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ORIGINAL PAPER

Diversity, equity, and inclusion: one model to move from commitment to action in medical education

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Abstract

The summer of 2020 riveted the attention of our nation with a sense of urgency to address structural racism. Cities declared racism a public health crisis, and organizations called for increased awareness of persistent historic racial inequities and advocacy for change. In medical education, students and institutional leaders felt compelled to transition from passive advocacy to energetic action in order to build a culture of anti-racism. In our institution, we applied J Mierke and V. Williamson's 6-step framework to achieve organizational culture change which is as follows: 1. Identify the catalyst for change; 2. Strategically plan for successful change; 3. Engage and empower organizational members; 4. Cultivate leaders at all levels; 5. Foster innovation, creativity, and risk-taking; 6. Monitor progress, measure success, and celebrate (even the small changes) along the way. In addition, we noted two key considerations for the success of the process: A. Transparency in communication, and B. Flexibility and adjustment to emerging situations. We share our approach using this framework which we believe is generalizable to other organizations. We draw from literature on organizational psychology and lastly call for the continuation and sustainability of the work that will continue to build a diverse, equitable, inclusive, antiracist and vibrant education community.

The summer of 2020 riveted the attention of our nation and led to a sense of urgency to address structural racism with a record number of demonstrations demanding racial justice (Buchanan et al. 2020). The COVID-19 pandemic shed a spotlight on health inequities that have long affected Black and other marginalized communities, with reports across the nation highlighting higher infection and death rates and lower immunizations from COVID-19 (Mackey et al. 2021). Cities and health

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care organizations declared racism a public health crisis and organizations called for increased awareness of persistent historic racial inequities and advocated for change (Mendez et al. 2021; Okaka et al. 2021). Cleveland and the Cleveland Clinic declared racism as a public health crisis. With this sense of urgency, medical students and leaders were among those who felt compelled to actively work to build a culture of anti-racism (Mierke and Williamson 2017). The task at hand called for incremental steps within our College of Medicine to inform change within and in close collaboration with our larger healthcare system. Transformational change called for an examination of every aspect of our work with a Diversity, Equity, Inclusion, and Anti-Racism lens (DEI). We asked questions such as how we can be more deliberate in reaching out and enrolling more diverse students and faculty, how do we build a more inclusive culture, where are the curricular gaps in our understanding of health disparities, how can we better neighbors to our surrounding communities, and what can we do to prepare the next generation of physician scientists to be agents of change. In defining the scope of our work, we sought to address not only racism, but also the injustices suffered by marginalized groups such as the LGBTQ+community, people with disabilities, and other racial and ethnic minorities. While this broader definition and breadth of work can be quite complex, we thought it critical to create a framework for today and for tomorrow, that would recognize systems of injustice and be sensitive to address emerging concerns of marginalized communities. In recent years, there has been attention to the need for concrete goals to alleviate disparities and actionable steps toward reparative justice within medical education (Williams et al. 2021; Mateo and Williams 2020). Institutions across the country, ranging from medical schools and residency programs have been taking on this endeavor and these specific projects have addressed different aspects of the health professions such as increasing minority representation among staff and students, implementing curricular changes, and making efforts to change the culture (Kaslow et al. 2021). For example, the University of California San Francisco has implemented an intensive two-day program during first-year orientation to introduce topics of DEI early in medical education (Davis et al. 2021). Other specific interventions addressing important components of (DEI) have been shared in the literature, exemplified by a seminal series convened by the Macy Foundation and the publication of 27 articles in the December 2020 supplement issue of Academic Medicine (Humphrey et al. 2020). Most recently, a task force within the Association of Family Medicine Residency Directors (AFMRD) developed a tool for program DEI evaluation modeled after the Accreditation Council on Graduate Medical Education (ACGME) DEI Milestones for residency programs to set DEI goals and track their progress in meeting them (Ravenna et al. 2022).

The large scope of DEI work suggests the need for a systematic approach to affect change. We saw an opportunity to draw from the literature on organizational psychology and for the systematic application of a framework to advance the breadth and depth of DEI work and achieve organizational culture change. Organizational psychology includes an emphasis on systems thinking and provides a valuable framework to consider change within an established social structure (Stroh 2015). When an organization invests time

in embracing a systems thinking approach, the responsibility of addressing problems shifts from organization leaders to the individual members of the organization. Shifting the responsibility of addressing transgressions an organization's core values of safeguarding diversity to organization members helps foster the culture of inclusivity in and of itself. Thus, cultural change presents the ideal example a problem that demands systems thinking to manifest. Social change relies on a systems approach as a catalyst for meaningful discussions across the organization's community (Stroh 2015).

The organizational discipline to drive meaningful discussions and practical implementation toward culture change necessitates a structural framework. We describe the application of Mierke and Williamson's (2017) 6-step framework in terms of its core rationale, assumptions, strengths and weaknesses, and utility in other contexts to provide a rich background to this work: 1. identify the catalyst for change; 2. strategically plan for successful change; 3. engage and empower organizational members; 4. leaders at all levels; 5. foster innovation, creativity, and risk-taking; 6. monitor progress, measure success, and celebrate (even the small changes) along the way.

We elected to use Mierke and Williamson's (2017) framework to model our organization's approach to catalyzing change for a few key reasons. First, J Mierke and V Williamson built their framework with an appreciation for the intersectional nature of organizational culture. Their framework embraces slow and lasting change, and moreover, it offers practical approaches to engage various levels of an organization in this effort. The practicality of their framework is showcased by their library system's decade long effort and success with its implementation. Through their experiences, we see the approach to organizational change must be malleable to the individual members' perspectives, and that leadership must take cues from the larger group to define a direction for the proposed changes. J Mierke and V Williamson use the term "cave dwellers" to describe those who are counterproductive to change efforts and highlight the importance of navigating past these individuals by maintaining steadfast commitment to the cause. Of course, a framework that relies so heavily on the intraorganizational and interpersonal relationships can only be as strong as the engagement that individual members invest. In medical education, engagement faces unique challenges. Engagement is challenged by the inherent hierarchy of students, residents, and faculty, and transient nature of trainees, as well as individual people's bandwidth to participate. With this in mind, we propose two additional considerations that help safeguard the investment of individuals within the complex system of higher education. After three years of practicing our own framework for DEI initiatives at our school, we find that these two principles have proven critical in the implementation, dissemination, and sustainability of our work: A. transparency in communication and B. flexibility and adjustment to emerging situations. The time, effort, and deliberate approach to collaboration essential to the framework process and implementation

Table 1 Stepwise process to build actionable items toward culture change

Steps toward culture change	Examples
Identify the catalyst for change	National Events highlight long standing structural racism Open Forums with students
Strategically plan for successful change	Creation of DEI Steering Committee comprised of Medical School Executive Dean and leadership, GME, and student representatives Committed administrative support Creation of multiple Action Groups
Engage and empower organizational members	Call to Action and dissemination through internal communication, across the health system: newsletter, intranet Action Group Liaison representative from Medical School Leadership
Cultivate leaders at all levels	Deliberate outreach to GME, Health Sciences leadership Deliberate engagement of key stakeholders across the academic and health system: Office of Diversity and Inclusion, Office of Recruitment, Community Outreach
Foster innovation, creativity and risk-taking	Allow groups to set goals, define metrics, disrupt the status quo
Monitor progress, measure successes, and celebrate	Task groups with setting SMART goals (Specific, measurable, actionable, relevant, time-bound) Frequent cadence of meetings to report on progress

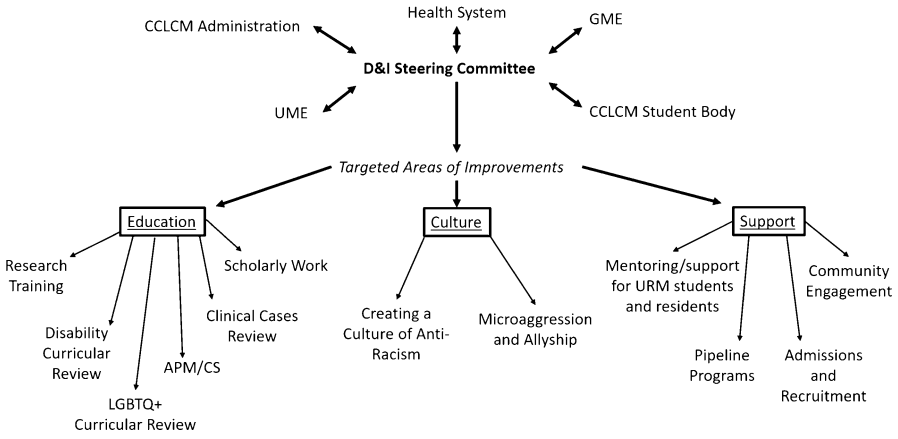
Based on J Mierke and V. Williamson's 6-step framework to achieve organizational culture change

DEI diversity equity and inclusion, *GME* graduate medical education, *ODI* office of diversity, *OPS* office of professional staff

are described below. These additional considerations felt especially important to respect the students' engagement and buy-in, to build trust with the school leadership through transparent and evolving communications.. We share the approach of our medical school and healthcare system to this framework, which we believe can be generalized to other settings of higher education (Table 1).

1. Identify the catalyst for change

National events shook the medical school community to spring into action toward diversity, inclusion, equity, and anti-racism. With a longstanding dedication to DEI, the events of the summer of 2020 prompted the leadership at our medical school to accelerate the move from commitment to action. Ensuring organizational members are heard and represented throughout the transformational process is critical to change (Haider et al. 2018). As such, from June to August 2020,



D&I = Diversity Equity and Inclusion
CCLCM = Cleveland Clinic Lerner College of Medicine
UME = Undergraduate Medical Education
GME = Graduate Medical Education
URM = Underrepresented minorities
APM/CS = Art and Practice of Medicine / Clinical Skills

Fig. 1 Schematic representation of Steering Committee and Action Groups. *D&I* Diversity Equity and Inclusion, *CCLCM* Cleveland Clinic Lerner College of Medicine, *UME* Undergraduate Medical Education, *GME* Graduate Medical Education, *URM* Underrepresented minorities, *APM/CS* Art and Practice of Medicine/Clinical Skills. This figure depicts the role and relationship of the DEI Steering Committee with other key stakeholders involved in medical education. The Targeted Ares of Improvements represent the multiple Action Groups that emerged to evaluate and implement actionable changes across the medical school, from support, the learning and working environment and culture, and the education curriculum upon which we train the next generation of physicians

the Deans and Diversity leads held nine town halls or listening sessions with medical students. These sessions created a safe space to express concerns about existing institutional practices and culture, and informed the urgency to implement actionable change. Students further formulated a letter to the Deans, outlining specific areas of concern and opportunities for improvement. Information gathered from the town halls and the student letter informed the deliberation of a Deans' DEI retreat and the subsequent creation of 12 Action Groups reporting to a new Diversity, Inclusion and Anti-Racism Steering Committee (DEI Steering Committee) (Fig. 1). Significant time and effort were invested in additional conversations to delineate the membership of the DEI Steering Committee and Action Groups, while not losing sight of the tempo to respond to a national catalyst to drive change.

2. Strategically plan for successful change

The commitment from the College leadership to invest in listening and planning informed the creation of a strategic initiative to drive immediate and long lasting change. The strategy recognized the value of engaging the broader healthcare system community, as initiatives within the College may not have the reach and sustainability if standing on their own without broader support. We thus put a broad call to action to our education and healthcare community, inviting anyone interested in the DEI work to join our Action Groups. Recognizing the breadth and depth of work, we allocated administrative support to the Steering Committee and to each of the Action Groups. These Action Groups were created on a voluntary basis, consisting of one Faculty lead, one Student lead, and a mix of faculty, student, and administrative team members. personnel from the Office of Diversity, Office of Physician Recruitment, Title IX, and others joined specific groups to lend their expertise and connectedness with key departments and leaders across the health care institution. Students joined each Action Group based on personal interest and schedule. Our current action groups are as follows: Build a culture anti-racism, service learning & community outreach, curriculum review—clinical cases, curriculum review—LGBTQ+, faculty diversity: recruitment, retention, teaching opportunities, mentoring & pipeline, microaggression and allyship, research training/education, and disabilities. Each Action Group was tasked with including a needs assessment, and setting SMART (specific, measurable, achievable, relevant, and time-bound) goals, to implement change of immediate, long-term, and sustainable impact. The groups were deliberately termed 'action', rather than working groups, to convey a commitment for tangible change. Multiple groups were created to enable each to hone in on a specific, focused area of DEI interest, from admissions to the multiple determinants of a student's trajectory in medical school and in the community. Specific groups included building a diverse student body through admissions, recruitment, and pipeline or pathway programs; advancing more diverse faculty recruitment and professional development; and mentoring and support of underrepresented in medicine (URiM) students. Other groups focused on curricular content and context such as the history of racism in medicine and in research, recognition of biases in the curriculum and elucidation of the root cause of health disparities experienced in marginalized communities, as well as service and engagement with local under-served communities. Another set of groups focused on the learning and working environment, to recognize and address microaggressions and skills to speak up as an ally, and to build a culture of anti-racism. Tangible outcomes from our action groups have included revamping the curriculum to cover more topics related to LGBTQ+ individuals both in clinical cases and in seminars, including research on health care disparities in our preclinical research seminars, and increasing visibility of diverse CCLCM faculty. An extensive description of the accomplished results of our action groups is noted in Table 2. Our efforts were cast far and wide to ensure every area of our medical school was seen through a deliberate DEI lens. We recognize that our initial strategy is the beginning of a process with opportunities to expand in future.

Table 2 Diversity, equity, and inclusion action groups objectives and key results (June 2020 June 2022)

Action group	Objectives	Key results
Build a culture of antiracism	Education of medical school community: Understand the concept of anti-racism and why we choose it as our cultural goal	Faculty training: Designed and implemented faculty development workshops, tailored to the learning setting Student training: Designed and implemented Racism in Medicine presentations Created a book club for new student orientation: increase awareness of cultural humility, and of history of racism in medicine Guest speakers invited to the book club: informed students of actionable items in their training and careers as physician scientists
Microaggressions and Allyship	Create an enterprise-wide collaborative training, of medical school, trainees, and healthcare system faculty and staff: microaggression/allyship workshop	Developed a committee to include representation from medical students and medical school community, Graduate Medical Education leadership and House Staff, Health Sciences Education, Lerner Research Institute, Office of Diversity, Title IX Office, and various healthcare system departments Completed a literature search of Microaggression and Allyship models and best practices Conducted pilot sessions with various caregivers and collected feedback before implementation at an enterprise-wide level Implemented 2-h workshop delivered on virtual and in-person platform, available enterprise-wide, and tailored to the audience
Mentoring	Build a Mentor–Mentee match program for URiM* students	Paired 40 URiM students with 40 URiM mentors based on personal and/or professional goals Delivered 2 virtual workshops for faculty and students: 1/ how to be a successful mentor and mentee, 2/unique considerations of mentoring URiM students Program ongoing each academic year

Table 2 (continued)

Action group	Objectives	Key results
	Expand mentoring program to other student affinity groups	Similar model adapted by several affinity groups Mentoring program expanded to include Graduate Medical Education Trainees as mentors and mentees
	Develop sustainable program	Exploration of mentoring software products in process
Address School of Medicine approach to People with Disabilities in lived experiences and in the curriculum	Evaluate curriculum content and opportunities to advance education of healthcare of people with disabilities	Determined learning objectives of key issues to address in the curriculum
		Conducted keyword search of existing disability-related Learning Objectives within the medical school curriculum
		In progress: integrate key learning objectives and content into existing teaching sessions
Service learning—community outreach	Enhance curricular student engagement with the community	Integrated community visits during teaching sessions in Medical Humanities
		Created new elective Clinical Rotations sites at under-served Cleveland communities
		Developed a Covid-19 Vaccine community outreach elective
	Improve school of medicine students, faculty and staff visibility and access to existing community outreach opportunities	Developed a database that is kept up to date, with all existing community outreach opportunities and points of contact
	Establish community outreach opportunities for school of medicine	Students and faculty readily responded to healthcare enterprise and community identified COVID- 19 vaccine clinics and community education initiatives
		Stemming from a vaccine clinic, students identified and delivered health education talks at a public housing complex in Cleveland
		Students and a faculty designed and implemented a health clinic at a women and children shelter

Table 2 (continued)

Action group	Objectives	Key results
Curriculum review: Integrate health and healthcare of the LGBTQ + community (Model of planning, design and implementation utilized for other under- represented communities	Needs assessment of gaps and opportunities to develop a thread across the medical school curriculum to address LGBTQ health	Completed content needs assessment for First (M1) and Second (M2) year Medical Students across basic science and clinical skills courses
		Created Learning Objectives for specific curriculum recommendations
		Contacted course directors to share suggested content and opportunities for integration into existing didactic sessions
		Under development: Third year (M3) student members to conduct needs assessment of M3 year
	Implementation of curriculum development	Facilitate implementation of recommended curriculum opportunities and integration with existing content. Provide resources to course directors (eg, 1 slide for the designated session) specifically addressing LGBTQ + health within the topic of discussion
		Developed a gender and sexuality vocabulary primer, shared with course directors and key faculty
	Normalize gender and sexuality in didactic presentations to M1 and M2. Avoid stereotype and bias of LGBTQ + patients	Under development: random assignment of gender and sexual identity across all case presentations (with proofreads)
		Created IRB-exempted survey for students
	Survey students on knowledge, attitudes and beliefs and meeting LGBTQ + health learning objectives	Distributed baseline survey to all medical students
		Analyzed data from the 2021–2022 school year
Research curriculum and education	Increase awareness and discussion of racism and health disparities in research	Developed a recommended reading list of research on race and health care disparities

Table 2 (continued)

Action group	Objectives	Key results
	Train physician scientists in the design and evaluation of research that is inclusive of minority communities, and/or addressed health disparities	Include research on health care disparities in epidemiology and research education
		Increase opportunities for diversity- related research and/or research on health care disparities
		Faculty engaged in research in health disparities clearly identified and listed on the student portal
		Developed an educational session on diversity-related and healthcare disparity research
		Increased diversity of research education speakers
Curriculum review—clinical cases	Socialize a checklist to assess bias in medical education (adapted fromhttps://aecarusobrown.com/the- upstate-bias-checklist/	Presented at Education Committees and disseminated via department meetings
	Develop faculty development, resident and student training seminars	Workshop designed and delivered to faculty, resident and student audiences
Faculty recruitment, retention and development	Increase the number of women and URiM applying for promotion	Offered virtual Promotion Workshops. Increased marketing efforts
		Collected data regarding appointment and promotion for 2021
	Increase visibility of diverse school of medicine faculty	Developed plan to profile URiM and women faculty via social media and intranet
	Increase diverse faculty engaged in teaching medical students	Hosted an orientation session for faculty interested in teaching medical students

For example, we have not specifically addressed historical inequities in religious minorities, indigenous people, and others. While we do not have an Action Group uniquely dedicated gender inequalities, the Cleveland Clinic is a signatory of the American Association of Medical Colleges Gender Equity Statement ("AAMC Statement on Gender Equity" 2020), is committed to addressing maternal mortality (Maternal Mortality: Reducing Disparities 2022) and addresses historical and current trends within its curriculum. The digital divide that became apparent during the COVID-19 pandemic and further exacerbated existing inequities in access to care, are addressed in sessions on social determinants of health and are also a focus of the Cleveland Clinic's investment in the community (Tackling the Digital Divide to Improve Telehealth 2022). These initiatives in the healthcare system further support the key integration of the College work with a healthcare system where students will participate in clinical rotations, research, and community outreach, further complementing their education.

3. Engage and empower organizational members

In August 2020, the DEI Steering Committee put a call to action to the medical school and education community for broad engagement of its organizational members. The message was disseminated widely through internal communication, to ensure the organizational changes would not be isolated to the medical school but could have champions and rippling effects throughout the education and healthcare system. Over 100 students, residents in training, faculty, administrative staff, and other key stakeholders in the healthcare system responded to the call to action and were assigned to action groups based on their interest. A central tenant to our work required that each Action Group include, engage, listen, and empower students to lead the that impacts their education and that of future generations of physician scientists. Each Action Group leadership must include at least one student and one faculty lead, and a designated representative steering committee liaison. The latter holds a leadership position at the school of medicine and at key education committees, ensuring the group has clear communication to the committee and, importantly, is empowered to plan, implement, and disseminate proposed ideas and changes. Active student and faculty representation at every Action Group and at the Steering Committee and integration with key members of the healthcare system set the framework for transparency in communication among students, faculty, and the school's leadership. While working in DEI was not new to the school, the breadth and depth of the work and the emphasis on transparency were all key tenants to this new framework. Communication and transparency are reinforced at every meeting, and as such, we suggest it as an additional, 7th step to J. Mierke and Williamson's framework of culture change, listed below. The Action Group faculty and student leads were equipped with information that arose from the initial town halls and listening sessions, student letter to the Deans, and DEI retreat to have awareness of the issues at hand specific to their action group. Thereafter, the groups were empowered to set their own agenda with short- and long-term goals and tasked only with specifying SMART goals and sharing their progress with the DEI Steering committee

twice a year. Group leads and participating members demonstrated consistent engagement and outcomes beyond all expectations (Table 2). Centering on organizational psychology, individual members of the College, empowered with leading change through the Action Groups, embrace the shift in responsibility from leadership to themselves and can unleash their creativity to address DEI gaps. The active role of the organization members, students, faculty, and staff, fosters in and of itself a culture of inclusivity. Building a culture of anti-racism thus relies on a systems thinking approach as a catalyst for meaningful discussions across the organization's community (Stroh 2015).

4. Cultivate leaders at all levels

The DEI Steering Committee engaged other educators and leaders in the healthcare organization with the purpose of cultivating a hub of information exchange, resource sharing, and expertise. We set to meet quarterly with diverse educators in our Education Institute including the medical school, Graduate Medical Education (GME), the House staff Association (HSA), and the Center for Health Professions Education which houses over ninety different allied health professions. Additionally, we cultivated a broad reach of leaders across the healthcare system's Office of Diversity and Inclusion, Office of Physician Recruitment, and Community Health outreach, verifying a unified vision and common language to emerge with the goal of achieving organizational culture change at the College of Medicine and across the healthcare system. As the Cleveland Clinic declared racism as a public health crisis, it set in motion rounds of listening sessions and created a Diversity, Inclusion, and Racial Equity Executive Council (DIREC) to address its internal and external work toward a culture of inclusion, equity, and anti-racism. With representation of the College's DEI Assistant Dean at the DIREC, we again aligned our work with the larger healthcare system, but also ensured visibility and engagement in our work at the highest levels of the organization.

5. Foster innovation, creativity, and risk-taking

Each Action group was given thorough information on previous DEI efforts, opportunities, and barriers and offered a framework to start their work. Importantly though, each group was given leeway for innovation and creativity in setting SMART goals and an achievable timeframe. The diversity of thought, training level (students, residents in training, faculty), healthcare specialty, role in the organization (medical and administrative staff) allowed for transformational proposals that were by default already vetted by representative stakeholders across the institution, ensuring their face validity and feasibility. Action Groups were invited to disrupt existing norms and take risks in designing novel interventions. This innovative spirit soon fed on leaders and members to be creative reflects a humility of the school's leadership in entrusting its constituents (students, faculty, staff) to inform the leadership of DEI gaps, opportunities, and tangible

actions. Group leaders were thus given the flexibility to tailor their work to the needs at hand. We recognize that emerging national events, and new, emerging knowledge in DEI best practices, can only be attended to with a framework that allows flexibility and adjustment. This realization may dictate building new Action Groups or resourcing existing groups to embrace change and broaden the scope of work. Planning a framework that would continue to be sensitive to emerging trends and not held back by previous practices prompted us to create an 8th step in J. Mierke and Williamson's framework (Table 1).

6. Monitor progress, measure success, and celebrate (even the small changes) along the way

The Steering Committee initially met weekly for 2 months and biweekly thereafter. At the end of December 2020 and twice a year thereafter, we held a DEI Steering Committee Retreat where every action group presented its progress on each of their SMART goals. The frequent meetings and retreat set a pace for each group's accountability and created a platform to recognize similarities in goals between action groups and opportunities for collaboration or merging. Early on, we identified the need to commit administrative support for each group to set a cadence of meetings, organization, and consistency in reporting. Each group presented SMART goals and reported on Objectives and Key Results (OKR) to track their progress. The latter gives a visual representation of progress, celebration of accomplishments, and periodic reassessment of allocation of resources and modified goals. Examples of early successes include a deliberate inclusion of diverse faculty in several core courses, implementation of universal unconscious bias training for admissions committee members, the integration of LGBTQ lens into basic science education, the design and implementation of a course to manage microaggressions, and the development and implementation of an anti-racism student book club (Yepes-Rios et al. 2021) (Table 3). Our work is being disseminated on national and regional platforms, with presentations of the integrated LGBTQ curriculum at several national meetings including *Stonewall: An Integrated Longitudinal Approach to LGBTQ+ Health Education* at the Association of American Medical Colleges Central Group on Education Affairs (AAMC CGEA) meeting, *A Student-Driven Needs Assessment of Medical Student Pre-Clinical LGBTQ+ Knowledge and Skills* at the Indiana University LGBTQ+ Healthcare Conference, *An Integrated Approach to Improving Medical Student LGBTQ+ Health Knowledge* at the National LGBTQ Health Conference; presentations of workshops addressing microaggressions *When I Commit or Witness a Microaggression: Collaborative Skills Training Workshop* at the AAMC CGEA; and *Utilizing a Peer Book Club to Explore Themes of Cultural Humility in Medicine* at the American Medical Association Group on Student Affairs Spring Meeting 2021.

Table 3 Stepwise framework exemplified by a book club toward culture change (Yepes-Rios et al. 2021)

Framework steps	Guiding questions	Barriers and opportunities
Identify the catalyst for change	Where is there an opportunity for a culture change at your institution? • Admissions • Faculty recruitment • Community engagement • Inclusive curriculum • Microaggressions • Etc	There is a need for cultural humility training within the medical school curriculum
Strategically plan for successful change	What initiative(s) would help to foster a culture change?	Explore themes of cultural humility in medicine through a peer-led book club
Engage and empower organizational members	Which stakeholders should be involved in the initiative? How can you empower them?	Medical students, faculty members Create a forum for open discussion
Cultivate leaders at all levels	Is there representation at every level? (students/trainees, faculty)	Book club led by medical students Notify leadership of book club
Foster innovation, creativity, and risk-taking	How will you incentivize creative thinking and problem-solving?	Encourage the development of actionable steps that promote cultural humility in medicine
Monitor progress, measure success, and celebrate (even the small changes) along the way	Are your goals SMART? (Specific, Measurable, Achievable, Relevant and Time-Bound) How will you be transparent about the progress of the initiative?	Invite experts on the actionable items to subsequent book club sessions to discuss relevant themes Incorporate the book club into orientation for new medical students Regularly gather feedback from book club members

Prerequisite conditions

The framework we have presented is centered on J. Mierke and Williamson's well-established framework, and has generalizability to any organization, set to achieve a culture change with clear goals of diversity, inclusiveness, and equity. Embedded in the model of leadership and strategic planning, we empowered organizational members through their representation and active engagement in every Action Group and the Steering Committee. Nonetheless, early in the process, students expressed concern about lack of clarity of previous DEI efforts, and the importance of building trust through clear communication and transparency. This concern informed our addition two prerequisite conditions that must be met for effective implementation and sustainability of the 6-step framework centered on J Mierke and Williamson's framework. These two conditions, outlined in Table 4, are to provide transparency in communication as a distinct step to be addressed at every Action Group and Steering Committee meeting and to offer flexibility to allow adjustments as new situations emerge Steps 5 and 6 underscore fostering innovation and creativity, and monitoring progress along the way. As described above, the success of our framework lies on careful consideration of J. Mierke and Williamson's framework and, importantly, on a ground up approach where constituents are not only empowered but relied upon to be innovative in solving problems that affect them, medical education, and healthcare. As each group embarks on their work toward culture change with clear goals of diversity, inclusiveness, and equity, there needs to be a space that is sensitive to emerging societal, bias, and discrimination knowledge or events. This may inform the creation of a new Action Group, or conversations with existing Action Groups on ways to expand their scope of work to include new issues of concern. As an example, while creating workshops to address bias and microaggressions in the learning environment, we are learning of emerging literature on giving feedback across different racial and ethnic backgrounds and are beginning to explore this work in the Action Group. Other times, the DEI leadership and Steering Committee have taken the lead in responding to national events and engaging the community at large to join difficult conversations. Creating a framework with a Steering Committed on DEI and anti-racism must, of course, address the salient events of 2020 that uncovered longstanding structural racism. As described in the text and tables,

Table 4 Two prerequisite considerations for effective implementation of J Mierke and V. Williamson's 6-step framework to achieve organizational culture change

Prerequisite considerations	Examples
Transparency	Frequent communication with the medical students and academic community on the work of the Steering Committee and Action Groups
Flexibility and adjustment to emerging situations	Prepare for periodic review and sustainability Recognize and respond to emerging situations, eg. Xenophobia during COVID-19 pandemic and impact on Asian community

the scope of our work has intentionally been broad to address racism, and address longstanding and emerging injustices suffered by marginalized communities such as LGBTQ+, people with disabilities, and other racial and ethnic minorities. This broad approach, although more complex in its breadth, shapes a framework that is inclusive and flexible to respond to the needs of any community that may have been subject discrimination. It informs an inclusive environment that is receptive to learn and support different communities, and an infrastructure that is capable of pivoting to respond to emerging needs. We define this space as an additional consideration in the framework of flexibility and adjustment to emerging situations.

Prerequisite conditions

A. An additional step of transparency in communication was determined to be critical from the start

Student communication from the initial forums and letter to the Deans alerted the leadership that much of the DEI work to date was unbeknown to the students, education, and healthcare community. Moving forward, we deliberately included students in the steering committee and in every action group and set open lines of communication with the student body. Students on the Steering Committee share notes and documents from each meeting with the entire student body and highlight the work in student chats and in social media. Students have also created an anonymous online form for students to submit feedback on ways in which this committee and the work we are doing can respond to emerging trends and continue to evolve and grow. We have incorporated this as an additional step to highlight the importance of this iterative work after we have taken efforts to engage the community. We continue to explore communication strategies to meet the needs of busy students, faculty, and staff, and preferences for communication across generations and information gathering preferences. In addition to email, we highlight the work of the Action Groups in a monthly school newsletter, and on social media such as Twitter. The latter has opened a world of communication of our work with the broader College and Healthcare community, including Alumni who are excited to see the commitment to DEI. We recognize communication channels continue to evolve over time and find it imperative to continue to explore new avenues of sharing the work and of listening to students, faculty, and staff. This transparency of our work and our continued conversations with students, faculty, and the academic community at large is critical in holding our actions groups and committee accountable for the goals they have set out to achieve.

B. A step of flexibility and adjustment to emerging situations

While we want to complete the goals we have set out, it is important to be flexible and adaptable to feedback and change. Open communication with the student body and with stakeholders allows for information to be shared openly and widely, but also for reciprocity in receiving feedback from students and others. In addition, the

work of DEI requires continuous assessment and response to emerging issues. As an example, during the COVID-19 pandemic, we have been sensitive to a national rise in xenophobia and the impact on our students and academic community. This has alerted us to reach out to the Asian student community and faculty, listen to their concerns, and embed them in our DEI work. Barriers remain, however, that we must acknowledge when attempting to establish institutional change. While staff and administrators may be passionate about achieving DEI-based change at their institution, they may be pressed for time amidst their otherwise busy schedules. As advocates, we can utilize the work of action groups and diversity initiatives to demonstrate that there are key opportunities for diversity and inclusion to be integrated into current work. Nonetheless, leadership commitment, appropriate administrative support, and recognition of those engaged are all key for the success and sustainability of the work.

At large institutions, various constituencies may develop their own DEI initiatives, reinforcing the need for clear and open communication and information sharing to promote collaboration and diversity of thought across different stakeholders, rather than duplication of work. Understanding and sharing of the various tasks required for a culture change and aligning the goals of the various efforts in an organization allows for better efficiency and efficacy. This efficiency is also beneficial in allowing an organization to quickly understand and appropriately respond to new challenges and changing circumstances. This is often important to creating an inclusive environment as it acknowledges the ways in which emerging current events may be affecting various members of the organization. Communication and accountability can also be problematic without an integrated approach to culture change. Leadership in leading change and including UME/GME and the health system in a shared goals setting process encourages an environment of transparency, accountability, and collaboration. It is challenging for other individuals who are unaware of either the process or the goal of an initiative to offer feedback or to evaluate the initiative. Clear communication and integration help quantify and evaluate instituted change. Having a common format for goal setting is one mechanism to achieve integration. Using the SMART goals and OKR described above allows for goals to be meaningful and measurable across the organization. This will serve to create a transparent data-based approach for achieving a culture of anti-racism. Importantly, it also ensures that there is continued progress being made by the organization over time and that students, faculty, and administrators all see the benefits of an inclusive anti-racist culture.

Next steps: sustainability

How do we measure the integrated and cumulative effect of all the action groups that add up to a culture change? We deliberately did not create a task force which is defined by a beginning and an end, and instead built Action Groups to set achievable steps and goals to be periodically re-evaluated and responsive to emerging circumstances. Yearly calls to action invite new students, faculty, and others to contribute

new, diverse ideas to the organization's growth in DEI. Unwavering leadership commitment toward culture change will continue to set the tone and message that DEI work is intertwined and not distinct from all the other academic and health system work. Clear communication and transparency are essential in sharing with the community at-large the breadth and depth of the DEI work, ongoing efforts, opportunities, and barriers. We must always ask ourselves "where do our best intentions fall short of achieving what we really care about" Stroh 2015), remain humble, centered on our students, trainees, and community, and keep the momentum. All the Action Groups presented the 4th Quarter of 2021 Objectives and Key Results to the DEI Steering Committee. A renewed annual call to action in August 2021 brought in new faculty and students who are advancing the work set ahead and bringing new ideas. Importantly, Action Groups have a new student and faculty lead who work hand in hand with the previous year's leadership and will ensure the continuation and sustainability of the work. The Admissions committee has implemented new training to recognize and manage bias contextually aligned with a faculty development session prepared by the Action Group tasked with Building a Culture of Anti-Racism. In addition, specific measures have been implemented to broaden the meaning and application of a more holistic review of applicants to decrease bias in the selection process.

To advance an inclusive and equitable environment, the Mentoring Group created a mentoring match program for Underrepresented in Medicine (URiM) Students with URiM Faculty that is extended this year to include Residents in Training as a bridge of mentors and mentees and a sustainable program. The mentoring program's success has had rippling effects throughout other student affinity groups and other health sciences professions students who are working closely with us to develop programs for PRIDE, Asian American, first-generation, physician Assistant students among others. The group is exploring along with the Admissions committee opportunities to extend career mentoring into local colleges and Historically Black Colleges and Universities to increase the opportunities for URM students into the sciences and medicine earlier in their education. The curriculum delivered to students reflects our commitment to train the next generation of physicians with the background, skills, and culture in anti-racism for their future care of patients and communities. We have identified and implemented changed in the curriculum to recognize the root of health disparities in historical structural racism and social determinants of health and remove race essentialism whereas race is presented as a genetic rather than a social construct. Working groups are expanding education on LGBTQ health and on best practices to include people with disabilities. Several student and faculty workshops are building the school communities' skills on recognizing and reporting microaggressions, toward a more inclusive learning and working environment. A 2-hour workshop has been piloted with key stakeholders and has projected implementation in Q1 2022. The group building training on microaggressions has health system wide representation, a testament to the recognition of the framework created to cultivate leaders at all levels, empower group members to create, plan and deliver effective actions, and be transparent and collaborative. Faculty recruitment and retention have seen efforts in internal recognition of minority faculty and overseeing large-scale efforts to recruit and retain a more diverse

workforce. Students in the Action Group tasked with an overarching goal of building a culture of anti-racism created a book club (Yepes-Rios et al. 2021) for first-year students to discuss the history of racism in medicine and identify opportunities for emerging physicians to learn, question, and embrace cultural humility. Application of the framework is demonstrated in Table 3. Going into its second year, all incoming students were given the book *The Spirit Catches You and You Fall Down* by Anne Fadiman, generating stimulating discussion and actionable items for physicians in training utilizing the framework to be change agents to build in education and healthcare an anti-racist workforce.

The framework we have shared has potential application to higher education and in organizations challenging themselves to engage their leaders and stakeholders to address one or many facets of racism or discrimination toward marginalized groups. We offer key components and manageable, actionable steps, and share early successes as we continue our journey. The work must continue, as we challenge ourselves and our organizations to strive toward a culture of anti-racism.

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