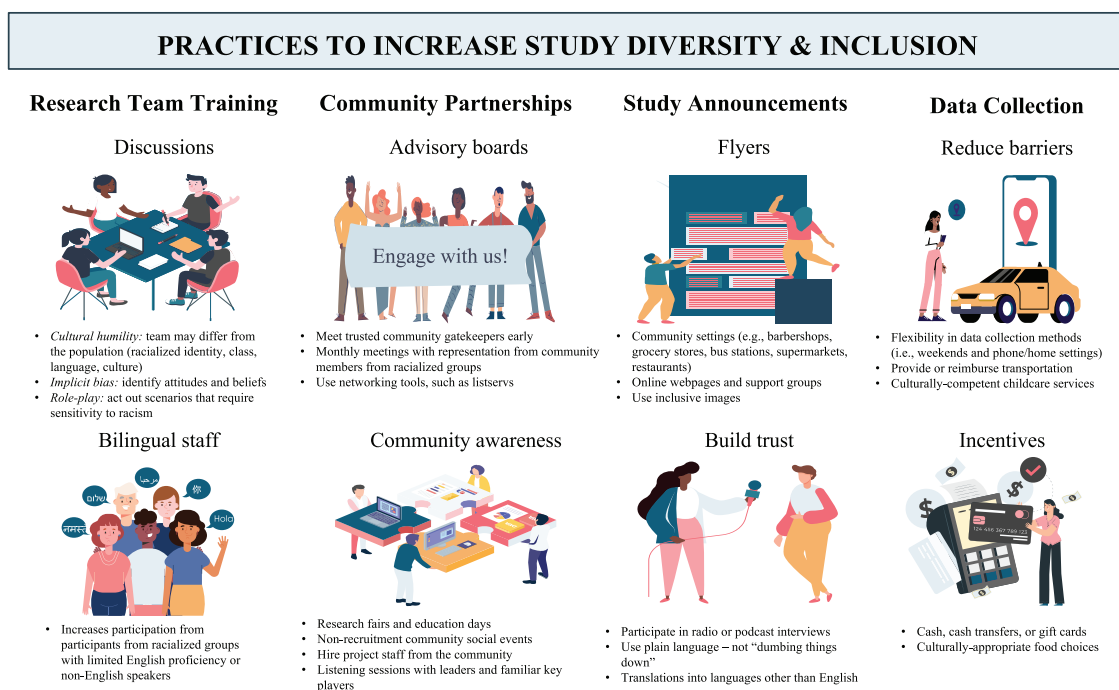


Figure 1. Opportunities to improve recruitment and retention and build trust with participants in pain from racialized groups.

Responding to community partner feedback about recruitment efforts and including community members in the recruitment process can remove the distance between potential participants and the research team. Similarly, it is helpful to have an appreciation that racialized populations may be exposed to additional harm due to the lack of established social infrastructures (eg, medical and community facilities)¹¹⁸ and that immigration and criminal justice policy may limit a researcher's ability to compensate some participants from racialized communities for their time adequately (eg, limited access to USA federal and state funding to pay undocumented immigrants).¹³⁰ Therefore, studies that include undocumented participants should assess the risk of gathering individually identifiable information and tracking the compensation and may instead consider offering something other than monetary remuneration as compensation (eg, meals, transportation, free care).⁵⁶ Transparency during the informed consent process where the reasons and options for compensation are clearly stated can help participants understand payment options and make them feel more comfortable accepting compensation.¹⁰⁰

To create strong community-academic partnerships, efforts to engage community members and trusted community gatekeepers must begin early, ideally before the recruitment phase. Monthly meetings of community advisory or study advisory boards with the representation from racialized groups that match the characteristics of the intended study sample add significant value.⁸⁶ By obtaining perspectives of racialized individuals affected by pain, researchers can inquire about how their institution connects with community members, how the community will receive their study, and identify any potential barriers. These efforts contribute to building trust by providing community members with a voice in the research process and raising awareness about the role of research participation in developing new treatments that will benefit marginalized populations.³⁵ To avoid burdening any 1 individual or organization and to ensure the representation of diverse perspectives, researchers should take the time to establish broad and deep relationships across the community to avoid overburdening any 1 individual or organization. Through this process of relationship building, the research team can demonstrate sensitivity to and appreciation for the community as a valued partner.

Essential to research participation is the dissemination of recruitment materials (eg, study announcements). Efforts may be ineffective if the materials are unnecessarily complex or if study procedures appear too burdensome. To help ensure research communication meets the comprehension standards for ethical research, we recommend using plain language practices. That is, clear communication that can be understood the first time it is read or heard. Plain language is not "dumbing things down" or only applicable for individuals with low literacy; instead, plain language refers to communications that are accessible for the intended audience. Some strategies for plain language include: (1) writing in short sentences, (2) using active voice, and (3) words

familiar to the audience (eg, "use" instead of "utilize"), and the inclusion of images that illustrate content to make it easier to understand.¹²⁴ We also recommend employing images that reflect the diversity of the population; this includes representation of various racialized backgrounds as well as socioeconomic statuses to reflect the heterogeneity of the population. Moreover, translate recruitment materials into languages other than the dominant language of the country in which the study is being conducted.^{120,121} Of note, when completing language translations (from the original language to target language), special attention is needed to ensure that translators are also bicultural to generate culturally-responsive translations that address the discrepancies and cultural ambiguities that occur with text translations.⁵⁷

Flexibility in data collection methods acknowledges the efforts required for participants from racialized groups.¹⁷ When describing the research study, researchers can also include information regarding study procedures that recognize primary logistic and financial barriers, including transportation barriers and time commitments that may appear burdensome for a population unfamiliar with research. Culturally-appropriate incentives, along with data collection flexibility, can also reduce obstacles (Fig 1). These recruitment and retention strategies, although not exhaustive, can foster participants from racialized groups beliefs that their participation will help others or their communities and increase health-related knowledge with minimal risk.^{74,86,111} To reduce secondary barriers that influence willingness to participate even when the more obvious logistical and financial barriers have been reduced, it is critical to build trust and credibility and convey the appropriate information about the benefits of research. These strategies will promote understanding and challenge the short-sighted stereotype that individuals from racialized groups are hard to recruit or unwilling to engage in research.^{59,61}

Diversifying Research Environments

Pain research and clinical practice infrastructures support interdisciplinary teams from fields including neuroscience, neurology, psychology, medicine, data science, population health, and statistics to characterize the cellular, neurological, and psychological mechanisms that regulate pain. Unfortunately, the same financial and institutional supports have not been equally focused on ensuring that research teams are diverse and include racialized groups. Social epidemiologists and behavioral scientists also represent untapped expertise related to understanding the effects of racism in pain outcomes, with "interdisciplinary" rarely reaching beyond the usual biomedical spaces. A team science approach operates at the highest levels when contributions and perspectives of researchers from racialized groups are included and elevated.⁹⁴ Increased diversity of the research team needs to occur across *all* pain disciplines

in preclinical and human participants studies to drive scientific discovery.

To fully realize the potential for innovation, inclusivity can be cultivated at multiple levels (eg, undergraduate, graduate, faculty, administration). The responsibility for diversifying research teams cannot fall disproportionately on principal investigators (PI) from racialized groups. We must ensure that contributors from racialized groups can share intellectual contributions that can lead to the dissemination of findings and potential future funding.²⁵ This is not a purely benevolent exercise. Racially and linguistically diverse teams in which leadership roles are shared have several significant benefits.¹⁸ They achieve better community stakeholder participation of racialized populations, incorporate multiple perspectives, publish more papers, and receive more citations per paper.⁴⁵ Partnering across institutions, particularly with academics at historically Black colleges and universities, Hispanic-Serving Institutions, Tribal Colleges and Universities, Asian American, Native American, Pacific Islander-Serving Institutions, and community colleges, can promote scholarship from racialized groups whilst increasing trust from participants underrepresented in research studies.²²

Diversifying Teams

We advocate for diverse teams with equal participation from individuals from racialized groups, and there is merit to using racialized group identity to match research assistants with the study population. However, it is often not possible due to lack of diversity in the research workforce, and even when possible is not sufficient to remove biases. Instead, a deeper examination is necessary. Cultural competence and cultural humility should be a central component of the departmental culture focusing on self-reflection and awareness (Morais et al., in this issue for more detail⁹⁶). Ahmad et al. (2019) present evidence-based strategies to select, recruit, and retain undergraduate students from racialized groups in the USA,⁶ whilst Chaudhary et al. (2020) provides an excellent overview describing how to build an anti-racist lab.²⁵

Briefly, they recommend helping postdoctoral, graduate, and undergraduate students build networks through culturally relevant professional societies (eg, Society for Advancement of Chicanos and/or Hispanics,^{3,40} Black British Professionals in STEM,¹³ the Aurora Education Foundation for Indigenous scholars in Australia). Promising candidates can be identified quite easily outside the usual predominately White networks in the USA using targeted listservs and databases (eg, DiverseScholar.org, minoritypostdoc.org), connecting with programs aimed to increase representativeness in higher education (eg, Maximizing Access to Research Careers [MARC] Scholars, McNair Scholars), and attending conferences focused on increasing diversity in the academy (ie, Understanding Interventions that Broaden Participation in Science,¹²⁸ Annual Biomedical Research Conference for Minority Students^{8,30}). Although most of the programs highlighted are in WEIRD countries, we encourage researchers to search for similar resources for racialized

(eg, Indigenous Peoples) and socially oppressed groups in their regions and countries.

Departmental Culture

PIs should foremost assess the lab and departmental culture to ensure they are not recruiting students from racialized groups into toxic environments. This requires allyship, which means actively working to advance the culture of inclusion through intentional, positive, and conscious efforts.^{12,132} To be an ally, words *and* actions must be in sync. When students from racialized groups courageously share their experiences of racism – believe them. Small steps can have a significant impact, such as creating safe spaces for all students to discuss racialized identity and racism and to report events when they happen. However, continual investment is needed. Researchers should advocate for specific, actionable departmental policies where racialized disparities can be discussed and action plans are developed, including regularly (eg, once a semester or term) collecting anonymous student data through climate surveys, paired with transparent, aggregate reporting of the survey's results. Key points from the survey need to lead directly to change.⁴⁹

Creating this supportive environment depends upon a shift in the department culture from the more common “diversity-focused perspective” in which departmental leaders focus on increasing the number of recruits from racialized groups with interventions focused on fitting the racialized scholar into the existing majority White institution. This practice often includes little recognition of why individuals may not want to apply or stay within these types of environments. Instead, we support Griffin's call for the adoption of an “equity-focused perspective” in which the emphasis shifts from the racialized scholar to the institution and the policies and structures (eg, faculty bias in hiring, tenure, and promotion) that perpetuate inequities and inhibit the ability to increase and maintain faculty diversity.⁵⁸

Allyship also requires understanding that colleagues from racialized groups often undertake extra, mostly uncompensated work that their White peers are not asked to do. This cultural taxation, more colloquially known as the “Black or Brown Tax,” is infrequently rewarded in promotion and tenure and can involve serving on multiple equity and inclusivity committees or mentoring students or junior colleagues from racialized groups.¹⁰⁵ This is not to say racialized scholars are not invested in these issues and want to give back, but these requests are in addition to current workloads and can easily lead to burnout.⁵⁹ Making these shifts in departmental culture advances the goal of a shared commitment toward an antiracism framework by reducing the relative homogeneity of pain scientists and expanding the range of questions asked. Moreover, racialized scholars may be more likely to prioritize community partnerships and knowledge translation.¹¹ Finally, diversifying the speakers at departmental colloquiums supports both the invited researcher and the

students. When organizing these workshops or symposia, researchers from racialized groups should be invited to co-lead and not just participate.

Toolkits and Funding

Recognizing that diversifying the student body and making changes to the departmental culture is everybody's responsibility. Taking on or providing support for some of these roles (when appropriate) will increase the cumulative effort to improve diversity, equity, and inclusivity.²⁶ Research led by racialized scholars is often under-cited across all pain research fields, including pain disparities, which devalues these academic contributions. As this work provides the basis for our field's knowledge of the effects of racism on pain outcomes, it is critical to value and include racialized scholars.⁵ In support of these necessary changes, the Toolkits for Equity project have created the freely available Antiracism Toolkit for Allies,^{34,127} which provide a common framework, shared vocabulary, and best practices. Academics for Black Survival and Wellness² is a personal and professional development initiative for Non-Black academics. As a truly international collective of over 10,000 participants, the initiative provides training materials along with a supportive online community to make an actionable change whilst also providing a healing and wellness space for Black people.

In addition to the personal and professional development resources described above, funding sources for minoritized graduate and postdoctoral students have been developed across numerous academic institutions. If an initiative does not exist, providing active support for such an effort and highlighting the need to improve recruitment of racialized groups at the institution can be a shared goal.⁴⁹ External funding for racialized students is also available through grant opportunities in the USA from private foundations such as the William T. Grant Foundation¹ and federal through the NIH diversity supplements.⁶⁷

Dissemination of Research Findings

Dissemination of research is a critical point in the research process.⁶² Within our research silos, we have begun to more thoroughly examine policies, practices, and procedures that give rise to specific types of bias (eg, publication bias). However, an application of an antiracism framework along with disseminating findings outside of peer-reviewed publications to sectors in policy, clinical practice, science, education, and business have traditionally been secondary or absent goals. Dissemination of results directly back to patients and/or participants and community partners, particularly those who are racialized, marginalized, and stigmatized, happens even more infrequently, limiting our ability to improve knowledge about pain as well as identify multi-level approaches for addressing pain disparities and inequities.

The most conventional approach to disseminating pain science research is through peer-reviewed

publications. Although this dissemination avenue receives the most time and effort, authors do not often consider how elements of the manuscript may perpetuate racism and bias. For example, racialized categories may be needed to identify and remediate inequities, but as a consequence, the focus on differences may reinforce racism.⁷¹ Race *must* be acknowledged as a social construct that is tangibly experienced and shifts in terms of context, setting, and geographic region. Because this process of conceptualizing and contextualizing race can be challenging, some pain researchers may be tempted to avoid mentioning racialized experiences at all, but the critical significance of race in all of our lives cannot be ignored. Even when there is compelling evidence of discrimination, scholars may use overly circumspect language that does not directly describe practices as racist. Harawa and Ford (2009) highlight that questions such as "Is it race or racism?" inadvertently yet inaccurately suggest that there exists a neutral "race" that is neither a product of nor affected by racialized stratification.⁶³ Further, hypotheses or objectives also need to be examined to ensure that they do not have racist, stereotypical, or inferiority undertones (eg, White participants will use more adaptive "problem-focused" coping styles to manage pain, whereas Black participants will use more maladaptive "passive" pain-coping styles).

Reducing Language Bias

In disseminating research findings, the use of inclusive culturally and community sensitive language can help ensure that participants are treated with respect and dignity, avoid harmful labels, and are perceptive to differences when characterizing study samples. In short, our words matter. There is a fallacy that long-term use of labels justifies their continued use, but this ignores that language is constantly evolving.³⁸ We can find alternatives that do not inflict harm. Resources on incorporating culturally and community sensitive language are increasingly available from professional organizations relevant to the care of individuals with pain, including the American Psychological Association (APA)¹⁵ and the American Medical Association (AMA).^{9,39} Use of these guidelines is not exhaustive, but it will reduce bias when reporting and discussing racialized groups through the use of capitalization in descriptions of racialized categories (eg, Indigenous People), removing the use of outdated terms (eg, Caucasian), and not using the term "Other" and collapsing groups with distinct identities into this single category. Additionally, characterizing participant self-report of racialized discrimination as "perceived" may seem benign, but within the antiracism framework, it can be acknowledged that a history of invalidation accompanies this term for racialized groups.¹²⁹

Other broader ways to incorporate culturally and community sensitive language also fit well within an antiracism framework. For example, using gender-inclusive language by discontinuing the blanket use of male terms and utilizing the gender-neutral pronoun "they" instead of "he/she." When describing age, use "years of age" and avoid using words such as "experienced" or

“seasoned” for older adults.³³ Person-first language is also a way to emphasize the individual first rather than the illness, for example, changing the term “chronic pain patient” to “person living with chronic pain.” Although subtle, this difference shifts the focus *toward* the individual and highlights the person, not just the condition. Importantly, for all aspects of culturally and community sensitive language, these changes must be applied to *all* groups, including control samples — this change highlights that everyone is a person first, not just those experiencing pain. Because preferred terms may vary by community and over time, working closely with communities whilst using cultural humility throughout the research process will enable researchers to learn the terms that are affirming and meaningful to a given community.

There have been multiple calls to focus our scientific language on the structure or system rather than the individual.^{37,115,129} Recently, O’Reilly (2020) answered this linguistic call to action by emphasizing “systems-centered language.”¹⁰³ Systems-centered language seeks to end the dehumanization of people that occurs whilst discussing how they are experiencing oppression. For example, people who are “at-risk” have been exposed to harm from a specific circumstance. Yet, when we use this term, the system causing the harm is rarely identified. A possible replacement term is “community exposed to additional harm,” which shifts the onus onto the system that is adding burden. We suggest that harmful labels or even traditional or commonly-used terms be examined through a systems-focused lens. Or, explained by O’Reilly, “we cannot dismantle what we dismiss!” [Table 1](#) highlights some of the terms O’Reilly discussed and other potentially harmful labels. Critically, we view this table as an iterative, ever-evolving document that should be continually evaluated against society’s contemporary application of labels. Many unequivocally harmful labels began as benign medical terms but later became paired with damaging connotations, so the alternatives we have provided now may later need to be modified. Additionally, the alternatives provided are not exhaustive, and we suggest that researchers choose the most appropriate systems-centered modifications for their specific studies, populations, and countries.

Context-based Reporting

When we do not examine racism and its effects, troubling assertions of unmeasured biological or genetic reasons for racialized differences¹⁹ in pain outcomes can occur as described in papers 1 and 2 in this series (Morais et al., in this issue⁹⁶; Letzen et al., in this issue⁸⁵). This practice can have a devastating influence, such as White medical students and residents holding false, fantastical beliefs related to innate biological reasons for racialized differences in pain perception.⁶⁸ With regard to culturally and community sensitive reporting, using an antiracism framework can begin with authorship. Some, primarily qualitative-focused and nursing journals (eg, *Advances in Nursing Science*), have manuscript

authors include positionality statements with content that can reflect the author/s characteristics (eg, nationality, demographics) or culture (eg, personal life experiences)⁶⁹ to understand how identity may influence the design, interpretation, and reporting of study outcomes. Some quantitative-focused journals (eg, the *Journal of Social and Personal Relationships*) are also now encouraging authors to make this shift. We advocate for this change in pain-focused journals as well, as it helps authors and readers recognize power and privilege and supports reflection of the contribution to bias and subjectivity.²² However, because this choice may be more complicated for people of marginalized and hidden identity categories, solidarity from those with privileged identities along with support from editors from pain focused journals would help with this transition. To demonstrate 1 way to adopt this practice, the authors of this 3-part series have included positionality statements in Morais et al., in this issue.⁹⁶

Precision in terminology along with clear, consistent definitions, operationalizations, and differentiation of the constructs of racialized identity and culture aid comprehension.⁸⁷ As this may differ between countries, it can be as simple as stating the exact definition of “race” (ie, Black or White people) or ethnicity (eg, ancestry, religion) used in the study, how and why this term was derived (eg, USA National Institutes of Health reporting guidelines), and a description of the methods used to obtain the data (eg, participant self-report). Justifications must be included, and we should no longer accept poor or absent explanations for missing data pertaining to “race.” Underscored by Buchanan et al. (2021), we need to report “race” of *all* study participants as ignoring or reporting for only 1 group upholds Eurocentric hierarchies and practices. Even when the racialized identity of all groups is reported, it is commonplace to see the White sample at the top, followed by categories of racialized groups. This grouping can be explained because the White sample is the largest, but it can also denote that White individuals are first in our social hierarchy. Instead, authors should consider listing groups alphabetically.

Our citation styles (eg, APA, MLA) are also designed to capture Western knowledge, making it harder to incorporate Indigenous Peoples oral teachings into peer-reviewed articles. Current practice cites these oral traditions and ways of knowing as personal communications akin to a phone call with a colleague.⁸⁹ Perhaps unwittingly, this results in a scholarly denial of oral histories. To increase the ability of scholars to include the expertise of Indigenous Elders and Knowledge Keepers, Lorisia MacLeod has created citation templates so that Indigenous oral history can be presented as an equal and valid form of information.⁸⁹ As we engage Indigenous advocates and patient voices into pain science, it will be important to utilize these templates and other appropriate resources to demonstrate respect for these revered teachings.

When results are discussed and implications considered, evaluation through an antiracism lens can be facilitated by examining the larger systems, policies, and

social conditions that contribute to study outcomes (eg, access to healthcare).⁹¹ If results specific to individuals from racialized groups are assessed, highlighting strengths (eg, protective factors of community pride and family cohesion) and areas of parity with White participants whilst recognizing the role of intersectionality – how holding multiple marginalized identities (eg, Black and immigrant) influences experiences interactively and inseparably – will contextualize findings.⁹⁴ With regard to study limitations, pain researchers defend and discuss the limitations of all aspects of our research design and analyses. We advocate that the same care and attention be extended to antiracism practices so that these practices and self-critique of our work through an antiracism lens become the norm for research dissemination across all pain disciplines.⁴⁹ Toward this end, antiracism guidelines are beginning to be included in author instructions at academic journals (eg, Palermo et al. 2021¹⁰⁶) and are being developed by the Antiracism Coalition in Pain Research (*ACTION-PR*) (co-authors in this series) for submission to pain specific journals. Ultimately, researchers who have engaged with racialized groups and included them fully in the research process in the ways we have suggested will be better positioned to discuss racialized lived experiences, including how experiences of racism impact pain outcomes. This will be particularly important for dissemination to the broader community of pain research stakeholders.

Dissemination to Broad and Diverse Audiences

Our current dissemination model rewards sharing our findings with other scholars in similar disciplines in a specific, circumscribed manner (ie, publications, conference proceedings). Changes to this model include viewing communities and stakeholders in the population of focus as the primary audience. Putting the population of focus at the center and enabling them to be the protagonists in their stories will support engagement. There is no 1 way or approach to support antiracism dissemination, but to build trust, it can include sharing findings with participants and communities through presentations, videos, newsletters, health fairs, and social media. Results should be shared in clear language without jargon whilst acknowledging systemic injustices that contribute to disparities. Researchers should also consider if they are the best communicator of findings or whether a colleague or community stakeholder can best deliver the message. Other innovative options include holding a town hall meeting, educational videos on video-sharing platforms,⁶⁵ a data walk or data party,⁹⁷ a gallery of pictures or photographs, or a community play.⁷ Participants or stakeholders can be included as authors on manuscripts and can be part of presentations. Their involvement can help ensure cultural sensitivity, accurate representation, explanations for any phenomena observed in the data from the patient's perspective, and improve the transparency of research findings.

Given the organizational barriers of translating pain research findings into adoption and practice, dissemination to clinical sectors is critical. Public health researchers have shared numerous lessons learned regarding the dissemination of research to clinical practice audiences. Brownson et al. (2018) highlight that stakeholder engagement enhances dissemination along with messages that arouse emotion and establish usefulness.²¹ They indicate that passive interventions are largely unsuccessful because uptake does not happen spontaneously, that dissemination needs to be time-efficient, consistent with the organization and aligned with the skills of staff members, and our measures of academic impact can differ significantly from the markers of importance of clinical practice audiences.²¹ For pain scientists, when developing dissemination materials for clinicians and primary care providers, they could identify and prioritize key information to increase the likelihood of adoption. Emphasis could be placed on the accumulation of pain management protocols and incorporating the narratives of patients from racialized groups that generally have limited dissemination into clinical practice settings. Finally, non-clinician healthcare leaders may be most interested in interventions and services that are cost-neutral, cost-saving, and revenue generating, but promoting equity should also be a key consideration. In the wake of Derek Chauvin's murder of George Floyd, leaders of public and private health care institutions committed to antiracism practices; the uptake of research-tested practices promoting equity would be a concrete way to illustrate this commitment.

Utilizing an antiracism framework, human participant and preclinical pain researchers would have marginalized groups in mind at the conceptualization stage, rather than as an afterthought, which could lead to inventive interpretation and dissemination. For example, this may involve assessing existing data to identify the racialized disparities within the healthcare systems of interest and determining if implementation (eg, fidelity, sustainability) outcomes for racialized groups are similar to those of NHW patients. Instead of using an either and/or approach, a relevant question might be, "How do we investigate antiracism *and* use the knowledge gained to develop a more responsive, equitable, and effective pain treatment *and* maximize the likelihood of adoption into clinical practice?"

Conclusion

This paper concludes our 3-part "*Confronting Racism in All Forms of Pain Research*" series that highlights the critical importance and significant benefits of adopting an antiracism framework across all pain research disciplines. We have advocated for an antiracism framework as, through direct action, it seeks to confront and eradicate racism in our research practices. A shared commitment to an antiracism framework requires a concerted shift from our usual hierarchical academic and health care practices to a rebalancing that positions communities and patients experiencing pain at the center.

Sometimes we will fall short, but intractable problems are not solved by any 1 person, institution, or organization. In this spirit, we hope for future contributions to this series and critical appraisals of our application of the antiracism framework to drive change in pain research and liberation from race-based trauma perpetuated by traditional forms of research.

People from racialized groups often have to be hyper-vigilant of their identity, whilst that same identity means they are ignored or invisible in many spaces. This strange dichotomy also seems to occur in scientific inquiry without considering the policies and structures that drive observed differences between White and racialized groups. To address these inequities, self-examination and cultural humility are essential to understand one's position and role within the dominant system. Additionally, there needs to be a sustained effort to diversify research environments and combat deep-rooted institutional racism; a commitment to establish, develop, and maintain community partnerships with individuals from racialized groups; and to encourage change in our use of language and dissemination practices so that we do not stigmatize racialized groups or reproduce oppressive forms of power.²⁹

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Making these changes will increase equity in the research process and produce generalizable data that can be credibly communicated to community members and policymakers and, ultimately, translate into equity in pain care.

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