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Authors
Stephenson, Nicole
Forno, Erick
Laguna, Theresa
et al.

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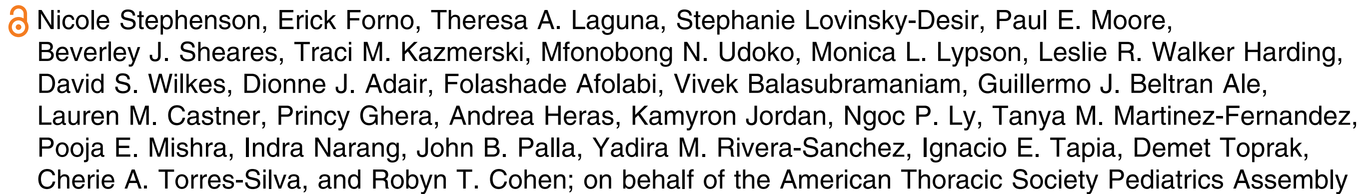
Diversity, Equity, and Inclusion in the Pediatric Pulmonary Workforce
An Official American Thoracic Society Workshop Report



Nicole Stephenson, Erick Forno, Theresa A. Laguna, Stephanie Lovinsky-Desir, Paul E. Moore, Beverley J. Sheares, Traci M. Kazmerski, Mfonobong N. Udoko, Monica L. Lypson, Leslie R. Walker Harding, David S. Wilkes, Dionne J. Adair, Folashade Afolabi, Vivek Balasubramaniam, Guillermo J. Beltran Ale, Lauren M. Castner, Princy Ghera, Andrea Heras, Kamyron Jordan, Ngoc P. Ly, Tanya M. Martinez-Fernandez, Pooja E. Mishra, Indra Narang, John B. Palla, Yadira M. Rivera-Sanchez, Ignacio E. Tapia, Demet Toprak, Cherie A. Torres-Silva, and Robyn T. Cohen; on behalf of the American Thoracic Society Pediatrics Assembly

THIS OFFICIAL WORKSHOP REPORT OF THE AMERICAN THORACIC SOCIETY WAS APPROVED MAY 2023

Abstract

Despite growing recognition of the need for increased diversity among students, trainees, and faculty in health care, the medical workforce still lacks adequate representation from groups historically underrepresented in medicine (URiM). The subspecialty field of pediatric pulmonology is no exception. Although there have been efforts to address issues of diversity, equity, and inclusion (DEI) in our own field, gaps persist. To address these gaps, the members of the Diversity, Equity, and Inclusion Advisory Group (DEI-AG) of the American Thoracic Society Pediatrics Assembly created and distributed a Needs Assessment Survey in the United States and Canada to better understand the racial and ethnic demographics of the pediatric pulmonary workforce and to learn more about successes, gaps, and opportunities to enhance how we recruit, train, and retain a diverse workforce. The DEI-AG leadership cochairs convened a workshop to review the findings of the DEI Needs Assessment Survey and to develop strategies to improve the recruitment and retention of URiM fellows and faculty. This Official ATS Workshop Report aims to identify barriers and opportunities for recruitment, training, and career development within the field of pediatric pulmonology. Additionally, we offer useful strategies and resources to improve the recruitment of URiM residents, the mentorship of trainees and junior faculty, and the career development of URiM faculty in academic centers. This Workshop Report is an important first deliverable by the DEI-AG. We hope that this work, originating from within the Pediatrics Assembly, will serve as a model for other Assemblies, disciplines across the ATS, and other fields in Pediatrics.

Keywords: diversity; equity; inclusion; training; recruitment

ORCID IDs: 0000-0002-6266-0368 (N.S.); 0000-0001-6497-9885 (E.F.); 0000-0003-4255-0310 (T.A.L.); 0000-0003-2272-4387 (S.L.-D.); 0000-0001-5123-207X (P.E.M.); 0000-0001-6138-0033 (B.J.S.); 0000-0002-3916-8260 (T.M.K.); 0000-0002-1450-9380 (M.L.L.); 0000-0002-0268-8422 (L.R.W.H.); 0000-0001-9758-4169 (D.S.W.); 0000-0002-8862-1156 (D.J.A.); 0000-0002-3952-216X (F.A.); 0000-0002-5566-9217 (V.B.); 0000-0003-2134-3531 (G.J.B.A.); 0000-0003-1564-2690 (L.M.C.); 0000-0003-2100-0416 (P.G.); 0000-0002-0187-0353 (A.H.); 0000-0002-0595-3842 (N.P.L.); 0000-0002-8601-482X (T.M.M.-F.); 0000-0002-7451-7307 (P.E.M.); 0000-0002-7591-9500 (I.N.); 0000-0002-0074-6967 (J.B.P.); 0000-0003-0625-4741 (Y.M.R.-S.); 0000-0003-1400-6852 (I.E.T.); 0000-0001-9343-3769 (D.T.); 0000-0002-3361-3132 (C.A.T.-S.); 0000-0002-6902-3118 (R.T.C.).

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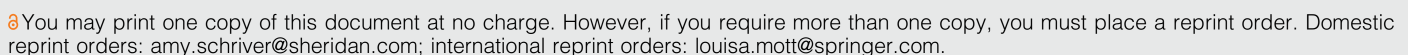

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Correspondence and requests for reprints should be addressed to Robyn T. Cohen, M.D., M.P.H., Division of Pediatric Pulmonary and Allergy, Boston Medical Center, 725 Albany Street Suite 8C, Boston, MA 02118. E-mail: robyn.cohen@bmc.org.

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Introduction

Workforce diversity drives innovation and excellence in medicine, resulting in improved patient outcomes and satisfaction (1). Racial and ethnic concordance between physician and patient results in increased trust, more use of preventative care (2, 3), improved adherence, increased patient satisfaction (4), and better health outcomes (5), all of which reduce health disparities (6). Moreover, according to the most recent U.S. census, the majority of children under 16 years of age belong to a non-White racial or ethnic group, with nearly 40% of U.S. children identifying as Hispanic/Latino or Black (7). It is, therefore, critical to address disparities in the pediatric workforce so that it more closely reflects the racial and ethnic diversity of the children and families we serve.

The Association of American Medical Colleges (AAMC) defines groups that are underrepresented in medicine (URiM) as racial and ethnic populations that are inadequately represented in the medical profession relative to their numbers in the general population, including Black, Hispanic/Latino, and Indigenous people (8). Unfortunately, recruitment and retention of URiM physicians remain a challenge in pediatrics generally (9) and pediatric pulmonology specifically. Race and ethnicity data from a 2014 survey of board-certified pediatric pulmonologists (10) found that the subspecialty comprises 73% White, 10% Hispanic/Latino, 3% Black, and <1% Native American (including American Indian, Alaska Native, and Native Hawaiian) individuals; these percentages were largely unchanged during an almost 20-year timeframe. Similarly, in 2019, 18.6% of trainees in pediatric pulmonology fellowship programs were from URiM groups, with 5.6% of trainees identifying as Black and 9.7% as Hispanic/Latino, far short of the demographics representing the U.S. population (i.e., 13.4% Black and 18.3% Hispanic/Latino) (11). Given that the lack of URiM pediatric pulmonology trainees directly contributes to the lack of URiM faculty—and with long-standing concerns about a projected shortage of overall pediatric pulmonologists in the U.S. workforce (12, 13)—there is a critical need to develop and widely implement strategies to recruit and retain a more diverse workforce of pediatric pulmonologists to address health inequities and disparities in the field.

This report will review the formation and progress of the Diversity, Equity, and Inclusion (DEI) Advisory Group (DEI-AG) of the American Thoracic Society (ATS) Pediatrics Assembly; describe the development and results of a DEI Needs Assessment Survey; present the proceedings of a 2-day ATS-sponsored workshop on Diversity, Equity, and Inclusion in the Pediatric Pulmonary Workforce; and highlight challenges, opportunities, and proposed solutions to improve the recruitment, training, and retention of a diverse pediatric pulmonary workforce.

Methods

Formation of the DEI-AG

In July 2020, amid intense focus on racial and ethnic health disparities exacerbated by the coronavirus disease 2019 (COVID-19) pandemic, after the high-profile murders of George Floyd and other people of color in the United States, and after an observed lack of racial and ethnic diversity during a June 2020 Pediatric Pulmonology Division Directors Association virtual meeting, the ATS Pediatrics Assembly formed a leadership team to address DEI in pediatric pulmonology. During the fall of 2020, the leadership team solicited nominations from the Pediatric Pulmonary Division Directors' Association for additional members.

The DEI-AG, ranging from trainees to senior faculty, met virtually for the first time in February 2021. Its 30 members include 70% members from URiM groups and includes international medical graduates and one member from Canada. The DEI-AG leadership team consists of seven co-chairs (R.T.C., E.F., T.A.L., S.L.-D., P.E.M., B.J.S., and N.S.), including one current member and one recent member of the ATS Health Equity and Diversity Committee and one pediatric pulmonology trainee.

To focus our efforts on relevant DEI issues within pediatric pulmonology, three subcommittees were formed: *1*) Pathway into Pediatric Pulmonology, *2*) Fellowship Training, and *3*) Faculty Development and Retention. Two to three members from the DEI leadership team led each subcommittee leadership team.

Creation, Administration, and Analysis of the Needs Assessment Survey

The DEI-AG's first task was to develop a needs assessment survey to gain a better understanding of the racial and ethnic demographics of the pediatric pulmonary workforce and to learn more about successes, gaps, and opportunities to enhance how we recruit, train, and retain a diverse workforce. Subcommittees identified key topic areas and developed quantitative and free-text questions that were incorporated into a

Table 1. Characteristics of DEI needs assessment survey respondents (*N* = 317)

Category and Response	*N*	%
Identifies as part of URiM group		
Identifies as UriM	38	12
Not UriM	269	85
Prefer not to say/blank	10	3
Gender		
Women	174	55
Men	139	44
Transgender/nonbinary	1	0.3
Prefer not to say	3	0.9
Race (check all that apply), *n* = 310		
White	207	67
Black	21	7
Asian	57	18
American Indian	1	0.3
Other	3	1
Prefer not to say/blank	21	7
Ethnicity, *n* = 299		
Hispanic	29	10
Not Hispanic	261	87
Prefer not to say/blank	9	3
Career stage		
Faculty	245	77
Faculty, 10+ years	138	44
Faculty, 5–10 yr	63	20
Faculty, <5 yr	44	14
Fellow	64	20
Resident/medical student	8	3
Type of practice (check all that apply), *n* = 314		
Academic institution	301	96
Nonacademic community hospital	4	1
Private practice	7	2
Other	12	4

Definition of abbreviations: DEI = diversity, equity, and inclusion; URiM = underrepresented in medicine.

larger survey by the leadership team, which was then revised and finalized after review by the ATS Behavioral Science/Health Services Research Assembly Survey Subcommittee (*see* the data supplement). We distributed the anonymous DEI Needs Assessment Survey electronically to U.S. and Canadian pediatric pulmonologists in May 2022 through e-mail invitations to the Pediatrics Assembly membership, solicitation at the 2022 ATS International Conference, requests to pediatric pulmonology division directors and fellowship training program directors, and announcements on social media. The survey was available from May 13 to June 1, 2022. The Boston University Institutional Review Board granted the project exempt status.

We performed descriptive analyses of quantitative data using Microsoft Excel. For qualitative data, two independent coders (T.M.K. and M.N.U.) created a preliminary codebook that was based on the survey free-text questions. Using Braun and Clarke's thematic analysis approach (14), they independently reviewed and coded all free-text responses and iteratively revised the codebook. When the codebook was finalized, they applied this to all free-text questions, elucidated key themes based on the codes, and selected salient quotations that represented the key themes.

ATS Pediatric Pulmonology DEI Workshop

Members of the DEI-AG, along with an expert panel of academic medicine DEI leaders, including a medical school dean (D.S.W.), a pediatrics department chair (L.R.W.H.), and an institutional DEI official (M.L.L.), gathered virtually in July 2022 to review the results of the Pediatric Pulmonology DEI Needs Assessment Survey, share current best practices in the recruitment and retention of URiM trainees and faculty, and develop concrete strategies that can be broadly implemented in pediatric pulmonology training programs and pediatric pulmonary divisions to improve the recruitment and retention of URiM fellows and faculty. The leadership team strategically planned this 2-day workshop with the goal of creating a roadmap to address racial and ethnic diversity in pediatric pulmonology.

Document Preparation

After our 2-day workshop, we began the process of preparing the Official ATS Workshop Report. We collected input from all co-chairs and session moderators to develop an initial outline and assign sections for the final workshop report. We used postworkshop subcommittee meetings to establish report submission goals. Workshop members then reviewed literature related to DEI efforts in academic medicine to develop concrete recommendations to address DEI in recruitment, training, and retention. Finally, we collected drafts from various writing group members and compiled those drafts into a single report that was circulated, reviewed, and edited by all members of the workshop committee.

Results

Survey

Respondents. A total of 317 individuals from the United States and Canada responded to the Pediatric Pulmonology DEI Needs Assessment Survey, including 72 trainees and 245 pediatric pulmonologists, predominantly academic faculty. Although it would be difficult to extrapolate conclusions about the demographic makeup of pediatric pulmonologists from this survey's data, given that participation was voluntary, this is the largest known comprehensive collection of data about demographics and experiences of current and in-training pediatric pulmonologists. Characteristics of the survey respondents are shown in Table 1.

DEI climate. Table 2 describes the DEI climates at the institutional, departmental, and division levels as described by respondents. About half of the respondents felt that there was buy-in at their institution, department, and division to improve DEI, but fewer than half were aware of specific DEI policies related to hiring new faculty. Most participants reported DEI programs at the institutional level, including training on diversity issues and implicit bias, as well as specific programs for URiM faculty, but DEI programs specifically for pediatric pulmonology divisions were less commonly reported. Twenty-seven percent of

Table 2. DEI climate at respondent institutions

Survey Question and "Yes" Responses*	*n*	%[†]
DEI programs in place?		
Institution level	268	85
Department level	200	63
Division level	50	16
DEI policies for hiring?		
Institution level	123	39
Department level	105	33
Division level	60	19
Is there buy-in to improve DEI?		
Institution level	173	55
Department level	162	51
Division level	142	45
Formal reporting system for DEI concerns/complaints?[‡]	195	62
Training for faculty and trainees regarding DEI or implicit bias?	273	86
Are programs in place for URiM faculty?		
. . . for faculty development?	198	62
. . . for peer support?	168	53
. . . for mentoring?	176	56
Faculty training for advocacy or sponsorship of URiM junior faculty?	201	63

Definition of abbreviations: DEI = diversity, equity, and inclusion; URiM = underrepresented in medicine.
*Each item had "yes/no/I don't know" response options.
[†]Percentage reported was based on the number of "yes" responses among the entire group of survey respondents; *N* = 317.
[‡]Of note, 27% of respondents (*n* = 87) did not know if a formal reporting system for DEI concerns exists at their institutions.

respondents were not aware of the existence of a formal reporting system for DEI concerns at their institutions.

Experiencing and witnessing racism, discrimination, microaggressions, and gaslighting. The Needs Assessment Survey asked participants if they had ever experienced or witnessed racism (discrimination directed against a person or people on the basis of their race or ethnic group), other forms of discrimination (prejudicial treatment of different categories of people on the basis of the groups or classes to which they belong), microaggressions (a statement, action, or incident of indirect or subtle discrimination against members of a marginalized group), or gaslighting (manipulating someone by making them question their own reality or sanity).

Pediatric pulmonology trainees reported a high frequency of experiencing (65%) and/or witnessing (84%) at least one of these discriminatory behaviors (Table 3). Although 75% of the trainees knew the process for reporting these incidents, only 60% felt empowered to do so. These adverse experiences were also prevalent among pediatric pulmonology faculty: 63% experienced and 78% witnessed at least one of these discriminatory behaviors, yet fewer than half felt empowered to report them.

Free-text responses to the survey. Nearly half of the survey respondents (149; 47%) provided 347 unique free-text comments. Several key themes emerged related to DEI-related perceptions and challenges. Additionally, many recommended initiatives and solutions to address these concerns. Themes from free-text responses include the following (see Table 4 for specific quotes):

1. DEI is often discussed at the institutional and divisional levels, but there is a perceived lack of action and transparency regarding policies, recourse for breach of those policies, and clear goals and metrics of success regarding DEI.
2. Challenges to successful DEI initiatives include poor institutional support that perpetuates institutional racism and discrimination; low URiM recruitment and retention, leading to difficulty in fostering inclusive environments; and the burden of the "minority tax" (the disproportionate burden of uncompensated or undercompensated DEI-related activities on existing small numbers of URiM faculty) (15, 16).
3. DEI work should be respected and compensated, including salary support for DEI efforts. It should have explicit organizational goals, initiatives, and milestones with transparent reporting of results and efforts to address any disparities identified.
4. Clear attention and concerted efforts are needed to ensure a pathway for URiM groups starting in high school to enter medicine and pediatric pulmonology, specifically, with focus also on international medical graduate (IMG) recruitment.

Lessons Learned from DEI Expert Speakers during the Workshop

The three DEI expert speakers at the ATS Workshop included: Dr. David S. Wilkes, M.D., Dean Emeritus at the University of Virginia School of Medicine and Director of the Robert Wood Johnson Foundation's Harold Amos Medical Faculty Development Program; Dr. Monica L. Lypson, M.D., M.P.H.E., Vice Dean for Education at the Columbia University Vagelos College of Physicians and Surgeons; and Dr. Leslie R. Walker-Harding, M.D., Senior Vice President, Chief Academic Officer at Seattle Children's Hospital, Chair of the Department of Pediatrics, and Associate Dean at the University of Washington School of Medicine. Issues discussed by our experts included the following (for further details, *see* Table 5; *see* also the data supplement):

1. The important role of organizational leadership in setting inclusion and antiracism priorities for that organization, which includes performing a baseline DEI climate assessment; establishing goals and specific milestones to be achieved; and transparency with regard to collecting, tracking, and reporting progress toward achieving those goals.
2. Pathway programs into pediatric pulmonology need to start with long-term commitments to exposure, opportunities, and mentorship of students at all levels starting in high school, as well as partnering with historically Black colleges and universities, Hispanic-serving institutions (17), Tribal colleges and universities (18), and other predominantly minority-serving institutions to recruit students into our field. If we do not address the stagnant

Table 3. Reported experiences with racism, discrimination, microaggressions, and gaslighting

	Trainees		Faculty	
Reported Experience	% Experienced (*n* = 49)	% Witnessed (*n* = 49)	% Experienced (*n* = 202)	% Witnessed (*n* = 198)
Racism: prejudice, discrimination, or antagonism directed against a person or people on the basis of their membership in a particular racial or ethnic group, typically one that is a minority or marginalized	18	53	26	54
Other discrimination: the unjust or prejudicial treatment of different categories of people on the basis of the groups, classes, or other categories to which they belong or are perceived to belong	33	67	48	70
Microaggressions: a statement, action, or incident of indirect, subtle, or unintentional discrimination against members of a marginalized group such as a racial or ethnic minority	57	80	54	71
Gaslighting: manipulating someone by making them question their own reality or sanity	35	37	26	34
If yes, do you feel empowered to report these incidents?	60*		36†	49‡

*Among those who reported experiencing and/or witnessing incidents of discrimination.
†Among those who reported experiencing incidents of discrimination.
‡Among those who reported witnessing incidents of discrimination.

rates of URiM candidates' matriculation into and completion of undergraduate science-based education, we will never make downstream progress of recruiting a diverse workforce into pediatric pulmonology.

3. Commitment to recruitment of URiM students, trainees, and faculty includes intentional outreach from institutional leaders (department chairs, deans, etc.) to URiM candidates with phone calls, invitations, and support for second-look visits, as well as connecting potential candidates with URiM faculty. Institutional structures must also be in place to support new recruits.
4. Representation and visibility of URiM faculty at the podium; in leadership; in photos, advertisements, and websites; and on the "walls of distinguished faculty" that are often featured prominently at academic medical institutions are essential to promoting an inclusive environment for a diverse workforce.
5. Addressing the minority tax, including the lack of compensation for DEI activities and how those efforts detract from time spent on other activities that are more conventionally recognized by academic institutions for promotion (e.g., publications, grants, and educational products).

Subcommittee Recommendations to Improve Diversity in the Pediatric Pulmonology Workforce

Recommendations for Improving the Pathway into Pediatric Pulmonology

To ensure diversity in the workforce, pediatric pulmonologists will have to recruit and engage diverse learners early, invest in efforts to renew interest in pediatrics, and highlight opportunities within our subspecialty's workforce. "Enriching the pathway" includes programs or strategies focused on mentoring, leadership, and community engagement of underrepresented trainees to increase their representation in the workforce. The success of pathway programs has been demonstrated in other medical specialties such as family medicine and emergency medicine (19). Pathway programs can be implemented as early as elementary school with science, technology, engineering, and math (STEM)–focused groups and can continue through medical school and residency with subspecialty interest groups and electives (19–23). Critical elements of successful pathway programs include promoting interest in a specific field, providing mentorship, opportunities for skills development or research, and improving matriculation to undergraduate or medical school programs (22, 24–26). Additionally, many successful programs seek to reduce the financial burden of education through grants and scholarships (20, 21, 27). Professional organizations can play an integral role in facilitating the integration of URiM students within the workforce by providing a sense of professional identity, enhancing mentoring and networking opportunities, and providing support for travel to conferences (28, 29). Here, we outline several recommendations for recruiting a diverse workforce using approaches that have proven to be successful (Table 5). These strategies are categorized by training stages.

Table 4. Free-text responses from the pediatric pulmonology DEI needs assessment survey: 347 responses from 149 respondents

Key Themes and Subthemes	Relevant Quotations
Theme 1: DEI is often discussed, but there is a perceived lack of action and transparency	
• DEI topics are increasingly identified as important by institutions and organizations. • There is a perceived lack of transparency concerning DEI policies. • The influence of existing DEI policies on hiring, promotion, and recourse after reporting policy breaches is unclear. • There is limited institutional support and limited actionable steps related to DEI topics/concerns. • There is a general lack of dedicated resources and time for DEI activities/academic endeavors. • There need to be clear DEI goals and metrics of success.	"*Institution talks the talk but still learning to walk the walk*." "*A lot of lip service though limited action. Still all male panels, no recognition of wage gaps, lots of explanation for why this [DEI] doesn't apply in lots of scenarios*." "*[It] seems like the institution I'm currently at more likes to have the look of being 'DEI friendly' without actually taking concrete steps*." "*Our hospital had a very racist event happen that was not handled well. This led to much discussion about how racist the institution actually is. Leadership has since put out a strategic plan to become an 'antiracist' institution. However, there are no resources behind it. It's very disheartening*.'" "*Practice what you preach*." "*I would like to see transparency. Salary ranges and nonclinical/nonresearch effort allocation for development across the various groups (gender, race, etc.)*." "*Be more transparent and use objective measurements to explain decisions and how they're equitable*."
Theme 2: Challenges to DEI include poor institutional support and culture, low URiM recruitment and retention, and the burden of the "minority tax"	
• Institutional racism contributes to discrimination and to a culture that doesn't easily integrate new DEI ideas. • The role of URiM faculty and trainees in fostering an inclusive environment and facilitate DEI conversations is essential. • The burden of DEI initiatives and tasks creates a "minority tax" on a small group of URiM faculty without the dedication of adequate resources (training, institutional support, dedicated time, etc.). • Discrimination at the intersection of race/ethnicity, sex/gender identity, and/or sexual orientation remains a challenge.	"*Department and institution actively seek DEI in recruitment, but institutionalized racism can STILL undermine a CV/application*." "*[DEI effort] has significantly improved but we may need a demographic change to be even more impactful. We still have very few URiM faculty and trainees*." "*We need to be mindful of the minority tax—we need protected effort for those who champion DEI efforts*." "*It would be a lot more meaningful if this division dedicated concrete resources, e.g., funding or protected time, to DEI efforts, instead of pressuring minority faculty and staff into dedicating their own time without adjustment to their already heavy load. Also, the optics are not good when they hire the exact same phenotype for specific leadership or clinical roles*." "*Even though there is training about antiracism, the culture is not supportive toward URiM faculty. I couldn't find support even after different attempts about discrimination I faced in my institution*."
Theme 3: DEI work should be respected and compensated	
• Explicit institutional and divisional DEI goals, initiatives, and milestones are essential. • Paid positions for DEI efforts are essential. • There should be a DEI-inclusive culture with transparent policies and the use of open forums to discuss DEI topics/concerns. • There should be designated protected time and resources for the broader community (across division, department, and institutional levels) to participate in DEI activities and trainings rather than having to opt in/volunteer one's own time. • DEI efforts should translate to clinical care, patients, and the community.	"*[DEI] is an important concern and issue that needs to be constantly promoted instead of considered 'just a hobby*.'" "*Creating opportunities for dedicated FTE for the effort – not adding DEI work to existing responsibilities would be very beneficial*." "*Advocate for FTE for those doing DEI work. Come up with a recruitment/retention plan for fellows/faculty URiM and recruit heavily*." "*We need to cultivate a culture where the cis, straight, White males of today can see themselves as allies in antiracism efforts. Shouldn't fall on the shoulders of URiMs to make this happen but should be an aim*." "*I would like for my division to provide formalized experiences for all the faculty and trainees to learn how to address racism toward our patients, and toward faculty and trainees*." "*I would like there to be required training and education with reserved time for these activities instead of us having to find time around our clinical duties to attend optional sessions*."

(*Continued*)

Table 4. (*Continued*)

Key Themes and Subthemes	Relevant Quotations
Theme 4: Clear attention and concerted efforts are needed to ensure a pathway for URiMs into pediatric pulmonology	
• The leaky pathway from high school to medical school faculty remains a challenge. • There are specific gaps in IMG recruitment. • Opportunities to improve recruitment of URiM physicians include mentorship, sponsorship, the creation of opportunities for URiM engagement (e.g., clinical experiences and attending medical conferences), and direct engagement with the communities.	"*More specific attention to recruitment and retention of URiMs in pulmonary is essential, but the pipeline is leaky far upstream. We should be engaging trainees in medical school and before*." "*[My institution has] very active [DEI] efforts. Major challenge is pipeline. Working on this with undergraduate and even high school outreach*." "*Engage URiM in college and med school to improve the pipeline. By the time they get to fellowship the pool is so small, it is hard to pick diverse applicants*." "*I think it would be great if the faculty as a whole or individually took a more active role in working with minority student organizations at the medical student, undergraduate, or even high school levels*." "*Improve outreach to undergraduates and med students including mentoring*."

Definition of abbreviations: CV = curriculum vitae; DEI = diversity, equity, inclusion; FTE = full-time equivalent; IMG = international medical graduate; URiM = underrepresented in medicine.

Secondary/High School. Academic institutions have constructed a myriad of pathway programs to recruit learners from underrepresented backgrounds into medicine at the secondary school level (30). Longitudinal programs targeting young learners vary from summer programs to multiyear programs and aim to measurably increase the number of learners pursuing medicine. Long-term evaluation of the impact of such programs can take years, limiting rapid outcomes-based adjustments and replication. For many high school programs, the estimated success rate of attendance to any graduate school over the course of a decade is less than 20% (31). Successful programs have been multifaceted and address common barriers encountered by students, as described in Table 5 (32–35).

Undergraduate Education. Five major components have been identified in undergraduate programs that lead to the high academic performance of minorities: *1*) mentoring, *2*) financial support, *3*) academic support, *4*) psychosocial support, and *5*) professional opportunities (36). Students from marginalized groups often lack generational wealth, which may limit educational opportunities. Thus, high debt burden is an important limitation for URiM students who want to pursue a career in medicine. Health career recruitment programs that include financial aid through scholarships or loan forgiveness programs could help reduce racial disparities in student debt burdens for undergraduate and health professional schools (37, 38). Additionally, several studies show that participation in undergraduate STEM enrichment programs encourage URiM students to pursue and succeed in a STEM career (39, 40). Programs that pair URiM undergraduate students with URiM physicians and medical students have successfully recruited minority students to medicine and other careers in health care. This type of mentoring can include group discussions, facilitation, and exposure to the process for pursuing a career in medicine, health care, and research (41, 42).

Medical Education. Several strategies can be used to specifically target medical students and improve recruitment into the field of pediatrics (43). It is important to foster a sense of identity with pediatrics—and pediatric pulmonology—through medical student boot camps, mentoring programs, clinical electives, and research opportunities that specifically target URiM students (44). URiM mentors and faculty in these initiatives can offer powerful role modeling. Early exposure to pediatric pulmonology through the medical school curriculum and exposure to URiM academic physicians in different roles within medical centers is critically important. Recruitment strategies should include advertisements in minority national organizations such as the Association of Native American Medical Students, the Latino Medical Student Association, and the Student National Medical Association, among others.

Residency Training. Early exposure to pediatric pulmonology subspecialty training during medical school and residency is critical (45, 46). Minority physicians are more likely to practice in underserved areas; therefore, recruitment efforts should include residency programs in small community hospitals and underserved areas. Elective rotations for residents should emphasize hands-on experiences that will give learners a broad perspective into the role of a pediatric pulmonologist. Opportunities for authorship on research and quality improvement projects can increase the engagement of URiM trainees in pediatric pulmonology. Structured programs are important, such as the ATS's Minority Trainee Development Scholarship, which is available to individuals from URiM groups who are first authors on abstracts and provides resources to attend the ATS International Conference (47). Other pulmonary recruitment programming can be further tailored to provide mentoring and support networks for URiM trainees. Last, career mentorship, as opposed to research mentorship, can help to shape the career of a resident and provides an opportunity for pediatric pulmonologists to model good work-life balance. As a versatile specialty, pediatric pulmonologists practice in a variety of settings offering a keen opportunity for contact, role modeling, and advocacy for an array of learners, including our patients.

Recommendations for Supporting Pediatric Pulmonology Trainees

Creating an inclusive environment for trainees requires intentional efforts in

Table 5. Recommendations to optimize DEI in recruitment, training, faculty development, and retention of URiM pediatric pulmonologists

Specific Recommendations	References, Resources, and Examples of Success
Improving the Pathway into Medicine and Pediatric Pulmonology	
• Facilitate early exposure to recruit those from underrepresented groups into STEM and medicine fields.	Doctors Back to School [Toolkit] (48) A Leak in the STEM Pipeline: Taking Algebra Early (49)
• Provide longitudinal opportunities for exposure and investment (specifically, mentorship and academic support) around STEM subjects.	
• Address disproportionate attrition rates, including the disparate financial burdens, of URiM students before medical education debt even begins.	Kahn *et.al*. (50)
• Partner with community organizations, HBCUs, HSIs, and college/medical student groups (SNMA, The Latino Medical Student Association, etc.).	Bani (51) HBCU & HSI Partnerships (52) Heath (53)
• Provide research opportunities to expose high school students, undergraduate students, medical students, residents, and fellows to research in pediatric pulmonology.	Stimulating access to research in residency (StARR) R38 Independent Clinical Trial Not Allowed (54) Programs to Increase Diversity Among Individuals Engaged in Health-related Research (PRIDE) (55) T32 Training Program for Institutions that Promote Diversity (56) NIH Research Supplement to Promote Diversity in Health-related Research (57)
Recommendations for Supporting Pediatric Pulmonology Trainees	
Diversity data reporting • Encourage training programs to report the racial and ethnic diversity of their trainees and faculty. • Standardize reporting processes to aide prospective applicants in comparing across institutions.	Butler *et al*. (58)
Faculty training • Encourage training on cultural competence, implicit bias, antiracism, cultural competence, potential for miscommunication, inclusive language, and avoiding discrimination in the training environment. • Standardize the evaluation process to minimize bias; offer training in how to support trainees who experience bias and discrimination from patients.	Fernandes (59) Crites K *et al*. (60) Using Inclusive Language (61)
Curriculum • Recommend didactics, journal clubs, experiential learning (i.e., case-based simulations), and workshops on the impact of systemic racism and racism in health care on pediatric respiratory health disparities and DEI issues. • Provide education for fellows on cultural competence, implicit bias, and optimal communication strategies with diverse patient populations.	Lam and Giroux (62)
Scholarship • Provide opportunities to participate in local, regional, and national organizations focused on DEI and advocacy work. • This work should count as scholarly activity that meets fellowship requirements.	Community Outreach: Asthma (63) Why Diversity, Equity, and Inclusion Matter for Nonprofits (64) Importance of Diversity, Equity, and Inclusion (DEI) in the Nonprofit Sector (65)
Mentorship and sponsorship • Protect URiM faculty time for mentorship and scholarly oversight of URiM trainees. • Facilitate networking and sponsorship for trainees. • Provide financial support for fellows to attend conferences and networking events. • Nominate URiM trainees for leadership opportunities (moderate poster sessions, committee membership, co-author manuscript reviews, etc.).	Minority Trainee Development Scholarship (MTDS) (66) Annual ATS Diversity Forum (67) ATS Fellowships in Health Equity and Diversity (68) Harold Amos Medical Faculty Development Program (AMFDP) (69)
Supporting the Professional Development and Retention of URiM Faculty	
Transparency • Provide clear policies and data regarding salary equity and promotion.	Dandar (70) Visconti (71) UCSF Criteria for Advancement: Faculty Series (72)
Accountability • Collect, track, and report diversity data over time. • Establish goals and report your group's progress toward achieving those goals.	ATS Policy on Diversity and Inclusion (73) Hirsch and Tomaskovic-Devey (74) Faculty Scorecard (75) Sandhu (76)

(*Continued*)

Table 5. (*Continued*)

Specific Recommendations	References, Resources, and Examples of Success
• Offer formal reporting system without fear of retaliation or humiliation. • Enforce accountability regarding reported incidents of racism, harassment, discrimination, and outcomes in response to those reports.	Leitman *et al*. (77) Vargas *et al*. (78)
Dedicate concrete resources to DEI efforts • Include DEI leadership roles with job descriptions and compensation. • Increase awareness of the minority tax; DEI work should be compensated. • Count DEI activities toward promotion.	Guide to Best Practice in Faculty Retention (79) Significant Supporting Activity: Diversity, Equity, and Inclusion (DEI) (80)
Faculty recruitment and retention • Start the retention process as soon as faculty are hired. • Provide visible, transparent, standardized, attainable pathways toward promotion. • Standardize recruitment processes, interview procedures, and search committees. • Couple diversity hiring goals with other priority subject areas for your division. • Publicize in diverse venues. • Address unconscious bias training for interviewers. • Ensure diversity in the applicant pool before hiring decisions are made.	Faculty Hiring Checklist (81)
Improving diversity, equity, and inclusion in the pediatric pulmonology workforce	
• Conduct a climate survey to evaluate the current state of diversity and inclusion.	Stubbs (82)
• Declare and demonstrate “from the top down” that leadership is committed to prioritizing inclusion and antiracism in the division, department, and institution.	Diversity, Health, Equity, and Inclusion (DHE&I) at the Breathing Institute (83) Health Equity and Anti-Racism Action Plan (84) Wilkins (85) Blankenburg *et al*. (86) Dobbin and Kalev (87)
• Create an inclusive environment through representation; increase the visibility of URiM faculty, staff, and students in photos, advertisements, and websites. • Encourage diversity and representation in research teams, editorial boards, and reviewers for academic journals, presenters at conferences and other institutional speaking engagements, etc.	Greenfieldboyce (88) Konkwo *et al*. (89) Diversity Equity and Inclusion (90) Ruedinger *et.al*. (91)
• Encourage academic society conference programming on health disparities (including diseases that impact marginalized communities), health equity, and workforce diversity.	Sample sessions from the ATS 2021 International Conference: Postgraduate Course: Gender Equity in Academia: A Slippery Ladder and a Leaky Pipeline (92) Scientific Symposium: Uncovering Health Disparities in Pediatric Lung Disease (93) Starting Your Academic Career: Navigating Challenges Relevant to URMs in Academia (94)

Definition of abbreviations: ATS = American Thoracic Society; DEI = diversity, equity, and inclusion; HBCUs = historically Black colleges and universities; HSIs = Hispanic-serving institutions; SNMA = Student National Medical Association; STEM = science, technology, engineering, and math; URiM = underrepresented in medicine.

education, policy, professional development, and practice. Developing an institutional culture and climate focused on DEI requires explicit identification of racial and ethnic diversity as a priority for training programs through consistent messaging in all forms of communication, including websites and popular social media platforms (95). Training programs should develop a clear DEI curriculum and establish concrete steps to prioritize and support it. Only 29 of 51 pediatric pulmonary training programs (56.8%) participating in the Electronic Residency Application Service (ERAS) in 2023 mentioned DEI, and only 8 (15.7%) provided explicit messaging (e.g., visible links to institutional statements, DEI aims, or curriculum objectives) on their program websites (96). A local needs assessment survey may help to identify a program’s specific strengths and gaps to better inform DEI work during training (96). Fellowship programs should consider establishing DEI ambassadors to facilitate recruitment and help reinforce cultural awareness to allow for DEI issues to become part of everyday conversation. Here, we outline concrete recommendations for improving the DEI climate within training programs (Table 5).

The Importance of Metrics and Accountability. Fellowship training programs should be encouraged to publicly report data on the racial and ethnic diversity

of their trainees (97) and faculty to provide accurate counts of representation, allowing for comparison across programs. On the basis of the AAMC's definition of URiM, the four underrepresented minority groups currently reported are Black/African American, Hispanic/Latino, Native Hawaiian and Pacific Islander, and AIAN (11). However, other underrepresented minorities and minoritized groups (i.e., lesbian, gay, bisexual, transgender, queer, intersex, asexual, and others; [LGBTQIA+]) who do not meet AAMC criteria are often overlooked. Furthermore, minorities grouped together may not truly represent one large cultural group (e.g., multiple groups listed under "Asian"). Fellowship programs should present their training program racial/ethnic distribution in comparison to available data for pediatric pulmonology and pediatric residents nationwide as well as the regional and national population (10, 11, 98) to better inform trainees' decisions regarding where to pursue fellowship training.

Training and Education. Training programs should ensure an educational environment that is free of discrimination, racism, and microaggressions. Professional development programs should be implemented to teach faculty members cultural competence, awareness, and diversity. The goals for these programs should focus on improving understanding of the importance of social and cultural influences on the beliefs and behaviors of individual trainees to avoid discrimination in the training environment (99, 100). Formal and structured training is imperative for faculty and fellows to recognize, confront, and counteract racism and bias; to support colleagues and protect patients; to gain insight into the nuances of how biases affect our patient populations; and to create more robust research. Educating trainees in DEI curriculum fosters interest in DEI scholarship and provides tools for trainees to successfully engage in DEI initiatives (101). Training domains should encompass implicit bias, microaggression, inclusive language, personal racism, systemic racism, and LGBTQIA+ inclusion and should be integrated into standard fellowship curricula and presented in a variety of modalities. Examples include case-based simulation immersion, workshops, journal clubs and small groups, simulated scenarios with patients of different backgrounds, workshops that integrate experiential learning though the reenactment of social situations, the introduction of communication tools to respond to incidents of microaggressions, and opportunities for URiM faculty to mentor URiM trainees through formal networking and mentoring (101–105). If diversity or implicit bias trainings are implemented, follow-up is key to observe progress or regress if not reinforced by peers or media (106). Therefore, diversity training and education should be given frequently, not just once a year as a short "mandatory module." Finally, training programs should create anonymous-feedback tools to track progress and establish methods for trainees and faculty to report inequitable experiences within the training environment (99, 100, 103).

Scholarship. Fellowship programs should encourage and value participation in local organizations that support and advance DEI work in their communities. Trainee participation in such activities should be recognized as scholarly work. Partnership with neighborhood religious and nonreligious organizations and with local schools broadens exposure and impact across diverse populations in the community. Almost half of applications to pediatric pulmonology come from IMGs (107), which creates a unique opportunity for activities that include those international communities. Trainees could collaborate with institutions or professional organizations in their countries of origin, fostering academic exchanges such as case discussions and dissemination of guidelines, which should also be recognized as part of their scholarly work. Professional organizations such as the ATS can also encourage submission of such efforts to their conferences and organize sessions centered around community-based outreach and advocacy work. Strong outreach programs for trainees and faculty not only advocate for racial and health equity but can also enhance mentorship and improve health outcomes (108). By learning from existing initiatives and establishing similar ones, programs can actively promote direct involvement and mentorship by fellows and faculty.

Professional Development. Mentorship is key to the successful career development and satisfaction of URiM trainees and faculty members (109). URiM faculty may better understand the academic environment that URiM trainees face and be better positioned to provide support and guidance. Thus, whenever possible, programs should include at least one URiM mentor within each trainee's scholarly oversight committee with protected time for that faculty mentor (16, 110). Advice on the appropriate career track, how to negotiate for a competitive faculty package, and guidance on visa or IMG status are integral to the success of a trainee or junior faculty member. After recognition of the lack of URiM faculty members in the field, innovative approaches to mentorship should be considered by professional societies. Creating a core group of URiM mentors that is available to all pediatric pulmonology trainees and junior faculty nationwide should be considered to address this gap. Additionally, programs should invite guest speakers from diverse backgrounds to increase the visibility of URiM faculty and provide opportunities for external mentorship for URiM trainees (111).

Recommendations to Support the Professional Development and Retention of URiM Faculty in Pediatric Pulmonology

Despite efforts of U.S. medical schools to increase the recruitment and retention of faculty members from historically URiM groups, the proportion of Black, Hispanic/Latino, Indigenous American, Alaska Native, and Pacific Islander faculty members remains less than 10% (107). Data suggest that although recruitment initiatives have increased, URiM faculty are less likely to hold senior rank (112), are promoted at lower rates (113), and experience and report more discrimination (114). Many are choosing to leave academic medicine because of experiences of racism, isolation, lack of mentorship, disparities in clinical workload, barriers to tenure and promotion, and disparities in diversity efforts (the minority tax) (16, 115). Here, we provide recommendations for the development and retention of URiM pediatric pulmonary faculty and strategies that those in leadership positions can use to improve the workplace climate and increase the representation, promotion, and compensation of URiM faculty in pediatric pulmonary medicine (Table 5).

Training for Leadership and Faculty. Many healthcare organizations have committed to policies to ensure equity and representation of URiM groups among faculty and leadership. However, these policies are most effective when DEI is embedded as a core value at individual,

group, and leadership levels. Moreover, focusing on inclusive leadership models with DEI as a leadership competency is key to dismantling systems of oppression and prejudice in health care (116). However, evidence suggests that DEI training in healthcare settings is either lacking or insufficient for behavior change and that most leadership and faculty development programs do not address DEI as a professional competency (117–119). Key recommendations for facilitating DEI training include *1*) working with institutional leaders to financially invest in effective and ongoing antiracism and mandatory implicit bias training to ensure that recruitment and candidate selection is impartial and inclusive (120, 121); *2*) embedding antiracism curricula and antibias training workshops into divisional conferences, seminars, clinical case reviews, and fellowship training to increase awareness, effective allyship, and action (122, 123); *3*) creating DEI resource banks where tools and resources (seminars, journal clubs, articles, books, videos, etc.) curated by divisions and departments are available for local use; and *4*) committing time to attending DEI seminars and workshops at ATS and other professional conferences to engage with colleagues and to learn and teach each other best practices on antiracism.

Promoting Faculty Development to Nurture the Success of URiM Faculty. Most institutions with pediatric pulmonary training programs offer faculty development as a requirement of the Accreditation Council for Graduate Medical Education (117). These traditional faculty development programs are designed as knowledge- and skills-based sessions that often do not address the specific needs of URiM faculty. However, effective mentoring programs can promote professional achievement, build community, and drive successful outcomes for URiM faculty. Traditional near-peer mentoring affords junior faculty the opportunity to learn from someone who recently navigated a similar career stage. In comparison, reverse mentoring programs (124) promote the professional development of the mentor and mentee through the bidirectional exchange of knowledge and experiences. This type of mentoring relationship breaks down the hierarchical nature of the mentoring relationship and can also mitigate the minority tax on senior URiM faculty. Telementoring is another strategy, which allows mentoring across institutions. The ATS has an active mentoring program, and URiM faculty should be encouraged to develop mentoring relationships beyond their home institutions. Mentoring should also be incentivized by institutions, as these relationships may lead to recruitment of URiM faculty.

As stated earlier, the retention of URiM faculty should start at the time of hiring by providing visible, transparent, equitable, and attainable pathways toward promotion, in terms of academic rank and leadership positions. Additionally, ensuring that URiM faculty have the opportunity to increase academic productivity is imperative. Institutions can address this through accountability groups or programs for URiM faculty with the goal of increasing manuscript production, improving scientific writing skills, and serving as a collaborative network to navigate academic careers. These programs can provide social support and reflective experiences in addition to mentored hands-on training.

Achieving Equity in Compensation. The minority tax is the burden or tax of additional responsibilities placed on URiM faculty with regard to achieving diversity. This tax is not shared by all members of the faculty and can have the effect of diverting URiM faculty away from activities that are valued during the promotion process. These efforts are often uncompensated or undercompensated and often fall on a small group of URiM faculty; in fact, few programs provide URiM faculty funding or protected time for DEI activities. Contributions to professional DEI activities should be explicitly included in the guidelines for promotion at every level. Faculty members should also be compensated in protected time or salary support for their DEI efforts.

Additionally, salary transparency is an important step toward closing pay inequities and addressing morale and retention of URiM faculty. The gender pay gap among United States physicians ranges between 8% and 28% (125, 126). The median compensation for White male physicians is higher than for non-White male physicians and for women of all races/ethnicities in medicine. Organizations utilize national benchmarking data to determine physician pay scales. An individual physician's pay may depend on a variety of factors that are vulnerable to racial and ethnic bias. To address these factors, organizations should *1*) conduct salary equity studies using local and institution-specific data to identify disparities in pay; *2*) evaluate the metrics used to determine compensation and incentives to ensure that systemic biases that affect individual compensation are not contributing to the pay gap; *3*) close pay gaps where they exist; and *4*) establish clear criteria for determining base salaries, incentives and bonuses, promotions, and administrative supplements for leadership roles, continually adapting practices and policies to achieve and sustain equity within the organization.

Reporting Bias and Discrimination. Nearly every medical school and academic medical center has a website or resources for guidance on how to report bias and discrimination. However, those websites do not contain data on the number of reported incidents or the outcomes of those reports. Faculty and trainees should be able to safely report instances of discrimination, harassment, microaggressions, racism, and other concerns without fear of retaliation or humiliation. A psychologically safe space to report concerns is an important contributor to promote accountability and professionalism (85, 95, 127), as well as transparency regarding data and statistics related to reported DEI issues for accountability. Strategies to improve reporting include *1*) the implementation and encouragement of an institution-wide, multimodal reporting system in which faculty, fellows, residents, students, staff, and patients can report bias-related incidents, discrimination, racism, micro- and macroaggressions, and racial abuse; *2*) demonstration of ongoing and transparent commitment to address and reconcile critical incidents that have been reported or witnessed; *3*) the requirement of all managers to be trained in conflict resolution and appropriate handling reports to create a safe space for staff to report these incidents; and *4*) the inclusion of metrics on reducing incidents of discrimination, racism, and micro- and macroaggressions in annual review cycles and promotions.

Limitations

The focus of this report is DEI for racial and ethnic groups categorized as URiM by the AAMC. However, we acknowledge that this definition does not include all racial and ethnic groups, individuals from the

LGBTQIA+ community, or international medical graduates. Nonetheless, many of the concepts, challenges, and recommendations discussed here should be applied to DEI across all of these domains and should address the intersectionality of minoritized race/ethnicity, gender, and sexual orientation. We also chose not to focus on gender equity in this report, as a recent ATS publication has previously focused on this issue (104). Additionally, the Needs Assessment Survey was used to obtain baseline data on the race/ethnicity and experiences of as many pediatric pulmonologists and trainees as possible in the United States and Canada. However, participation in the survey was voluntary, and our data were collected from individuals rather than institutions. Therefore, demographic data cannot be assumed to be representative of the entire pediatric pulmonology community. That said, given that we requested voluntary participation in a survey about DEI issues, one might expect an overrepresentation of individuals from underrepresented groups. Among our 317 respondents, 67% self-identified as White, whereas only 10% self-identified as Hispanic or Latino, and only 7% self-identified as Black, which is consistent with prior demographic data about pediatric pulmonology.

Conclusion

Although this work identified DEI issues as a priority for the Pediatrics Assembly to address, it is clear that much uncertainty exists regarding how to successfully implement strategies to combat racism and implement metrics to translate words into measurable action. Through ascertaining racial and ethnic demographics as well as DEI-related attitudes and experiences from several hundred members of the pediatric pulmonary community, and summarizing best practices and strategies from leaders in the DEI field, a foundation has been developed on which our field and the medical community can build. The DEI-AG aims to empower others within the Pediatrics Assembly and partner with professional organizations to begin to implement recommended strategies to support URiM trainees and faculty and increase the diversity of the workforce.

This official workshop report was prepared by an *ad hoc* subcommittee of the ATS Pediatrics Assembly.

Members of the subcommittee are as follows:

Robyn T. Cohen, M.D., M.P.H. (*Chair*)[1*‡]
Erick Forno, M.D., M.P.H. (*Co-Chair*)[2*‡]
Theresa A. Laguna, M.D., M.S.C.S. (*Co-Chair*)[3*‡]
Stephanie Lovinsky-Desir, M.D., M.S. (*Co-Chair*)[4*‡]
Paul E. Moore, M.D. (*Co-Chair*)[6*‡]
Beverley J. Sheares, M.D., M.S. (*Co-Chair*)[7*‡]
Nicole Stephenson, M.D. (*Co-Chair*)[8*‡]
Dionne J. Adair, M.B. B.S.[9]
Folashade Afolabi, M.D.[10]
Vivek Balasubramaniam, M.D.[11]
Guillermo J. Beltran Ale, M.D.[12]
Lauren M. Castner, D.O.[13]
Princy Ghera, M.D.[10]
Andrea Heras, M.D.[14]
Kamyron Jordan, M.D.[15]
Traci M. Kazmerski, M.D., M.S.[16,17*‡]
Ngoc P. Ly, M.D., M.P.H.[18]
Monica L. Lypson, M.D., M.H.P.E.[5‡]
Tanya M. Martinez-Fernandez, M.D.[10]
Pooja E. Mishra, M.D.[2]
Indra Narang, M.D.[19]
John B. Palla, M.D.[20]
Yadira M. Rivera-Sanchez, M.D.[10]
Ignacio E. Tapia, M.D.[21]
Demet Toprak, M.D.[3]
Cherie A. Torres-Silva, M.D., M.P.H., M.Ed.[22]
Mfonobong N. Udoko, M.D.[22*]
Leslie R. Walker Harding, M.D.[23‡]
David S. Wilkes, M.D.[24‡]

*Co-lead of the writing committee.

‡Speaker at the workshop.

[1]Division of Pediatric Pulmonary and Allergy, Boston Medical Center, Boston University School of Medicine, Boston, Massachusetts; [2]Division of Pulmonary Medicine, Children's Hospital of Pittsburgh, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; [3]Division of Pulmonary and Sleep Medicine, Department of Pediatrics, University of Washington School of Medicine, Seattle, Washington; [4]Division of Pediatric Pulmonology and [5]Department of Medicine, Columbia University Vagelos College of Physicians and Surgeons, New York, New York; [6]Division of Pediatric Allergy, Immunology, and Pulmonary Medicine, Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, Tennessee; [7]Division of Pediatric Pulmonology, Allergy, Immunology and Sleep Medicine, Yale University School of Medicine, New Haven, Connecticut; [8]Division of Pediatric Pulmonology, University of North Carolina School of Medicine, Chapel Hill, North Carolina; [9]Division of Pediatric Pulmonology, Augusta University, Augusta, Georgia; [10]Division of Pediatric Pulmonology and Sleep Medicine, University of Texas-Southwestern Medical Center, Dallas, Texas; [11]Division of Pediatric Pulmonology and Sleep Medicine, University of Wisconsin-Madison, Madison, Wisconsin; [12]Division of Pulmonary Medicine, University of Alabama Heersink School of Medicine, Birmingham, Alabama; [13]Department of Pediatric Pulmonary and Sleep Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin; [14]Division of Pediatric Pulmonary Medicine, Weill Cornell Medicine, New York, New York; [15]Section of Pediatric Pulmonology and Sleep Medicine, Department of Pediatrics, University of Colorado Denver, Denver, Colorado; [16]Division of Adolescent and Young Adult Medicine, Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania;[17]Center for Innovative Research on Gender Health Equity (CONVERGE), University of Pittsburgh, Pittsburgh, Pennsylvania; [18]Division of Pediatric Pulmonology, Department of Pediatrics, University of California San Francisco, San Francisco, California; [19]Division of Respiratory Medicine, Department of Pediatrics, Program in Translational Medicine, SickKids Research Institute, The Hospital for Sick Children, Toronto, Ontario, Canada; [20]Division of Pulmonary and Sleep Medicine, Department of Pediatrics, Ann and Robert H. Lurie Children's Hospital of Chicago, Feinberg School of Medicine, Northwestern University, Chicago, Illinois; [21]Division of Pulmonary and Sleep Medicine, Perelman School of Medicine at the University of Pennsylvania, Sleep Center, The Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; [22]Department of Pediatrics, University of Cincinnati and Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; [23]Department of Pediatrics, Seattle Children's Hospital, School of Medicine, University of Washington, Seattle, Washington; and [24]School of Medicine, University of Virginia, Charlottesville.

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References

1 Gomez LE, Bernet P. Diversity improves performance and outcomes. *J Natl Med Assoc* 2019;111:383–392.
2 Cooper LA, Powe NR. Disparities in patient experiences, health care processes, and outcomes: the role of patient-provider racial, ethnic, and language concordance. New York: The Commonwealth Fund; 2004. Available from: https://www.commonwealthfund.org/publications/fund-reports/2004/jul/disparities-patient-experiences-health-care-processes-and.
3 Alsan M, Garrick O, Graziani G. Does diversity matter for health? Experimental evidence from Oakland. *Am Econ Rev* 2019;109: 4071–4111.
4 Saha S, Komaromy M, Koepsell TD, Bindman AB. Patient-physician racial concordance and the perceived quality and use of health care. *Arch Intern Med* 1999;159:997–1004.
5 Greenwood BN, Hardeman RR, Huang L, Sojourner A. Physician-patient racial concordance and disparities in birthing mortality for newborns. *Proc Natl Acad Sci USA* 2020;117:21194–21200.
6 Marrast LM, Zallman L, Woolhandler S, Bor DH, McCormick D. Minority physicians' role in the care of underserved patients: diversifying the physician workforce may be key in addressing health disparities. *JAMA Intern Med* 2014;174:289–291.
7 Race and ethnicity in the United States: 2010 census and 2020 census. Washington, DC: U.S. Census Bureau; 2021 [updated 2022 Aug 18; accessed 2022 Sep 1]. Available from: https://www.census.gov/library/visualizations/interactive/race-and-ethnicity-in-the-united-state-2010-and-2020-census.html.
8 Diversity in medicine: facts and figures 2019. Executive summary. Washington, DC: Association of American Medical Colleges; 2019. Available from: https://www.aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019.
9 Table 13. Practice specialty, males by race/ethnicity, 2018. Washington, DC: Association of American Medical Colleges; 2018. Available from: https://www.aamc.org/data-reports/workforce/data/table-13-practice-specialty-males-race/ethnicity-2018.
10 Harris C, Katkin J, Cataletto M, Dorkin H, Laskosz L, Ruch-Ross H. US pediatric pulmonology workforce. *Pediatr Pulmonol* 2019;54:444–450.
11 Montez K, Omoruyi EA, McNeal-Trice K, Mack WJ, Yemane L, Darden AR, *et al.* Trends in race/ethnicity of pediatric residents and fellows: 2007–2019. *Pediatrics* 2021;148:e2020026666.
12 Nelson BA, Boyer D, Lahiri T, Oermann CM, Rama JA. A statement on the current status and future needs of the pediatric pulmonology workforce: Pipeline Workgroup. *Pediatr Pulmonol* 2023;58:690–696.
13 Noah TL, Tolleson-Rinehart S, Esther CR, Peterson-Carmichael SL, Davis SD, Moore PE. The future of pediatric pulmonology: a survey of division directors, assessment of current research funding, and discussion of workforce trends. *Pediatr Pulmonol* 2023;58: 653–661.
14 Braun V, Clarke V. What can "thematic analysis" offer health and wellbeing researchers? *Int J Qual Stud Health Well-being* 2014;9: 26152.
15 Trejo J. The burden of service for faculty of color to achieve diversity and inclusion: the minority tax. *Mol Biol Cell* 2020;31:2752–2754.
16 Rodríguez JE, Campbell KM, Pololi LH. Addressing disparities in academic medicine: what of the minority tax? *BMC Med Educ* 2015; 15:6.
17 Hispanic-serving institutions (HSIs). Washington, DC: U.S. Department of Education; n.d. Available from: https://sites.ed.gov/hispanic-initiative/hispanic-serving-institutions-hsis/.
18 Tribal colleges and universities. Washington, DC: U.S. Department of Education; n.d. Available from: https://sites.ed.gov/whiaiane/tribes-tcus/tribal-colleges-and-universities/.
19 Boatright D, Tunson J, Caruso E, Angerhofer C, Baker B, King R, *et al.* The impact of the 2008 Council of Emergency Residency Directors (CORD) Panel on Emergency Medicine Resident Diversity. *J Emerg Med* 2016;51:576–583.
20 Wheat JR, Leeper JD. Pipeline programs can support reforms in medical education: a cohort study of Alabama's rural health leaders pipeline to engage community leaders. *J Rural Health* 2021;37: 745–754.
21 Naritoku WY, Furlong MA, Knollman-Ritschel B, Kaul KL. Enhancing the pipeline of pathologists in the United States. *Acad Pathol* 2021;8: 23742895211041725.
22 Muneno J, Mead K, Mapelli P, Davis E, Withy K. Medical school hotline: pipeline to health careers in Hawai'i. *Hawaii J Med Public Health* 2017;76:55–58.
23 Hill K, Raney C, Jackson K, Murdock HM, Dawson E, Hamilton R, *et al.* A new way of evaluating effectiveness of URM summer pipeline programs. *Adv Med Educ Pract* 2021;12:863–869.
24 Health career recruitment for minority students. Madison, WI: County Health Rankings & Roadmaps; 2022. Available from: https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/health-career-recruitment-for-minority-students.
25 Muppala VR, Janwadkar RS, Rootes A, Prakash N. Creating a pipeline for minority physicians: medical-student-led programming. *Cureus* 2021;13:e14384.
26 Mains TE, Wilcox MV, Wright SM. Medical education resources initiative for teens program in Baltimore: a model pipeline program built on four pillars. *Educ Health (Abingdon)* 2016;29:47–50.
27 Shi H, Lee KC. Bolstering the pipeline for primary care: a proposal from stakeholders in medical education. *Med Educ Online* 2016;21:32146.
28 Segarra VA, Blatch S, Boyce M, Carrero-Martinez F, Aguilera RJ, Leibowitz MJ, *et al.* Scientific societies advancing STEM workforce diversity: lessons and outcomes from the Minorities Affairs Committee of the American Society for Cell Biology. *J Microbiol Biol Educ* 2020; 21:21.1.8.
29 Pachter LM, Kodjo C. New Century Scholars: a mentorship program to increase workforce diversity in academic pediatrics. *Acad Med* 2015; 90:881–887.
30 Danner OK, Lokko C, Mobley F, Dansby M, Maze M, Bradley B, *et al.* Hospital-based, multidisciplinary, youth mentoring and medical exposure program positively influences and reinforces health care career choice: "The Reach One Each One Program early Experience." *Am J Surg* 2017;213:611–616.
31 Vick AD, Baugh A, Lambert J, Vanderbilt AA, Ingram E, Garcia R, *et al.* Levers of change: a review of contemporary interventions to enhance diversity in medical schools in the USA. *Adv Med Educ Pract* 2018;9: 53–61.
32 Winkleby MA. The Stanford Medical Youth Science Program: 18 years of a biomedical program for low-income high school students. *Acad Med* 2007;82:139–145.
33 Simone K, Ahmed RA, Konkin J, Campbell S, Hartling L, Oswald AE. What are the features of targeted or system-wide initiatives that affect diversity in health professions trainees? A BEME systematic review: BEME Guide No. 50. *Med Teach* 2018;40:762–780.
34 Burns ER. Anatomy of a successful K-12 educational outreach program in the health sciences: eleven years experience at one medical sciences campus. *Anat Rec* 2002;269:181–193.
35 Holden L, Berger W, Zingarelli R, Siegel E. After-school program for urban youth: evaluation of a health careers course in New York City high schools. *Inf Serv Use* 2015;35:141–160.
36 Smedley BD, Stith AY, Colburn L, Evans CH; Institute of Medicine. The right thing to do, the smart thing to do: enhancing diversity in the health professions: summary of the Symposium on Diversity in Health Professions in Honor of Herbert W. Nickens, M.D. Washington, DC: National Academies Press; 2001.
37 Dugger RA, El-Sayed AM, Dogra A, Messina C, Bronson R, Galea S. The color of debt: racial disparities in anticipated medical student debt in the United States. *PLoS One* 2013;8:e74693.
38 Mishory J, Huelsman M, Kahn S. How student debt and the racial wealth gap reinforce each other. Washington, DC: The Century Foundation; 2019. Available from: https://tcf.org/content/report/bridging-progressive-policy-debates-student-debt-racial-wealth-gap-reinforce/.
39 Jackson KM, Winfield LL. Realigning the crooked room: Spelman claims a space for African American women in STEM. *Peer Rev* 2014;16: 9–12.
40 Lee DM, Harmon K. The Meyerhoff Scholars Program: changing minds, transforming a campus. *Metrop Univ* 2013;24:55–70.
41 SHARP (summer HIV/AIDS research program). San Francisco: San Francisco Department of Public Health, Population Health Division; n.d. Available from: https://sharpinternship.org/.

42 Ghazzawi D, Pattison D, Horn C. Persistence of underrepresented minorities in STEM fields: are summer bridge programs sufficient? *Front Educ* 2021;6:630529.
43 Mallett P, Thompson A, Bourke T. Addressing recruitment and retention in paediatrics: a pipeline to a brighter future. *Arch Dis Child Educ Pract Ed* 2022;107:57–63.
44 Shields PH. A survey and analysis of student academic support programs in medical schools focus: underrepresented minority students. *J Natl Med Assoc* 1994;86:373–377.
45 Macy ML, Leslie LK, Boyer D, Van KD, Freed GL. Timing and stability of fellowship choices during pediatric residency: a longitudinal survey. *J Pediatr* 2018;198:294–300.e1.
46 Nelson B, Medek S, Kharofa J, Struve T, Barrett W. The impact of a multidisciplinary third-year oncology elective rotation on decisions to pursue oncologic careers and oncology exposure. *Int J Radiat Oncol Biol Phys* 2020;108:886–890.
47 Underrepresented trainee development scholarship. New York: American Thoracic Society; n.d. Available from: https://conference.thoracic.org/attendees/awards-scholarships/mtds.php.
48 Doctors back to school [Toolkit]. Chicago: American Medical Association Minority Affairs Consortium [accessed 2022 Nov 30]. Available from: https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/public-health/doctors-back-to-school-kit_0.pdf.
49 A leak in the STEM pipeline: taking algebra early. U.S. Department of Education InformED Initiative; 2018 [accessed 2022 Nov 30]. Available from: https://www2.ed.gov/datastory/stem/algebra/index.html.
50 Kahn S, Huelsman M, Mishory J. Bridging progressive policy debates: how student debt and the racial wealth gap reinforce each other. New York: Roosevelt Institute; 2019 [accessed 2022 Nov 30]. Available from: https://rooseveltinstitute.org/wp-content/uploads/2020/07/RI_Student-Debt-and-RWG-201909.pdf.
51 Bani A. UPenn is partnering with five HBCUs to attract diverse students to its medical school. *The Plug* 2022 June 27 [accessed 2022 Nov 30]. Available from: https://tpinsights.com/upenn-is-partnering-with-an-hbcu-to-attract-diverse-students-to-its-medical-school/.
52 HBCU & HSI partnerships. Bridgetown, Barbados: Ross University School of Medicine; 2023 [accessed 2022 Nov 30]. Available from: https://medical.rossu.edu/admissions/hbcu-hsi-partnerships.
53 Heath S. CommonSpirit, morehouse partner, to boost Black doctor workforce. Newton, MA: Tech Target-PatientEngagementHIT; 2020 [accessed 2022 Nov 30]. Available from: https://patientengagementhit.com/news/commonspirit-morehouse-partner-to-boost-black-doctor-workforce.
54 Stimulating access to research in residency (StARR) R38 independent clinical trial not allowed. Bethesda, MD: Office of Extramural Research, National Institutes of Health; 2022 [accessed 2023 Apr 14]. Available from: https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-23-006.html.
55 Programs to increase diversity among individuals engaged in health-related research (PRIDE). Bethesda, MD: National Heart, Lung, and Blood Institute; 2014 [accessed 2023 Apr 14]. Available from: https://www.nhlbi.nih.gov/grants-and-training/training-and-career-development/diversity/pride.
56 T32 training program for institutions that promote diversity. Bethesda, MD: Office of Extramural Research National Institutes of Health; 2021 [accessed 2023 Apr 14]. Available from: https://grants.nih.gov/grants/guide/rfa-files/rfa-hl-22-001.html.
57 NIH research supplement to promote diversity in health-related research. Bethesda, MD: National Institutes of Health: Research Training and Career Development; 2017 [accessed 2023 Apr 14]. Available from: https://researchtraining.nih.gov/programs/other-training-related/SUPP-D.
58 Butler PD, Fowler JC, Meer E, Rosen IM, Reyes IM, Berns JS. A blueprint for increasing ethnic and racial diversity in US residency training programs. *Acad Med* 2022;97:1632–1636.
59 Fernandes P. Creating a diversity and inclusion training program. *Business News Daily* 2023 June 28 [accessed 2023 Nov 30]. Available from: https://www.businessnewsdaily.com/9782-diversity-training.html.
60 Crites K, Johnson J, Scott N, Shanks A. Increasing diversity in residency training programs. *Cureus* 2022;14:e25962.
61 Using inclusive language. New York: Department of Pediatrics, Columbia University; 2023 [accessed 2022 Nov 30]. Available from: https://www.pediatrics.columbia.edu/using-inclusive-language.
62 Lam JTH, Giroux RJP. Resident equity, diversity, and inclusion committee: a mechanism for programmatic change. *Acad Med* 2022; 97:770.
63 Community outreach: asthma. Irvine, CA: Miller's Pediatric Pulmonology Fellowship Program, University of California, Irvine; 2021 [accessed 2022 Nov 30]. Available from: https://www.millerspedpulmfellowship.com/community-outreach.
64 Why diversity, equity, and inclusion matter for nonprofits. Washington, DC: National Council of Nonprofits; 2023 [accessed 2022 Nov 30]. Available from: https://www.councilofnonprofits.org/running-nonprofit/diversity-equity-and-inclusion/why-diversity-equity-and-inclusion-matter.
65 Importance of diversity, equity, and inclusion (DEI) in the nonprofit sector. San Diego, CA: San Diego Foundation; 2021 [accessed 2022 Nov 30]. Available from: https://www.sdfoundation.org/news-events/sdf-news/dei-in-the-nonprofit-sector/.
66 Minority Trainee Development Scholarship (MTDS). New York: American Thoracic Society Scholarships; 2020 [accessed 2022 Nov 30]. Available from: https://www.thoracic.org/professionals/career-development/ats-scholarships/minority-trainee-development-scholarship.xml.
67 Annual ATS diversity forum. New York: American Thoracic Society; 2023 [accessed 2022 Nov 30]. Available from: https://twitter.com/atscommunity/status/1632529446295969793.
68 ATS fellowships in health equity and diversity. New York: American Thoracic Society; 2023 [accessed 2022 Nov 30]. Available from: https://www.thoracic.org/about/health-equality/ats-fellows-health-equality.php.
69 Harold Amos Medical Faculty Development Program (AMFDP). Princeton, NJ: Robert Wood Johnson Foundation; 2001 [updated 2022; accessed 2022 Nov 30]. Available from: https://www.rwjf.org/en/grants/active-funding-opportunities/2022/harold-amos-medical-faculty-development-program.html.
70 Dandar VM, Lautenberger DM, Garrison GE. Promising practices for understanding and addressing salary equity at US medical schools. Washington, DC: Association of American Medical Colleges; 2019 [accessed 2022 Nov 30]. Available from: https://store.aamc.org/promising-practices-for-understanding-and-addressing-faculty-salary-equity-at-u-s-medical-schools.html.
71 Visconti D. Keeping compliant with expanding state and local equal pay laws. Littler; 2019 [accessed 2022 Nov 30]. Available from: https://www.littler.com/publication-press/publication/keeping-compliant-expanding-state-and-local-equal-pay-laws.
72 UCSF criteria for advancement: faculty series. San Francisco, CA: UCSF Faculty Academic Affairs; 2014 [revised 2019 Feb 12; accessed 2022 Nov 30]. Available from: https://facultyacademicaffairs.ucsf.edu/academic-personnel/academic-review-and-advancement/Criteria-for-Advancement-for-Faculty.pdf.
73 ATS policy on diversity and inclusion. New York: American Thoracic Society Governance; 2023 [accessed 2022 Nov 30]. Available from: https://www.thoracic.org/about/governance/ats-diversity-inclusion-policy.php.
74 Hirsch E, Tomaskovic-Devey D. Metrics, accountability, and transparency: a simple recipe to increase diversity and reduce bias; in what works? Evidence-based ideas to increase diversity, equity, and inclusion in the workplace. Amherst, MA: Center for Employment Equity, University of Massachusetts Amherst; 2018 [accessed 2022 Nov 30]. Available from: https://www.umass.edu/employmentequity/sites/default/files/What_Works.pdf.
75 Faculty scorecard. San Francisco, CA: Office of Diversity and Outreach, University of California, San Francisco; 2022 [accessed 2022 Nov 30]. Available from: https://diversity.ucsf.edu/data-reports/faculty-scorecard.
76 Sandhu G. Michigan Action Progress System (MAPS). Ann Arbor, MI: Department of Surgery, University of Michigan School of Medicine; 2022 [accessed 2022 Nov 30]. Available from: https://medicine.umich.edu/dept/surgery/michigan-promise/environment/michigan-action-progress-system-maps.

77 Leitman IM, Muller D, Miller S. Implementation of an online reporting system to identify unprofessional behaviors and mistreatment directed at trainees at an academic medical center. *JAMA NetwOpen* 2022;5: e22446.
78 Vargas EA, Cortina LM, Settles IH, Brassel ST, Perumalswami CR, Johnson TRB, *et al.* Formal reporting of identity-based harassment at an academic medical center: incidence, barriers, and institutional responses. *Acad Med* 2022;97:1029–1037.
79 Guide to best practice in faculty retention. New York: Office of the Provost, Columbia University; 2018 [accessed 2022 Nov 30]. Available from: https://provost.columbia.edu/sites/default/files/content/Faculty%20Diversity%20and%20Inclusion/BestPracticesFacultyRetention.pdf.
80 Significant supporting activity: diversity, equity, and inclusion (DEI). Boston, MA: Office of Faculty Affairs, Faculty of Medicine, Harvard University; 2021 [accessed 2022 Nov 30]. Available from: https://fa.hms.harvard.edu/files/hmsofa/files/ssa_dei.aug2021.pdf.
81 Faculty hiring checklist. Boston, MA: Boston University; 2021 [accessed 2022 Nov 30]. Available from: https://www.bumc.bu.edu/camed/faculty-hiring-checklist/.
82 Stubbs C. Harvard Medical School's diversity and inclusion climate survey results. Cambridge, MA: Faculty of Arts and Sciences, Harvard University; 2021 [accessed 2022 Nov 30]. Available from: https://science.fas.harvard.edu/files/division-of-science/files/climate_survey_results_overview_-_feb_2021.pdf?m=1614182540.
83 Diversity, health, equity, and inclusion (DHE&I) at the Breathing Institute. Aurora, CO: Children's Hospital of Colorado; 2022 [accessed 2022 Nov 30]. Available from: https://www.childrenscolorado.org/research-innovation/research-area/pulmonary-medicine/diversity-health-equity-inclusion/.
84 Health equity and anti-racism action plan. Seattle, WA: Seattle Children's Hospital; 2021 [accessed 2022 Nov 30]. Available from: https://www.seattlechildrens.org/globalassets/documents/about/health-equity-and-anti-racism-action-plan.pdf.
85 Wilkins CH, Williams M, Kaur K, DeBaun MR. Academic medicine's journey toward racial equity must be grounded in history: recommendations for becoming an antiracist academic medical center. *Acad Med* 2021;96:1507–1512.
86 Blankenburg R, Poitevien P, Gonzalez Del Rey J, Aylor M, Frohna J, McPhillips H, *et al.* Dismantling racism: association of pediatric program directors' commitment to action. *Acad Pediatr* 2020;20: 1051–1053.
87 Dobbin F, Kalev A. Making discrimination and harassment complaint systems better. In: What works? Evidence-based Ideas to increase diversity, equity, and inclusion in the workplace. Amherst, MA: Amherst Center for Employment Equity, University of Massachusetts; 2018 [accessed 2022 Nov 30]. Available from: https://www.umass.edu/employmentequity/sites/default/files/What_Works.pdf.
88 Greenfieldboyce N. Academic science rethinks all-too-white 'Dude Walls' of honor. *NPR Health News Letter* 2019 August 25 [accessed 2022 Nov 30]. Available from: https://www.npr.org/sections/health-shots/2019/08/25/749886989/academic-science-rethinks-all-too-white-dude-walls-of-honor.
89 Konkwo C, Fitzsousa E, Chan SM, Muhammad M, Anderson N, Reisman A. Revisiting the exhibits – medical student reflections on changes to the institutional portraiture at a US medical school. *J Gen Intern Med* 2022;37:4209–4215.
90 Diversity equity and inclusion. Aurora, CO: Department of Pediatrics, School of Medicine, University of Colorado Anschutz Medical Campus; 2019 [accessed 2022 Nov 30]. Available from: https://medschool.cuanschutz.edu/pediatrics/about-us/diversity-equity-and-inclusion.
91 Ruedinger E, Evans YN, Balasubramaniam V. Abolishing racism and other forms of oppression in scholarly communication. *J Adolesc Health* 2021;69:10–13.
92 Postgraduate course: gender equity in academia: a slippery ladder and a leaky pipeline, ATS 2021 International Conference, 2021 [accessed 2021 May 14]. Available from: https://conference.thoracic.org/program/resources/2021/ats2021-sessions-printout6.pdf.
93 Scientific symposium: uncovering health disparities in pediatric lung disease [abstract]. *Am J Respir Crit Care Med* 2022;205:B19.
94 Starting your academic career: navigating challenges relevant to URMs in academia. New York: American Thoracic Society URM Mentoring Program; 2023 [accessed 2022 Nov 30]. Available from: https://www.thoracic.org/about/health-equality/urm-mentoring-program/2021-2022/starting-academic-career.php.
95 Rosenkranz KM, Arora TK, Termuhlen PM, Stain SC, Misra S, Dent D, *et al.* Diversity, equity and inclusion in medicine: why it matters and how do we achieve it? *J Surg Educ* 2021;78:1058–1065.
96 Yemane L, Ramirez M, Guerin A, Floyd B, Okorie CUA, Ling W, *et al.* Sparking a movement, not a moment: framework and outcomes from a pediatrics department-wide coalition to advance anti-racism. *Acad Pediatr* 2022;23:886–892.
97 Estimating the race and ethnicity of pediatric trainees and certified pediatricians: an interim report based on data collected from 2018-2021. Chapel Hill, NC: American Board of Pediatrics; 2021 [updated 2023 May 17; accessed 2022 Oct 21]. Available from: https://www.abp.org/content/latest-race-ethnicity-data-pediatricians-pediatric-trainee.
98 Brotherton SE, Etzel SI. Graduate medical education, 2020–2021. *JAMA* 2021;326:1088–1110.
99 Elsas Parish B, Dogra N, George RE. A discourse analysis of General Medical Council (GMC) guidelines for the inclusion of cultural diversity issues in medical education and practice. *Med Teach* 2022;44: 679–687.
100 Leslie KF, Sawning S, Shaw MA, Martin LJ, Simpson RC, Stephens JE, *et al.* Changes in medical student implicit attitudes following a health equity curricular intervention. *Med Teach* 2018;40:372–378.
101 Powell C, Yemane L, Brooks M, Johnson C, Alvarez A, Bandstra B, *et al.* Outcomes from a novel graduate medical education leadership program in advancing diversity, equity, and inclusion. *J Grad Med Educ* 2021;13:774–784.
102 Olzmann JA. Diversity through equity and inclusion: the responsibility belongs to all of us. *Mol Biol Cell* 2020;31:2757–2760.
103 Sotto-Santiago S, Mac J, Duncan F, Smith J. "I didn't know what to say": responding to racism, discrimination, and microaggressions with the OWTFD approach. *MedEdPORTAL* 2020;16:10971.
104 Thomson CC, Riekert KA, Bates CK, Jena AB, Borok Z, McCallister JW, *et al.* Addressing gender inequality in our disciplines: report from the Association of Pulmonary, Critical Care, and Sleep division chiefs. *Ann Am Thorac Soc* 2018;15:1382–1390.
105 Ward-Gaines J, Buchanan JA, Angerhofer C, McCormick T, Broadfoot KJ, Basha E, *et al.* Teaching emergency medicine residents health equity through simulation immersion. *AEM Educ Train* 2021;5: S102–S107.
106 Bezrukova K, Spell CS, Perry JL, Jehn KA. A meta-analytical integration of over 40 years of research on diversity training evaluation. *Psychol Bull* 2016;142:1227–1274.
107 ERAS® statistics. Washington, DC: Association of American Medical Colleges, n.d. [accessed 2022 Oct 21]. Available from: https://www.aamc.org/data-reports/interactive-data/eras-statistics-data.
108 How outreach programs can improve health outcomes. Oakland, CA: Health Outreach Partners; 2012 [accessed 2022 Oct 21]. Available from: https://outreach-partners.org/2012/02/01/how-outreach-programs-can-improve-health-outcomes/.
109 Bonifacino E, Ufomata EO, Farkas AH, Turner R, Corbelli JA. Mentorship of underrepresented physicians and trainees in academic medicine: a systematic review. *J Gen Intern Med* 2021;36:1023–1034.
110 Flores G, Mendoza FS, DeBaun MR, Fuentes-Afflick E, Jones VF, Mendoza JA, *et al.* Keys to academic success for under-represented minority young investigators: recommendations from the Research in Academic Pediatrics Initiative on Diversity (RAPID) National Advisory Committee. *Int J Equity Health* 2019;18:93.
111 Tatem GB, Gardner-Gray J, Standifer B, Alexander K. While you don't see color, I see bias: identifying barriers in access to graduate medical education training. *ATS Scholar* 2021;2:544–555.
112 Fassiotto M, Flores B, Victor R, Altamirano J, Garcia LC, Kotadia S, *et al.* Rank Equity Index: measuring parity in the advancement of underrepresented populations in academic medicine. *Acad Med* 2020;95:1844–1852.
113 Nunez-Smith M, Ciarleglio MM, Sandoval-Schaefer T, Elumn J, Castillo-Page L, Peduzzi P, *et al.* Institutional variation in the

promotion of racial/ethnic minority faculty at US medical schools. *Am J Public Health* 2012;102:852–858.
114 Mahoney MR, Wilson E, Odom KL, Flowers L, Adler SR. Minority faculty voices on diversity in academic medicine: perspectives from one school. *Acad Med* 2008;83:781–786.
115 Rodríguez JE, Campbell KM, Mouratidis RW. Where are the rest of us? Improving representation of minority faculty in academic medicine. *South Med J* 2014;107:739–744.
116 Mullin AE, Coe IR, Gooden EA, Tunde-Byass M, Wiley RE. Inclusion, diversity, equity, and accessibility: From organizational responsibility to leadership competency. *Healthc Manage Forum* 2021;34:311–315.
117 ACGME program requirements for graduate medical education in pediatric pulmonology. Chicago: Accreditation Council for Graduate Medical Education; 2020 [updated 2023 Jul 1; accessed 2022 Oct 21]. Available from: https://www.acgme.org/globalassets/pfassets/programrequirements/330_pediatricpulmonology_2023.pdf.
118 Soklaridis S, Lin E, Black G, Paton M, LeBlanc C, Besa R, *et al.* Moving beyond 'think leadership, think white male': the contents and contexts of equity, diversity and inclusion in physician leadership programmes. *BMJ Leader* 2022;6:146–157.
119 Sharda S, Dhara A, Alam F. Not neutral: reimagining antiracism as a professional competence. *CMAJ* 2021;193:E101–E102.
120 Celedón JC. Building a diverse workforce in pulmonary, critical care, and sleep medicine. *ATS Scholar* 2021;2:145–148.
121 Capers Q IV. How clinicians and educators can mitigate implicit bias in patient care and candidate selection in medical education. *ATS Scholar* 2020;1:211–217.
122 Wu D, Saint-Hilaire L, Pineda A, Hessler D, Saba GW, Salazar R, *et al.* The efficacy of an antioppression curriculum for health professionals. *Fam Med* 2019;51:22–30.
123 Noone D, Robinson L, Niles C, Narang I. Unlocking the power of allyship. Giving health care workers the tools to take action against inequities and racism. *NEJM Catal* 2022;1–16. DOI: 10.1056/CAT.21.0358. Available from: https://catalyst.nejm.org/doi/full/10.1056/CAT.21.0358.
124 Morris LV. Reverse mentoring: untapped resource in the academy? *Innov High Educ* 2017;42:285–287.
125 Lo Sasso AT, Armstrong D, Forte G, Gerber SE. Differences in starting pay for male and female physicians persist; explanations for the gender gap remain elusive. *Health Aff (Millwood)* 2020;39:256–263.
126 2021 Physician compensation report: fifth annual study. San Francisco: Doximity; 2021. [accessed 2022 Feb 5]. Available from: https://c8y.doxcdn.com/image/upload/v1/Press%20Blog/Research%20Reports/Doximity-Compensation-Report-2021.pdf.
127 McMichael B, Kemp M, Engler T, Bamdad M, Perrone E, Kwakye G, *et al.* The Michigan Action Progress System (MAPS): enhancing a culture of professionalism, accountability, and psychological safety. *J Surg Educ* 2023;80:7–10.