Strategies for and Barriers to Collaboratively Developing Anti-racist Policies and Resources as Described by Geoscientists of Color Participating in the Unlearning Racism in Geoscience (URGE) Program

Carlene Burton[1], Gabriel Duran[2,*], Vashan Wright[1,3,*], and Rebecca Chmiel[3]

[1]University of California San Diego, Scripps Institution of Oceanography, La Jolla, CA, 92037
[2]University of Quebec at Montreal, Montreal, Quebec, Canada
[3]Woods Hole Oceanographic Institution, Woods Hole, MA, USA, 02543
[*]These two authors contributed equally to the work

Key Points:

- Geoscientists of Color want to continue collaborating with White geoscientists to create and implement anti-racist policy and resources.
- Effective anti-racism collaborations require accountability and adherence to well-designed behavioral codes of conduct.
- Leadership support and re-building trust are critical to successfully implementing anti-racist policies and resources within geoscience.

CRediT author statement: C. Burton: Conceptualization, Methodology, Validation, Supervision, Data Curation, Data Analysis, Writing - Original Draft, Visualization, Project Administration. **G. Duran:** Conceptualization, Methodology, Data Curation, Investigation, Writing-Review Editing, Project Administration, Supervision.**V. Wright:** Conceptualization, Methodology, Validation, Formal Analysis, Investigation, Data Curation, Resources, Writing-Review Editing, Visualization, Supervision, Project Administration, Funding Acquisition. **R. Chmiel:** Data Curation, Data Analysis, Writing-Review Editing, Visualization.

Corresponding author: Carlene Burton, `c1burton@ucsd.edu`

Abstract

The Unlearning Racism in Geosciences (URGE) program guides groups of geoscientists as they draft, implement, and assess anti-racist policies and resources for their workplace. Some participating Geoscientists of Color (GoC) shared concerns about microaggression, tokenism, and power struggles within their groups. These reports led us to collect and analyze data that describe the experiences of GoC in URGE. The data are from five discussion groups and two surveys. Our analyses revealed that participating GoC want to continue working with White colleagues on anti-racist work. GoC want White colleagues not to shy away from doing anti-racist work. Instead, GoC want White colleagues (1) to create and adhere to robust behavioral codes of conduct, (2) to focus discussions on anti-racism, (3) to act on anti-racism initiatives, (4) not to prompt GoC to educate them or reveal trauma, and (5) to refrain from microaggressions and tokenism. These desired outcomes were achieved in some groups with varying degrees of success. Correcting a history of mistrust relating to racism and anti-racism action is key to implementing and assessing effective anti-racist policies and resources. This requires leadership support, following through on anti-racism action, and deepening relationships between GoC and White colleagues. Future anti-racist programs should spend a substantial amount of time on and demonstrate the importance of training participants how to discuss racism effectively and how to create and adhere to robust behavioral codes of conduct. Future programs should also explore developing a robust program-wide code of conduct that includes a policy for reporting offenses.

1 Introduction

Geoscience has a racial diversity and racism problem. The discipline has experienced marginal growth in the number of Black, Indigenous, and Other People of Color (BIPOC) who enter and remain compared to several other STEM disciplines (e.g., mathematics, chemistry, and physics) (Keane, 2018). The number of People of Color receiving a Ph.D. in geoscience has not significantly increased in at least 40 years (Bernard & Cooperdock, 2018). Between 1973 and 2016, ~90% of the students receiving doctoral geoscience degrees were White (Bernard & Cooperdock, 2018; Wilson, 2018). Between 2010 and 2019, only 7% of the students who received a doctoral geoscience degree were People of Color (Beane et al., 2021).

Geoscientists have tried to solve racial diversity and racism issues in various ways. Our examination of initiatives funded by the National Science Foundation indicates that geoscience racial diversity initiatives primarily focus on educating White geoscientists about the effects of racism on Geoscientists and Students of Color, creating additional geoscience opportunities that only People of Color should apply to and benefit from (e.g., internships, scholarships, and fellowships), and creating affinity groups for existing Geoscientists of Color (GoC). In 2021, several groups spent approximately 5-7 days highlighting and discussing the scientific contributions and experiences of GoC (e.g., Black in Geoscience, Atmospheric, and Marine Science Weeks). Other groups, such as the Unlearning Racism in Geoscience (URGE) program, focussed on helping geoscientists use journal articles, information from interviews with anti-racist experts, and the participants' personal experiences to discuss and draft anti-racist policies and resources for their workplaces. Regardless of their nature and aims, the success of many anti-racist geoscience programs partly depends on White geoscientists and GoC collaborating successfully. An important question is whether such collaborations are occurring in ways that support versus hinder anti-racism progress, including whether the emotional exhaustion that GoC sometimes report during these conversations is minimized.

This study makes progress in assessing the effectiveness of collaborations between White Geoscientists and GoC by summarizing and analyzing the experiences of GoC that

collaborated with White geoscientists to create anti-racist policies and resources during the URGE program. In this study, we define effective collaborations as those that achieve their goals, reduce unnecessary conflict between participants, do not cause substantial emotional harm or exhaustion to participants, and where all participants feel free to speak without fear of reprisals. The responses of GoC in URGE likely represent the geoscience population because the program has engaged a substantial portion of the geoscience population, 3920 geoscientists at 310 academic institutions, federal agencies, non-governmental organizations, and professional societies. Our data are from discussion groups and surveys. We report on the elements that contributed to effective collaborations and those that caused potential harm.

2 Background

Effective conversations and collaborations about racism in multiracial groups (heterogenous grouping of People of Color and White people) are needed to design policies and resources that limit the harmful effects of racism in the workplace. Known benefits of the conversations include a) acceptance of more diverse opinions, b) developing a deeper understanding of racism, and c) identifying new and practical solutions to racism (Cropp, 2012). Racism conversations may be uncomfortable (Sue & Constantine, 2007; DiAngelo, 2018) for several reasons. White people sometimes have a fear of appearing racist and may become hesitant to acknowledging their biases and privileges (Sue & Constantine, 2007; Todd & Abrams, 2011; Sue, 2013). White people sometimes use language that minimizes or trivializes the effects of racism on People of Color (Sue & Constantine, 2007; Todd & Abrams, 2011). Seemingly abrupt introductions of racism in conversations sometimes cause White people to become silent in discussions (Sue, 2013; DiAngelo, 2018) and or experience difficulties expressing their thoughts. White people sometimes become defensive in conversations about race and racism, especially if they feel that their worldviews and perspectives are being threatened (Sue, 2013). Feeling threatened can lead to one-sided conversations — i.e., one person doing most of the talking, which usually involves repeatedly stating positions on the topic with increasing intensity (Sue, 2013). White people sometimes equate race issues with gender concerns (Sue, 2013); this may occur due to a relative (compared to People of Color) incomplete understanding of systemic racism (DiAngelo, 2018). White people may avoid the topic of race, which People of Color may misconstrue as a lack of interest (Sue, 2013; DiAngelo, 2018; Dutt, 2020). Race and racism conversations can also evoke strong emotions that may cause White people to seek to change the topic (Sue, 2013; DiAngelo, 2018). These barriers to effective dialog can hinder the design and implementation of anti-racist policies and resources.

Strategies for promoting effective conversations and collaboration between People of Color and White people have been explored by previous research. Behavioral codes of conduct, herein defined as guidelines that govern decision-making and how members of a group behave when working together (Kaptein & Schwartz, 2008; Adams & Tourani, 2017), can help to facilitate more inclusive discussions (Tittler & Wade, 2019). Depending on the scope and goals of the group, codes of conduct may include but are not limited to methods for preventing harassment, keeping members accountable to agreed-upon behaviors, reporting offenses, recruiting new members, dealing with tardiness/absenteeism, and solving conflicts of interest (Miller & Donner, 2000; Sue, 2013; Kaptein & Schwartz, 2008; Adams & Tourani, 2017; Tittler & Wade, 2019). Frequent reminders of the codes of conduct help participants adhere to the codes of conduct (Miller & Donner, 2000; Sue, 2013; Tittler & Wade, 2019). A skilled moderator capable of redirecting conversations with an unbiased desire to accomplish the conversation's goals often helps the group achieve its goals (Miller & Donner, 2000; Sue, 2013; Kaptein & Schwartz, 2008; Adams & Tourani, 2017; Tittler & Wade, 2019). Training on discussing racism can help improve the conversations (Sue, 2013). White participants are generally more helpful in conversations

Table 1. The table provides broad descriptions of the topics covered and the deliverables (i.e., anti-racist policy or resources) that participants drafted during URGE. Details for each session or educational unit (i.e., papers read, instructions for creating the deliverables, interviews, etc) are on the URGE website: https://urgeoscience.org/curriculum.

| Session Number	Topic	Anti-racist Policy or Resource	Inclusivity Tip
1	Racism and Definitions	Pod Guidelines	Finding Your Voice
2	Racism and Individuals	Dealing with Complaints	Why Pronouns
3	Racism and History	Analyses of Program Demographics	Finding Your Community
4	Racism and Justice	Working with Communities of Color	Land Grab Acknowledgement
5	Racism and Accessibility	Admissions and Hiring Polices	Improving Equity in Departmental Policies
6	Racism and Inclusivity	Safety Plan	Nominations for Awards
7	Racism and Self Care	Resource Map	Self Care, Mental Health, & Emails
8	Racism and Accountability	Deliverables Management Plan	Creating Institutional Change

about racism if White participants are aware of their racial biases (Tittler & Wade, 2019) and of the many forms of racism and microaggressions that jeopardize the livelihood and mental health of People of Color (Miller & Donner, 2000). Leaders can also bolster anti-racist activities by providing financial resources and engaging in racial bias training (Dutt, 2020). Recognizing the need for effective collaborations during the design of anti-racist policies and resources, URGE incorporated some of the strategies described above (i.e., behavioral codes of conduct that establish ground rules for discussion, signed agreements with leaders, reminders that groups should focus the conversations on anti-racism, and training through journal articles and oral presentations). Our study assesses whether these strategies promoted effective collaborations between participants.

3 Study Setting

3.1 Description of URGE

URGE has four primary objectives. They are to (1) deepen the geoscience community's knowledge of the effects of racism on the participation and retention of People of Color in the discipline, (2) draw on existing literature, expert opinions, and personal experiences to develop anti-racist policies and resources, (3) share, discuss, and modify anti-racist policies and resources within a dynamic community network and on a national stage, and (4) implement and assess anti-racist policies and resources within geoscience workplaces. Participating groups (referred to as pods by the program) have created anti-racist policies and resources, but most have yet to implement the policies and resources within their workplaces. The program interchangeably refers to policies and resources as deliverables.

URGE invited geoscientists to form pods associated with an organization or academic unit; these pods serve as their discussion and anti-racist policy and resource drafting groups. Pods participated in eight two-week educational units named racism and definitions, racism and individuals, racism and history, racism and justice, racism and accessibility, racism and inclusivity, racism and self-care, and racism and accountability (Table 1). During the units, pods used 1-3 (most times 2) URGE-provided journal articles, expert oral presentations and interviews, and their group discussions to draft a behavioral code of conduct (referred to as pod guidelines in the program) for their discussions, six anti-racist policies and resources, and a plan to manage the implementation and assessment of their policies and resources. URGE instructed pod members to read the journal articles during the first week of each unit. The oral presentations occurred on the Monday of the second week. URGE instructed pods to dedicate 1-2 hours during the second week of each unit to pod discussions and drafting of the policies and
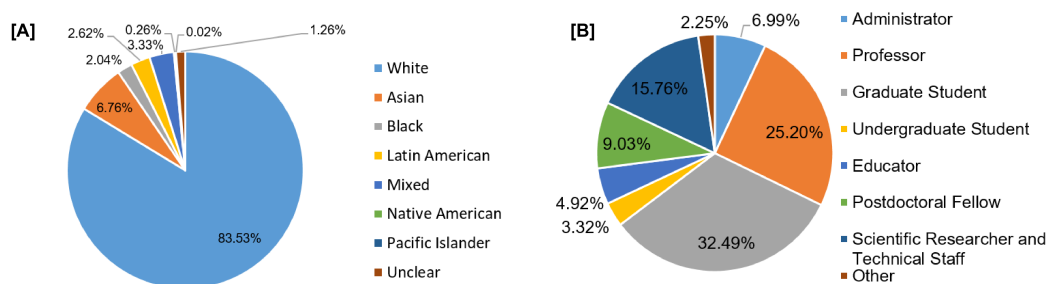
Figure 1. Pie charts show the race and career positions of all URGE participants.

162 resources. URGE provided guidance and suggestions for what to include in the anti-racist
163 policies and resources. URGE uploaded recordings of the oral presentations on its web-
164 site. The pod guidelines/codes of conduct describe norms and ground rules for pod dis-
165 cussions, making group decisions, and assigning roles and responsibilities; the URGE-
166 provided instructions for designing pod guidelines/codes of conduct are included in the
167 supporting information (Supporting Information S01). The six policies and resources fo-
168 cussed on (1) tracking, displaying, and generating demographics information, (2) admis-
169 sions and hiring practices, (3) safety plans for field and lab work, (4) handling complaints
170 about racism, (5) working with communities of color, and (6) asset mapping of resources
171 for GoC (Table 1).

172 Each pod submitted its policies and resources to be shared on the URGE website
173 so that all pods could see, discuss, and learn from each other. URGE required pods to
174 sign an agreement with their workplace leaders. Pods and their leaders agreed to have
175 at least three meetings to discuss the implementation and assessment of the policies and
176 resources that the pods drafted. In addition to these activities, URGE also hosted five
177 BIPOC-only Zoom discussion groups that provided networking and safe spaces for GoC
178 to discuss their experiences in the program and outline what they want in the anti-racist
179 policies and resources. URGE administered a survey to all participants (an URGE-wide
180 survey) in June 2021 and another survey to only participants who self-identified as a Per-
181 son of Color (BIPOC-only survey) in November 2021. This study focusses on the com-
182 ments and responses made by GoC who participated in the BIPOC-only discussion groups,
183 URGE-wide survey, and BIPOC-only survey.

3.2 URGE Participants

185 URGE registered 3920 participants, separated into 310 pods (Figure 1). Pods pri-
186 marily represented institutions of higher learning, professional scientific societies, and
187 federal agencies. URGE participants were mainly living in the United States. Partici-
188 pants' career positions included administrative staff, professors, graduate students, un-
189 dergraduate students, postdoctoral researchers, scientific researchers, and technical staff
190 (Figure 1B). The participants' races are Black (2.04%), Asian (6.76%), White (83.53%),
191 Hispanic/Latinx (2.64%), Mixed-race (3.33%), Native American (0.26%), and Pacific Is-
192 lander (0.02%); 1.26% of respondents did not disclose their race (Figure 1A). Participants
193 primarily identified as women (63%); 22% were men and 5% were gender non-conforming.

Table 2. Table lists attendance at the BIPOC-only discussion group sessions. We did not tally attendance for April 2021.

Month	Attendance
March	50
April	-
September	31
October	24
November	6

3.3 Discussion Groups and Survey Participants

Black and Brown members of the URGE team hosted the five BIPOC-only discussion group sessions. The discussion group session dates were March, April, September, October, and November 2021. The attendance ranged from ∼50 in March to 6 in November (Table 2). After introductions or a talk by an anti-racism expert, attendees separated into Zoom breakout rooms to discuss questions posed by the URGE team (Table S1).

One-thousand and fifty-one participants completed the URGE-wide survey: 636 women, 217 men, 49 gender non-conforming individuals, and 103 individuals who did not disclose their gender. Of the 1051 respondents, 25% were professors, 6.99% administrators, 15.76% scientific researchers and technical staff, 4.92% educators, and 32.49% graduate students. Eighty-three percent were White, 2.62% Black, 6.76% Asian, 2.62% Latin American, 3.33% mixed race, 0.36% Pacific Islander, and 0.65% did not answer.

Fifty-two URGE participants who self-identified as People of Color completed the BIPOC-only survey. Respondents were 69.57% women, 21.75% men, and 2.17% gender fluid/agender/non-binary; 2.17% of respondents did not disclose their gender. Nine percent had some graduate school experience, 67.44% had a Ph.D., 11.63% had some doctoral studies, and 4.65% had a Master's degree. Survey respondents' roles in their pods included regular participants (68.89%), pod leaders (13.33%), and rotating pod leaders (17.78%).

4 Methods

We used the five BIPOC-only discussion groups, URGE-wide survey, and BIPOC-only survey to collect information about the experiences of GoC in URGE pods. We isolated then analyzed the responses of GoC who completed the URGE-wide survey. Participants used Jamboards (Google's virtual collaborative whiteboard) to take notes during the discussion groups. Participants only added discussion group comments that were either unopposed or agreed to by all group members. We selected what we considered to be recurring and noteworthy comments from the discussion groups, then used the BIPOC-only survey to evaluate the degree to which other GoC agree with the selected comments. We conducted this study with Institutional Review Board approval (Project 210603XX) from the University of California San Diego.

4.1 URGE-wide Survey

The URGE-wide survey (Supporting Information S02) sought to assess what inspired people to participate in the program, what their experiences in the program were like, and how they believe the program could be improved. We designed the survey in

collaboration with a team at the Science Education Resource Center (SERC). We outlined to the SERC team the purpose of the survey and the hypotheses we wanted to test. We also provided the SERC team with a list of questions that we believed would achieve the survey's goal and test our hypotheses. The SERC team then drafted new questions and rephrased or removed existing questions to limit biases and map questions onto specific hypotheses. The URGE-wide survey had 72 Likert scaled questions whose answers ranged from 'strongly disagree' to 'strongly agree' (see Supporting Information S02 for relevant survey questions). The survey also included five open-ended questions so that participants could provide open-ended feedback to more complex questions.

We validated the survey questions by emailing them and requesting feedback on clarity from 25 randomly selected participants. We weighed the participant selection by race so that the subgroup of people validating the survey questions statistically represented the racial demographics within the population of URGE participants. We asked participants to fill out the survey questions. Along with the survey questions, we also included four additional questions that asked participants to indicate whether they found any of the survey questions ambiguous and confusing (see Table S2). Participants did not report finding any of the survey questions confusing or vague. Thus, we assessed that most participants likely interpreted the survey questions accurately.

Survey administration included informing participants of their legal rights and the survey's purpose. Survey administration also included minimizing the time between the end of the programmatic activities being assessed and when participants completed the surveys. We informed participants of the survey's purpose and rights via messages at the top of the survey, Twitter, URGE-wide Zoom events, and emails. We administered the surveys four days after receiving comments from the sub-group of participants who helped to validate the questions. Most respondents completed the survey within ∼30 days after the last URGE-wide activity. Survey respondents consented to participate in the study before answering the questions.

4.2 Discussion Groups

The Zoom breakout discussion group sessions provided data on what GoC believed worked or did not work well in the program and what barriers exist to drafting, implementing, and assessing anti-racist policies and resources. At least one URGE team member drafted the questions for each discussion group session. The rest of the URGE team then edited the questions for clarity, concision, and alignment with the discussion group's and or this study's goals. Questions for the BIPOC-only discussion group session are in Table S1. During the session, an URGE team member first explained the purpose of the discussion questions, then randomly assigned 3-4 people per breakout group. October's session included an expert who presented how to take care of oneself if and when a person experiences racism. The expert's presentation occurred before the breakout group discussions. Each breakout group received a Jamboard page with the discussion questions and an URGE team member visited each group to answer questions relating to the discussion questions. The URGE team encouraged participants to speak freely when answering the questions and discussing other related topics. Each group had at least one volunteer note-taker who recorded responses on the group's Jamboard. Participants had 40-60 minutes for discussions.

We coded the comments to identify significant themes. We first compiled all the responses, arranging them by educational units (Table 1) and questions. We read the questions and responses to get an overview of the responses. We assigned general codes (i.e., descriptions of the themes) such as 'White participants' actions' and 'challenges.' We described each initial code, then reread the responses focusing on more details. This rereading for details helped us assess how each response aligns with the code descriptions. This process also led us to eliminate or merge some of the coding titles; for example, 'chal-

lenges' became 'challenges within pods' and 'White participants' actions' became 'leadership accountability' and 'expectations for White participants.' We iteratively repeated this coding process until all responses were well categorized in as few codes as possible.

4.3 BIPOC-only Survey

The BIPOC-only survey presented respondents with 19 direct comments (some edited for minor typos, grammatical errors, and or readability) made by GoC during the discussion groups and on the URGE-wide survey (Supporting Information S03). The BIPOC-only survey asked participants whether they strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the comments. We selected the 19 comments for further assessment because they were made by multiple GoC and seemed more provocative than the other comments. We informed participants of the survey's purpose via a message at the top of the survey and in the survey invitation email.
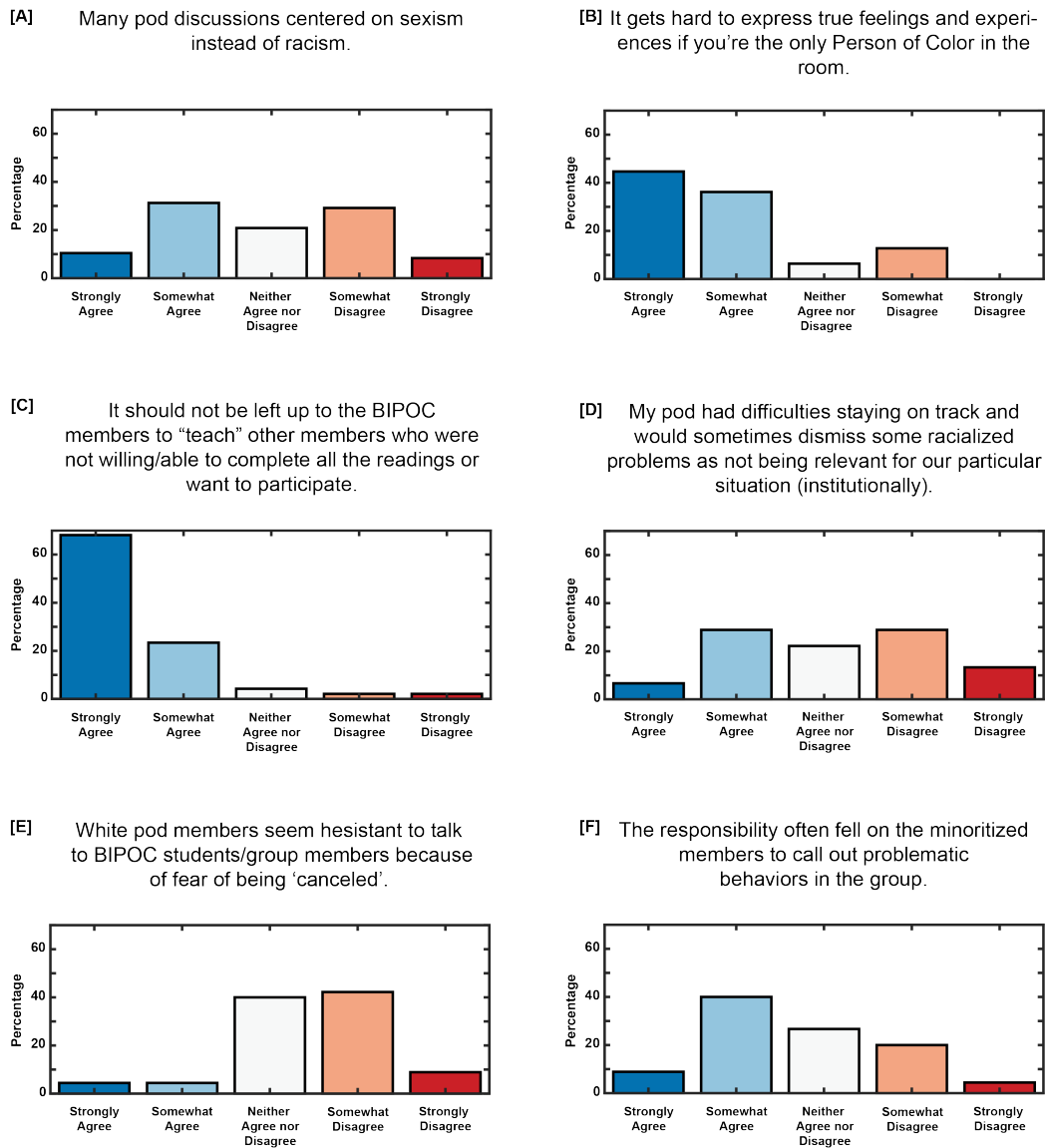
5 Results

We identified five themes within the survey and discussion group comments. The themes are (1) challenges within pods, (2) requests for more leadership accountability, (3) expectations for White participants, (4) optimism, caution, and skepticism, and (5) comments for URGE. The five themes highlight that GoC remain cautious and optimistic about anti-racism progress and want more accountability during anti-racism conversations.

5.1 Challenges within Pods

Some GoC reported that unequal power distributions influenced pod discussions and decisions (Figure 2). Fifty-one percent of surveyed GoC felt "forced to accept pod norms" because White participants outnumbered them; 15.55% disagreed or strongly disagreed with this comment, and 33.33% neither agreed nor disagreed. Most (77.77%) GoC either agreed or strongly agreed that having all-White leadership poses "a challenge in effective discussions and tangible actions." Notably, 36.17% of the surveyed GoC agreed or strongly agreed that White women's leadership silenced or muted the contributions of Students of Color; 10.64% strongly disagreed.

Regarding microaggressions, 20.00% strongly agreed that microaggressions were unaddressed, and 13.33% strongly disagreed. Approximately 30.00% of surveyed GoC agreed that their pods had "difficulties staying on track and would sometimes dismiss some racialized problems as not being relevant for [their] particular situation"; 28.00% disagreed (Figure 2D). There was a division among GoC on whether inequalities (e.g., some participants being direct subordinates of others) "hindered the ability to discuss difficult issues;" 35.56 % strongly agree or agree versus 28.89% disagreeing and 13.33% strongly disagreeing.

Discussion group comments also indicate that some GoC experienced challenges relating to power dynamics. One individual commented that it was exhausting to share vulnerable experiences. Participants acknowledged that it might be difficult for White people to understand lived experiences from a perspective they will never have. One person noted that there should be recognition of intersectionalities – i.e., "[W]hite female experiences are not the same as [People of Color] female experiences." Another GoC shared that the burden to do the work in the pods most often fell on women; this should not be the case. Some GoC routinely find solace among family activities and conversations as a respite from exhaustive anti-racism work.

[A] Many pod discussions centered on sexism instead of racism.

[B] It gets hard to express true feelings and experiences if you're the only Person of Color in the room.

[C] It should not be left up to the BIPOC members to "teach" other members who were not willing/able to complete all the readings or want to participate.

[D] My pod had difficulties staying on track and would sometimes dismiss some racialized problems as not being relevant for our particular situation (institutionally).

[E] White pod members seem hesitant to talk to BIPOC students/group members because of fear of being 'canceled'.

[F] The responsibility often fell on the minoritized members to call out problematic behaviors in the group.

Figure 2. Bar charts shows some of the selected responses from GoC describing their experiences during pod discussions.

5.2 Leadership Accountability

Participating GoC believe that obtaining leadership support is key to successfully implementing anti-racist policies and resources. All surveyed GoC agreed that accountability "has to come from the top, [which is] hard when the people at the top are White." In the discussion groups, one GoC expressed a lack of trust for graduate faculty to continue "anti-racism work without someone to hold them accountable" and commented that institutional progress in effecting change is too slow. Another concern raised in the discussion groups is that some participants felt little or no interest from institutional departments to "mov[e] towards a culture of inclusivity and anti-racism." Multiple GoC attending the discussion groups also feared that it was too easy to take advantage of loopholes in the Title IX Education Amendment and Title VII of the Civil Rights Act of 1964. These GoC noticed that repeat offenders of gender and racial discrimination are often

in positions of power and continue to receive awards and grant funding despite being reported for these offenses. GoC lament that anonymity is not guaranteed when reports of offenses occur, leading reporters to fear reprisals, especially if they are subordinates of the offenders. None of the above comments were challenged or refuted by a GoC who attended the discussion groups.
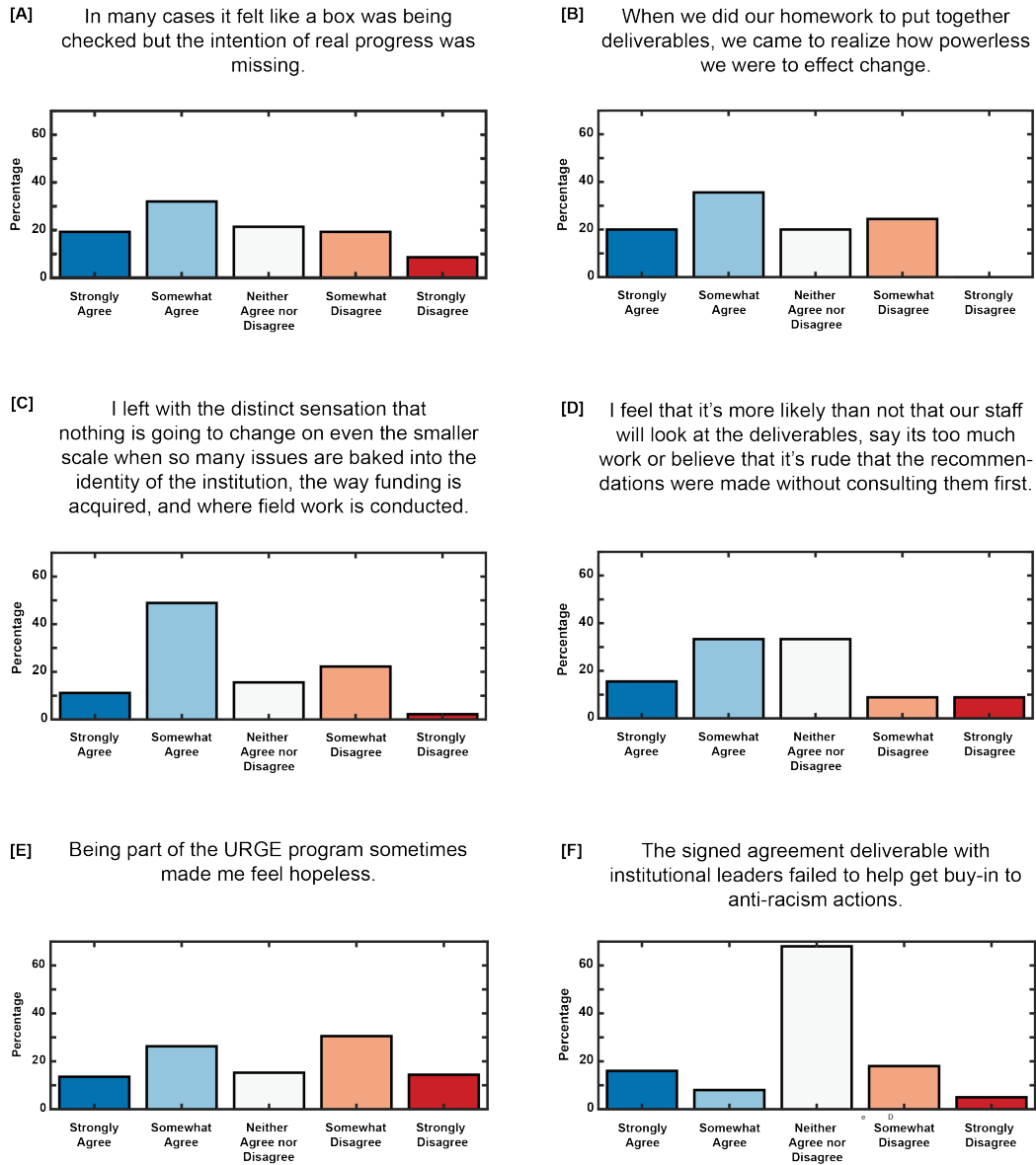
5.3 Expectations for White Participants

GoC want White participants to listen more, follow through on actions, and remain focussed on anti-racism. One shared sentiment was that White people must "accept that things MUST change, and it includes THEM doing WORK." In essence, White people should be willing to do the work to support anti-racist policy creation, implementation, and assessment. Talking without action is counterproductive to the work to be done. GoC encouraged White participants to listen more and not center the conversations on White people's experiences (Figure 2). GoC shared that it helps when White individuals are aware of the various microaggressions that GoC often experience. It also helps when White Geoscientists are more open to "transferring the social climate of openly discussing racism and discrimination within the department." "Some [W]hite participants who think they know better now are overly zealous in trying to catch [GoC] who are not Black or Indigenous on mistakes" is an additional comment shared. Another discussion group comment, although challenged by some GoC, was that some White faculty participants seemed "afraid to talk to BIPOC students, afraid of 'cancel culture (44.22% disagreed)', won't join events if they know certain BIPOC students will be there, and won't lead discussions" (Figure 2E). For the future, participating GoC suggest "hav[ing] [an] anonymous form for members to fill out when something [offensive] happens!"

5.4 Optimism, Caution, and Skepticism

Participating GoC are hopeful yet skeptical about whether URGE will lead to real change (Figure 3). Forty-eight percent feared that non-URGE participants would view the recommendations from the deliverables as too much work and or have adverse reactions because they were not involved in the decision-making process (Figure 3D). While GoC participants were pleased with their participation, 48.89% and 11.11% agreed and strongly agreed, respectively, that nothing much will change since "so many issues are baked into the identity of the institution, the way funding is acquired, and where fieldwork is conducted" (Figure 3C). Similarly, 73.33% were generally cynical about real progress; 2.22% strongly disagreed that they felt cynical about real change.

5.5 Comments for URGE

GoC participants shared their appreciation for URGE and offered suggestions for improvement and the program's long-term success. Seventy-eight percent of GoC who completed the URGE-wide survey agreed that anti-racist policies and resources should be crowd-sourced from the geoscience community and that the program provided relevant information for participation. Sixty-eight percent of GoC who completed the URGE-wide survey also agreed that the deliverables are transferable into policy for their departments and institutions. One GoC who responded to the URGE-wide survey was excited that their workplace now have a DEI (diversity, equity, and inclusion) committee and monthly town hall to discuss racism partly because of URGE. Another GoC was excited by the realization that "grad[uate] students have more power than previously realized." Participating GoC appreciated and hoped for more BIPOC-only discussion group sessions. Two comments shared were "I really appreciated the emphasis on action, and I felt that the students and postdocs and (a small number of) faculty and staff who got involved were very committed and enthusiastic" and "I enjoyed the program and appre-

[A] In many cases it felt like a box was being checked but the intention of real progress was missing.

[B] When we did our homework to put together deliverables, we came to realize how powerless we were to effect change.

[C] I left with the distinct sensation that nothing is going to change on even the smaller scale when so many issues are baked into the identity of the institution, the way funding is acquired, and where field work is conducted.

[D] I feel that it's more likely than not that our staff will look at the deliverables, say its too much work or believe that it's rude that the recommendations were made without consulting them first.

[E] Being part of the URGE program sometimes made me feel hopeless.

[F] The signed agreement deliverable with institutional leaders failed to help get buy-in to anti-racism actions.

Figure 3. Bar charts show some selected responses to questions relating to optimism, caution, and skepticism that GoC feel about anti-racist change within their workplace. Data are from both BIPOC-only and URGE-wide surveys.

ciated the methodical format and delivery of the program." "I also appreciated that it was a sustained effort over several weeks instead of the one-and-done training approach typically used to deliver DEI content at institutions across the country" was also a comment shared.

From the discussion groups, some additional suggestions for URGE are to:

1. Explore limiting pod size – the suggested size could vary across institutions.
2. Continue providing self-care guidance for participating GoC.
3. Provide legal advice and suggestions for implementing policies and resources.
4. Advocate for compensation and additional recognition for work done in URGE and similar programs; the work should have products and outcomes that can be included on C.V.s and considered during career promotion and hiring deliberations.
5. Use storytelling, videos, and social media to highlight the work done by pods.
6. Provide additional guidance on good practices for refocussing discussions and redirecting negative comments.
7. Provide a GoC mentoring program since many institutions are missing this.
8. Provide mediators for anti-racism conversations within the workplace.
9. Provide a description of the purpose for each anti-racist policy and resource on instructions for drafting the anti-racist policy and resource. A description of the purpose for the policies and resources should remind participants why it is essential to work on these policies and resources.

6 Discussion

We now describe our most robust interpretations, considering the study's limitations. The sample size for the BIPOC-only survey is relatively small; there were 52 respondents from a pool of 462 participants who self-identified as a GoC, compared to the 119 GoC who responded to the URGE-wide survey. It is unclear whether the responses to the BIPOC-only survey represent the average views of participating GoC; however, the relatively smaller sample size does not diminish the significance and relevance of the answers. These are real experiences of people. A lack of opposition to specific discussion group comments may not represent a consensus in the discussion groups, despite participants reporting that they felt more open to speaking their minds in BIPOC-only discussion groups. Finding direct causal relationships between the experiences of GoC and the intervention strategies promoted by URGE (e.g., pod codes of conduct) is also challenging given the diversity of pod experiences and our desires to keep responses anonymous – i.e., the comments should not be directly identifiable to a pod or individual. Some of the BIPOC-only survey statements were also compound and complex; a respondent may agree with only parts of the sentence, making it challenging to select just one response (e.g.agree, strongly agree, or disagree). Considering these limitations, our primary interpretations are that, despite the expectation that White geoscientists will make mistakes, GoC want to continue collaborating with White geoscientists to create real antiracist change within the discipline. These collaborations need to happen in healthy ways – i.e., ways that reduce the mental exhaustion and frustration that GoC sometimes experience when collaborating with White colleagues on anti-racist initiatives.

Consistent with other studies (Miller & Donner, 2000; Sue, 2013; Tittler & Wade, 2019), our findings suggest that effective anti-racist conversations begin with strong codes of conduct, which participants need to adhere to. URGE intended for the pod's codes of conduct to help reduce or prevent tokenism, microaggression, and unfocussed conversations. The hope was that, by reducing these unwanted behaviors, the emotional exhaustion that GoC sometimes feel during conversations about race would be reduced.

Despite all pods having codes of conduct, some GoC experienced one or more of these unwanted behaviors and emotional exhaustion within their pods. Observations that some GoC request anonymous ways to participate in the conversations reveal that power dynamics and a fear of retribution were also barriers to free-flowing discussions. It is tempting to argue that these behaviors occured because the URGE-provided guidelines for developing the pod's codes of conduct did not include suggestions for developing procedures to keep pod members accountable if and when a pod member commits one of the unwanted behaviors described above. The situation is likely more complex. Without examining the details of each pod discussion, it will remain unclear whether GoC who experienced these unwanted behaviors were in pods that did not explicitly restrict the unwanted behaviors in their codes of conduct or did not keep pod members accountable. One way to have encouraged consistency amongst the pods' codes of conduct would have been to provide an URGE-wide code of conduct that includes examples of accountability procedures and directions for handling power dynamics and harassment in pods and the program more broadly. Additionally, we speculate that having more comprehensive codes of conduct alone will not suffice as personal conviction, awareness of what constitutes microagressions, tokenism, and unfocussed conversations, and self-accountability are also likely essential to avoid committing any of the unwanted behaviors described above. Importantly, our interpretations and speculations are supported by other studies suggesting that groups discussing anti-racism should regularly revisit codes of conduct to remind members of their roles as active accomplices in the anti-racism work and that they should appropriately focus the conversations on anti-racism. Mutually agreed-upon standards, with solid adherence policies, help discussants stay focussed (Miller & Donner, 2000; Sue & Constantine, 2007; Tittler & Wade, 2019). To adhere to these codes of conduct, White participants may first need to identify barriers to effectively participating in anti-racist discussions, including acknowledging their White privilege, confronting their fears of being labeled racist, and increasing awareness of the impact of microaggressive language (Sue, 2013; Tittler & Wade, 2019). Adherence to strong and well-defined codes of conduct will thus help create a safer environment for all participants in the conversation, including White participants who are willing to continue having conversations about race (Tittler & Wade, 2019).

Moderators of the anti-racism conversations substantially influence the conversations' effectiveness, and GoC want more well-trained moderators who more evenly distribute their powers. Observations that 51.00% of surveyed GoC felt "forced to accept pod norms," 77.77% believed that white leaders pose a challenge to effective conversations, and 36.17% believed that White women leadership silenced some student voices may lead one to interpret that it is better to always have GoC lead anti-racism conversations. Doing so, however, can exhaust GoC. This is evident in our and other studies. Observations that GoC are sometimes emotionally uncomfortable educating White colleagues about racism, revealing past racial trauma, or doing more work than White colleagues are instructive. These observations are consistent with other studies (Tittler & Wade, 2019) and underscore the need to ensure that anti-racist conversations do not promote emotional harm to People of Color. Revealing or emotionally reliving trauma alongside experiencing emotional exhaustion should not be required for moving conversations forward since there are many examples of racial trauma in the literature and public domain. Alongside possibly producing harm, divulging racial trauma or playing the racism educator role can cause productivity to decrease and communication to break down (Miller & Donner, 2000). More candid conversations may be had in homogeneous groups (like in the BIPOC-only discussion groups) (Miller & Donner, 2000). Still, anti-racist progress may likewise be stalled without effective mixed-race conversations (Miller & Donner, 2000; Tittler & Wade, 2019). Examining the results further, more insights come from the observations that (1) some GoC were a part of groups that were effectively led by White leaders and (2) GoC want White geoscientists to listen more, follow through on actions, and remain focussed on anti-racism; these observations suggest that GoC want White moderators to lead well, instead of shying away from leadership roles. To lead well, mod-

erators of the anti-racism conversations need to be well-trained and kept accountable in real-time, anonymously, and asynchronously. Though not explicitly stated, GoC seem to want moderators to rotate with time. This is indicated by broad concerns over power dynamics, requests for anonymous ways to participate, and exhaustion felt when needing to play educator roles. Some unwanted behaviors may not repeat as frequently with different moderators since different moderators will steer the conversations differently. Like existing studies, our data also suggest that moderators, if White, should acknowledge their racial biases and be aware that participants have unique life experiences that impact their worldviews and perceptions on race, racism, whiteness, or white privilege (Todd & Abrams, 2011; Sue, 2013; Tittler & Wade, 2019; DiAngelo, 2018). A challenge for White moderators is that they may not have the lived experience of racism and may not always (as quickly) identify when tokenism and microaggressions are occurring. Thus, additional anti-racist training and ways to keep all participants in the conversations accountable can help improve the effectiveness of anti-racist conversations.

Deepening relationships and trust between GoC, workplace leaders, and White colleagues can help to inspire confidence in anti-racist work and reduce the exhaustion that some GoC feel during collaborations on anti-racist projects. Here, GoCs' skepticism about whether URGE will lead to substantial anti-racist change, alongside the belief that URGE provided content that adequately supports the motivations for and design of anti-racist policies and resources, is instructive. These observations suggest that GoC prefer anti-racist and diversity initiatives that go beyond training alone; anti-racism training alone does not change the lived experiences of GoC. The observations also imply that anti-racist efforts in geoscience are likely marred by past performative actions, the inaction of White colleagues and leaders, and the historical exclusion of People of Color in the discipline due to racism in academia and the world more broadly. Reports of exhaustion, tokenism, and microaggressions in some groups, alongside GoC's expressed feelings of increased comfortability within the BIPOC-only discussion groups, highlight that trust and familiarity (as they exist in the BIPOC-only discussion groups) are keys to reducing harm. While White colleagues are unlikely to be able to recreate the trust and comfortability of the BIPOC-only discussion groups, White colleagues should nevertheless strive to be trusted accomplices in the work by following through on actions, recognizing that even in the face of mistakes, the work is needed and can be done well when they take advantage of the resources available (i.e., training, existing anti-racism literature, keeping themselves accountable, listening more, more evenly distributing power and resources, and centering efforts on anti-racism).

7 Conclusion

This study identified the key elements that promote or hinder effective collaboration between participating Geoscientists of Color (GoC) and White geoscientists within the Unlearning Racism in Geoscience (URGE) program. Our data are from five BIPOC-only discussion groups, one BIPOC-only survey, and one program-wide survey. Our analyses agree with previous studies demonstrating that prolonged conversations about race should occur after creating comprehensive behavioral codes of conduct that participants adhere to. These codes of conduct will increase the chance of constructive discussions and more equitable decision-making. Periodic reviews of codes of conduct should occur to remind participants of the conversation's goals. Just as necessary is having a facilitator/moderator who upholds equitable standards and treatment of all group members. These facilitators/moderators should be ready to deftly refocus the topic of discussions to anti-racism when needed. GoC sometimes prefer not to be the main people educating their White colleagues about racism. When White people recognize their biases, it is possible to have open conversations, which may lead to self-growth. Consequently, accountability must be an impartial expectation for all involved in the anti-racism work.

There needs to be a systematic change (i.e., improvements) in handling complaints against people who practice racism; these changes may help reduce the levels of mistrust between GoC and their White colleagues. A substantial lesson from this work is that future programs like URGE should emphasize (i.e., spend a substantial amount of time on) training participants how to discuss racism and how to create and adhere to robust behavioral codes of conduct.

8 Data Availability

All data from this work are in the main body of paper or supporting information.

References

Adams, B., & Tourani, P. (2017). Ieee 24th international conference on software analysis, evolution, and reengineering. , 24-33.

Beane, R. J., Baer, E., Lockwood, R., Macdonald, R. H., McDaris, J. R., Morris, V. R., ... White, L. D. (2021). Uneven increases in racial diversity of us geoscience undergraduates. *Communications Earth & Environment*, *2*(1), 1–4.

Bernard, R. E., & Cooperdock, E. H. (2018). No progress on diversity in 40 years. *Nature Geoscience*, *11*(5), 292–295.

Cropp, D. (2012). The theory and practice of collaborations in law enforcement. *International Journal of Police Science & Management*, *14*(3), 213–218.

DiAngelo, R. (2018). *White fragility: Why it's so hard for white people to talk about racism.* Beacon Press.

Dutt, K. (2020). Race and racism in the geosciences. *Nature Geoscience*, *13*(1), 2–3.

Kaptein, M., & Schwartz, M. S. (2008). The effectiveness of business codes: A critical examination of existing studies and the development of an integrated research model. *JBE. Journal of Business Ethics*, *77*(2), 111-127.

Keane, C. (2018). Geoscience enrollments remain robust in 2016-2017. *American Geoscience Institute*(130).

Miller, J., & Donner, S. (2000). More than just talk: The use of racial dialogues to combat racism. *Social work with groups*, *23*(1), 31–53.

Sue, D. W. (2013). Race talk: The psychology of racial dialogues. *American Psychologist*, *68*(8), 663.

Sue, D. W., & Constantine, M. G. (2007). Racial microaggressions as instigators of difficult dialogues on race: Implications for student affairs educators and students. *College Student Affairs Journal*, *26*(2), 136–143.

Tittler, M. V., & Wade, N. G. (2019).   Engaging white participants in racial dialogues: Group composition and dialogue structure. *Group Dynamics: Theory, Research, and Practice*, *23*(2), 75.

Todd, N. R., & Abrams, E. M. (2011). White dialectics: A new framework for theory, research, and practice with white students 1ψ7. *The Counseling Psychologist*, *39*(3), 353–395.

Wilson, C. E. (2018). Race and ethnicity of us citizen geoscience graduate students and postdoctoral appointees, 2016. *Geoscience Currents*, *132*.