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Trends in the Diversity of Pediatric Faculty: 2000 to 2020

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Abstract

OBJECTIVE: Academic medicine diversity is important for addressing health disparities and training the next generation. A recent study highlighted the lack of diversity among pediatric trainees over time. However, trends in US pediatric faculty diversity have not been clearly illuminated. The aim of this study is to evaluate pediatric faculty diversity trends and compare racial/ethnic representation between pediatric faculty and the US population.

METHODS: Repeat cross-sectional study of the Association of American Medical Colleges Faculty Roster of pediatric faculty from 2000 to 2020. Trends in sex, race, ethnicity, and rank were compared with the Cochran-Armitage test. Data on faculty race/ethnicity were compared with the general and child population by using US Census Bureau data.

RESULTS: Trends in underrepresented in medicine (URiM) faculty representation significantly increased at all ranks: professor (+3.5%, $P < .0001$), associate professor (+3.0%, $P = .0001$), and assistant professor (+2.5%, $P = .0001$). URiM male representation remained unchanged ($P = .14$), whereas significantly increased trends occurred in URiM female representation (+3.4%, $P < .0001$). African American/Black males significantly decreased representation at associate (−0.4%, $P = .04$) and assistant professor levels (−0.6%, $P < .0001$), and American Indian/Alaska Native males significantly decreased representation at the assistant professor rank (−0.1%, $P < .0001$). The percentage of URiM pediatric faculty representation was considerably lower compared with 2020 US overall and longitudinal child population representation.

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CONCLUSION: The stagnation of URiM male representation and lack of faculty diversity reflective of the US population may have a critical impact on the ability to recruit/retain a diverse pediatric workforce and promote equitable care.

Diversity of the health care workforce is critical for the provision of culturally effective care that could improve health outcomes, increase access to care, and enhances the pool of medically trained policymakers and health care leaders.¹ The racial and ethnic demographics of children living in the United States are rapidly changing. According to the most recent report from the US Census Bureau, the proportion of children from diverse racial and ethnic minority groups, including American Indian/Alaska, Asian, Black, Hispanic, and Native Hawaiian/other Pacific Islander is increasing,² which is important for pediatricians to recognize given the numerous disparities in health outcomes associated with a child's race and/or ethnicity.³ The etiologies for the observed disparities in health outcomes among children are complex and, in part, are due to historical and current oppressive structures and policies. Reducing these disparities will require multiple strategies, one of which is a more racially and ethnically diverse pediatric workforce, as suggested by the Association of American Medical Colleges (AAMC) Diversity 3.0 Initiative.⁴

Workforce diversity has been increasingly emphasized in academic medicine, especially regarding the recruitment and retention of physicians underrepresented in medicine (URiM). Despite the evidence supporting a more diverse workforce,⁵⁻¹¹ the diversity of the physician workforce does not reflect the racial and ethnic diversity of the United States. According to the AAMC, 5.0% and 5.8% of all active physicians identify as African American/Black and Hispanic/Latino, respectively.¹² These statistics decrease to 3.6% and 3.2% of medical school faculty identifying as African American/Black and Hispanic/Latino, respectively.¹³ In addition, a recent study revealed declines in the racial and ethnic (Black and Hispanic) composition of clinical academic faculty representation relative to the overall population.¹⁴ Within academic medicine, racial and ethnic diversity is critical in preparing medical students and residents to practice within racially and ethnically heterogeneous populations and for promoting biomedical research to address disparities in health access and outcomes in underresourced communities.¹

Previous studies within pediatrics evaluating the racial and ethnic diversity of the academic pathway have produced mixed results. A recent study revealed that the representation of pediatric trainees identifying as URiM did not improve significantly over a 12-year period.¹⁵ Within academic pediatrics, a study using data from the Academic Pediatric Association (APA) found that membership increased among child health professionals who identified as URiM.¹⁶ Yet, a cross-sectional study of racial and ethnic diversity among departments of pediatrics across the country revealed that diversity was poor overall and decreased as academic rank increased.¹⁷ However, trends in the diversity of pediatric faculty have not been clearly illuminated, nor has there been an exploration of the nuances in faculty diversity from a pediatric perspective.

Our aims with this study are to (1) evaluate trends over time from 2000 to 2020 in the diversity of pediatric faculty, (2) compare racial and ethnic representation between pediatric

faculty and the overall US population in 2020, and (3) compare URiM faculty trends with a racially and ethnically concordant patient population.

METHODS

Design

We performed a repeat cross-sectional study of race, ethnicity, sex, and rank of pediatric faculty using AAMC Faculty Rosters from 2000 to 2020. The AAMC Medical Minority Applicant Registry defines URiM as self-identification as African American/Black, Hispanic, American Indian/Alaska Native, or Native Hawaiian/Pacific Islander.¹⁸ This report follows the Strengthening the Reporting of Observational Studies in Epidemiology reporting guideline for cross-sectional studies. This study was considered exempt from human subject research by the Wake Forest University Health Sciences Institutional Review Board.

Data Sources

The AAMC initiated the Faculty Roster in 1966 to collect information on the characteristics of full-time faculty members at US medical schools accredited by the Liaison Committee on Medical Education.¹⁹ On the basis of data collected by the AAMC Faculty Roster Survey, race and ethnicity in this study were defined as non-Hispanic African American/Black, referred to as African American/Black, non-Hispanic Native American/Alaska Native, referred to as Native American/Alaska Native, non-Hispanic Native Hawaiian/Pacific Islander, referred to as Native American/Pacific Islander, and Hispanic or Latino (of any race, including multirace, Hispanic), referred to as Hispanic. The non-Hispanic Asian, non-Hispanic White, non-Hispanic multiracial, and non-Hispanic other categories were included in the totals but not separately characterized. We obtained 2020 US population data from the US Census Bureau.²⁰ We obtained revised US Census Bureau pediatric population estimates from 2000 to 2020 from the KIDS COUNT Data Center.²¹ The racial and ethnic categories used throughout this article reflect those reported in the original data sources.

Statistical Analysis

Results were analyzed by using descriptive statistics. The inclusion of racial and ethnic groups in the URiM category was based on the AAMC definition of URiM. Therefore, multiracial and “other” race and ethnicity categories were not included in the URiM category. Because the unknown race category could not be further characterized, it was excluded from analyses. URiM proportions (number of URiM faculty/total number of faculty) were calculated for all years (2000–2020) by race, ethnicity, sex, and rank; the Clopper-Pearson exact binomial method was used to calculate 95% confidence intervals. To determine if there was a significant trend in URiM representation over time, proportions (URiM/total) were compared by race and ethnicity, sex, and rank with the Cochran-Armitage test from all years, 2000 to 2020. Results were considered statistically significant at a 2-tailed P value $<.05$. SAS (version 9.4, Cary, NC) was used for all analyses.

RESULTS

Trends in Faculty Diversity Over Time

A total of 367 863 pediatric faculty members were included. Overall, the unknown race and ethnicity category accounted for 9417 (2.6%) of pediatric faculty; the non-Hispanic multiracial category accounted for 7470 (2.0%) of pediatric faculty.

Between 2000 and 2020, the total number of pediatric faculty increased from 9510 (2000) to 17 033 (2020). Significantly increased trends occurred in URiM faculty representation at all ranks: professor (4.2% in 2000 to 7.7% in 2020, $P < .0001$), associate professor (7.4% in 2000 to 10.4% in 2020, $P < .0001$), and assistant professor (11.3% in 2000 to 13.9% in 2020, $P < .0001$) (Table 1; Fig 1).

URiM male representation remained unchanged over time at all ranks (4.0% in 2000 to 4.0% in 2020, $P = .14$), whereas a significantly increased trend occurred in URiM female representation at all ranks (4.4% in 2000 to 7.8% in 2020, $P < .0001$) (Table 1; Fig 2). Among the different URiM groups, female faculty significantly increased representation at all ranks except for American Indian/Alaska Native professors and assistant professors.

American Indian/Alaska Native males significantly decreased representation at the assistant professor rank (0.17% in 2000 to 0.04% in 2020, $P < .0001$). African American/Black males significantly decreased representation at the associate (1.4% in 2000 to 1.0% in 2020, $P = .04$) and assistant professor ranks (1.6% in 2000 to 1.0% in 2020, $P < .0001$), and significantly decreased representation across all ranks (1.32% in 2000 to 1.04% in 2020, $P < .0001$). Hispanic males significantly increased representation at the professor rank (2.15% in 2000 to 2.76% in 2020, $P = .05$); and Native Hawaiian/Pacific Islander males significantly increased representation at the professor rank (0% in 2000 to 0.05% in 2020, $P = .001$) (Table 2).

US Population Comparison

In 2020, URiM pediatric faculty representation was considerably lower compared with representation in the 2020 US population: African American/Black, 4.4% versus 12.1%, American Indian/Alaska Native, 0.2% versus 1.1%, Native Hawaiian/Pacific Islander, 0.08% versus 0.2%, Hispanic, 7.1% versus 18.7% (Fig 3). Between 2000 and 2020, URiM pediatric faculty representation did not reflect the changing demographic profile of the US population of racially and ethnically concordant (Fig 4).

DISCUSSION

This repeat cross-sectional study of US pediatric faculty from 2000 to 2020 provides a specialty-specific examination of the trends in racial, ethnic, and sex diversity by rank in departments of pediatrics. This analysis advances the field by highlighting the progress that has been in increasing the diversity within pediatric departments, but also identifying areas in which reinforcement of the pipeline is needed. Overall, our study suggested an increase in representation of individuals identifying as URiM; however, a more nuanced examination revealed that the improvements in representation were driven primarily by

individuals identifying as female. Representation of individuals who identified as URiM male did not increase and for certain groups, decreased in representation. In addition, URiM pediatric faculty did not reflect the racial and ethnic diversity of the 2020 US overall population or the changing child demographic between 2000 and 2020.

Understanding the source of the increase in representation of URiM pediatric faculty will need additional investigation, especially because the AAMC data does not delineate between clinical and nonclinical pediatric faculty. It is unclear what group is driving the increase. Previous work examining URiM pediatric trainee trends revealed significantly increased representation trends among certain specialties.¹⁵ Similarly, an examination of the pediatric subspecialty workforce by Rimsza et al found that most subspecialists are academic faculty, and the percentage of women and those from “minority groups” increased over time.²² Another possibility is that female URiM pediatricians are increasingly entering the academic workforce beyond training due to a desire to teach, mentor, and other lifestyle factors.^{23–26}

The decrease in representation of URiM males suggests the pathway of URiM males entering academic pediatrics may be especially vulnerable and require targeted attention. The pathway into academic medicine begins long before entering medical school. Boys and young men of color and, particularly, Black boys and young men are disproportionately impacted by racialized educational environments. Starting in primary school, Black boys are subjected to higher rates of disciplinary actions compared with White-identifying peers.^{27–29} As they advance to secondary school, Black adolescents and young men are subject to increased policing, and the disciplinary consequences grow in scale and impact.^{30–32} A downstream consequence is that Black men enroll in higher education and graduate at lower rates than Black women.³³ In addition, there has been a decreasing trend of applications and matriculation rates of Black males to medical school that has only modestly shifted in the past few years.³⁴ When Black males do enter academic medicine, they have the highest rates of not being promoted and leaving academic medicine among all racial, ethnic, and gender groups at the assistant professor level and the second-highest rate at the associate professor level.³⁵

Although the field of pediatrics is limited in its scope to influence the academic pathway before medical school entry, there may be opportunities for pediatricians to engage URiM medical students, especially URiM male medical students, about pediatrics as a career. Mentorship is a known factor that is important to the success of URiM medical students, trainees, and faculty.^{25,36,37} Although effective mentorship can occur between racially and/or ethnically discordant mentors and mentees, the literature suggests concordant mentor and mentee relationships are actively sought out by URiM trainees because of shared lived experiences and having a mentor “who looks like you.”³⁸ URiM faculty mentors strongly influence URiM trainees’ career decisions to pursue academic careers.^{25,36,39,40} The lack of URiM faculty may make it hard to envision a career in academics. For men, finding a mentor who shares the same sex, race, and ethnicity can be a significant challenge in pediatric medicine in which 72.4% of trainees and 63.8% of practicing US pediatricians identify as women.^{41–43} This has the potential to limit the potential viability of pediatrics as a career for Black men because of a lack of mentors.

Studies focused specifically on URiM academic pediatric faculty highlight additional barriers to advancement, such as implicit bias and racial discrimination by peers and patients, lack of community, and feelings of isolation.^{44,45} The paucity of diversity in the academic pediatric workforce may impede efforts to create more equitable health care environments for the rapidly diversifying patient populations. Additionally, faculty diversity is an important factor in enriching the learning environment for all trainees, and even more so for those who identify as URiM.⁴⁶ Recommendations from the American Academy of Pediatrics Policy Statement, *Enhancing Pediatric Workforce Diversity and Providing Culturally Effective Pediatric Care: Implications for Practice, Education, and Policy Making*, emphasize the need for institutional commitment to advancing diversity, especially in leadership roles.⁴⁷ Tracking the hiring and promotion of URiM faculty will help academic medical centers better understand gaps, opportunities for change, and strategic planning. URiM faculty should be included on all faculty search and hiring committees.⁴⁸ Structured programs that pair URiM faculty with peer and senior mentors can be beneficial.^{25,38} The role of sponsorship has been highlighted as a means of combating the multitude of barriers that lead to attrition among URiM faculty.^{49–52} Other recommendations include more robust upstream efforts through mentorship partnerships with medical student organizations like the Student National Medical Association and the Latino Medical Student Association, and URiM-specific programs for URiM trainees and early career faculty, such as the APA New Century Scholars and APA Research in Academic Pediatrics Initiative on Diversity scholars program.^{53–55}

There are several limitations to this study that should be acknowledged. First, the authors of this study relied on data obtained from the AAMC Faculty Roster for which medical schools provided faculty sex, race, and ethnicity; therefore, we were unable to verify whether these data were self-reported or based on secondary data. In addition, not all faculty are necessarily pediatricians, a level of granularity unavailable in the AAMC Roster; as such, we were unable to measure nonphysician faculty, and different approaches may be necessary to enhance nonphysician diversity. The AAMC Faculty Roster is limited to full-time faculty, so we are unable to evaluate whether increases in representation were due to shifts in part-time versus full-time appointments. Moreover, the non-Hispanic multiracial and unknown categories may have undercounted the URiM population, but these categories were a small percentage of the overall sample. Additionally, we recognize there is a spectrum of gender identities that were not captured in the AAMC Faculty Roster, which may require targeted diversity and inclusion efforts. Finally, in the absence of individual-level data, our analysis does not allow us to measure factors associated with changes in observed rates, so a causal relationship cannot be established.

We recommend that future data be disaggregated, institution-specific, and provide race, ethnicity, sex, and rank information, including hiring and promotion details. Academic medical institutions already collect these data voluntarily as part of their accreditation process.^{56,57} These data should be publicly available to visualize trends. Dashboards could highlight institutions successful at the recruitment and retention of diverse faculty, allowing for programmatic sharing and potential innovation. It may also encourage accountability.

CONCLUSION

In the past 20 years, the percentage of URiM pediatric academic faculty significantly increased but was primarily driven by the increase in URiM female representation, whereas male URiM representation remained stagnant and even decreased in African American/Black males. The percentage of URiM faculty representation was considerably lower in comparison with the overall US representation and US population of racially and ethnically concordant children. The stagnation of URiM male representation and lack of faculty diversity reflective of the US population may have a critical impact on the field of pediatrics' ability to recruit and retain a diverse workforce and promote equitable care. Academic centers should examine their recruitment and hiring practices to identify and root out areas of potential bias. Retention efforts should focus on early and specific mentorship, deliberate sponsorship, an awareness of the multiple challenges experienced by URiM faculty, and regular progress monitoring through dashboards and faculty climate surveys.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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ABBREVIATIONS

AA	African American
AAMC	Association of American Medical College
AI	American Indian
AN	Alaska Native
APA	Academic Pediatric Association
NH	Native Hawaiian
Hisp	Hispanic
URiM	underrepresented in medicine
US	United States

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WHAT'S KNOWN ON THIS SUBJECT:

Workforce diversity is increasingly emphasized in academic medicine. A recent study revealed minimal improvements over time in the proportions of underrepresented in medicine (URiM) pediatric trainees; however, studies assessing the diversity of pediatric faculty trends are limited.

WHAT THIS STUDY ADDS:

Using cross-sectional data from 2000 to 2020, we found that trends in URiM proportions increased for women, remained unchanged for men, and decreased for African American/Black men. The percentage of URiM pediatric faculty representation was considerably lower compared with United States population representation.

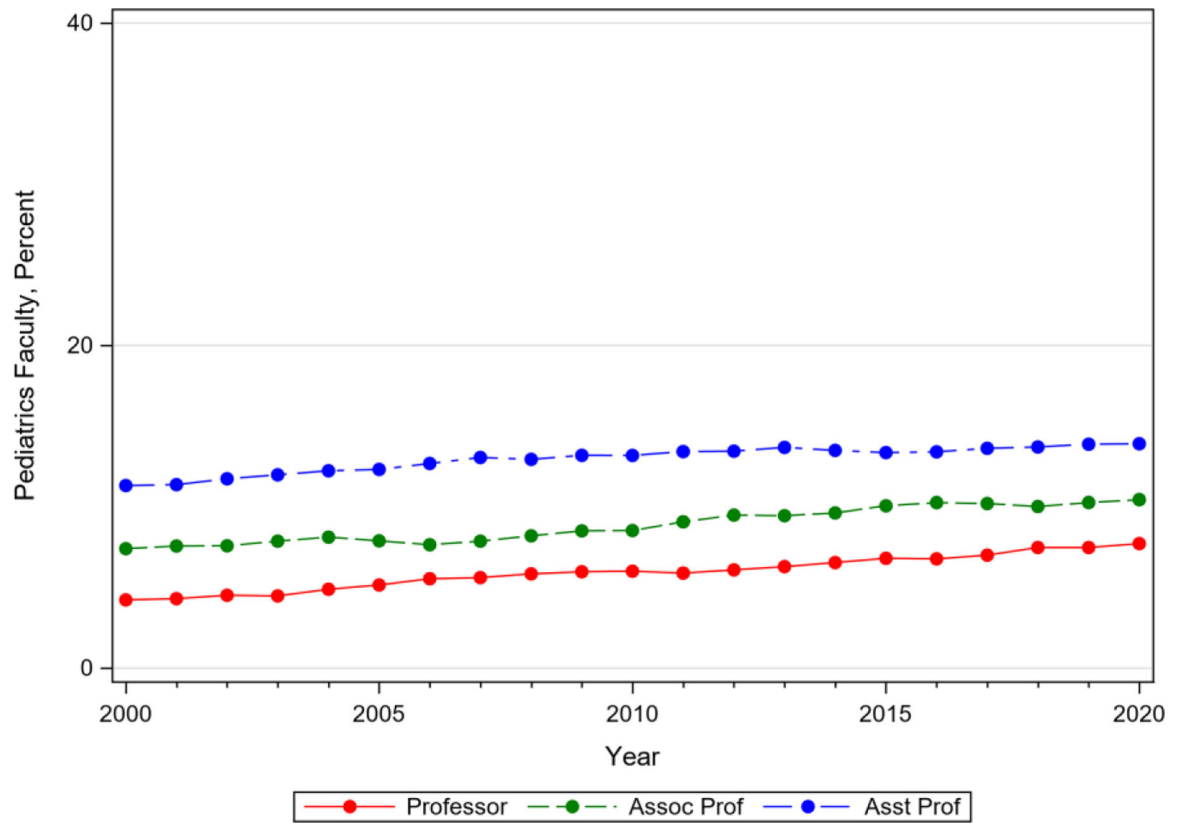


FIGURE 1. Trends in pediatric faculty by rank and URiM status, 2000–2020. Abbreviations: Assoc Prof, Associate Professor; Asst Prof, Assistant Professor; URM, Underrepresented in Medicine

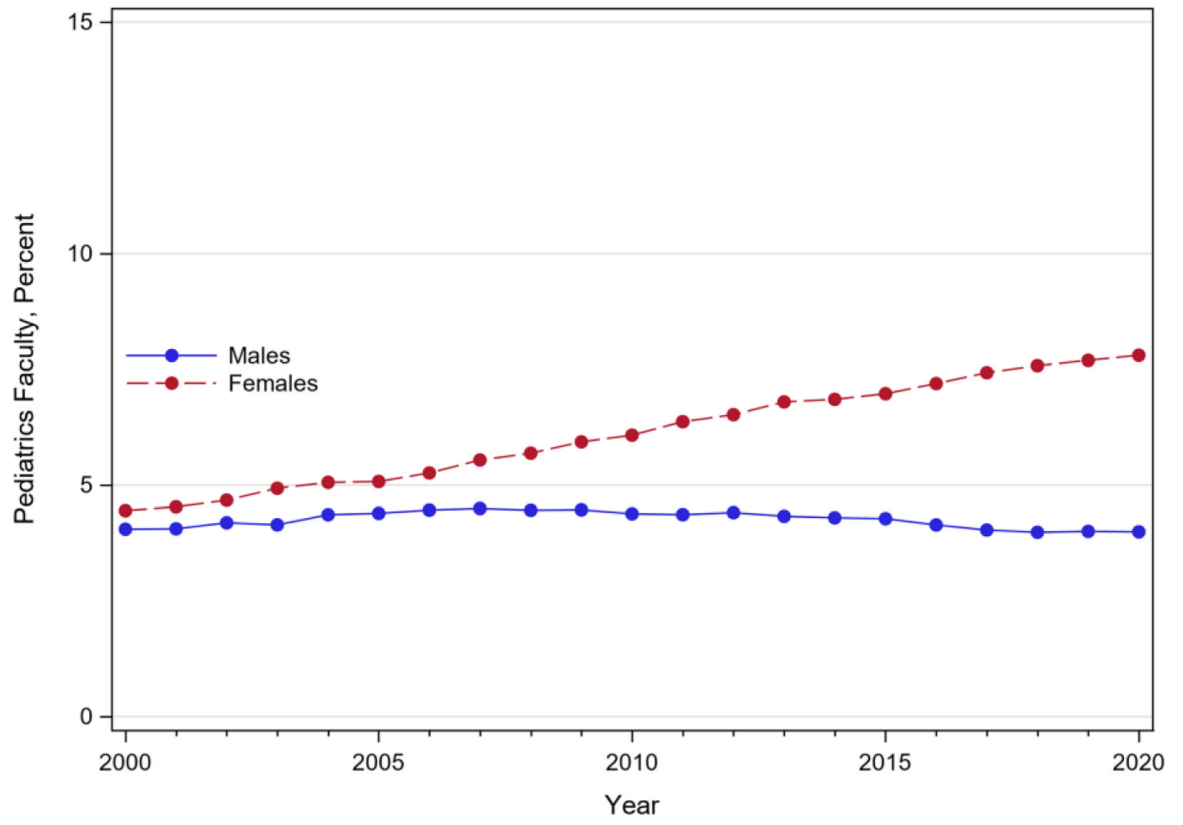


FIGURE 2.
Trends in URiM faculty by sex, 2000–2020.

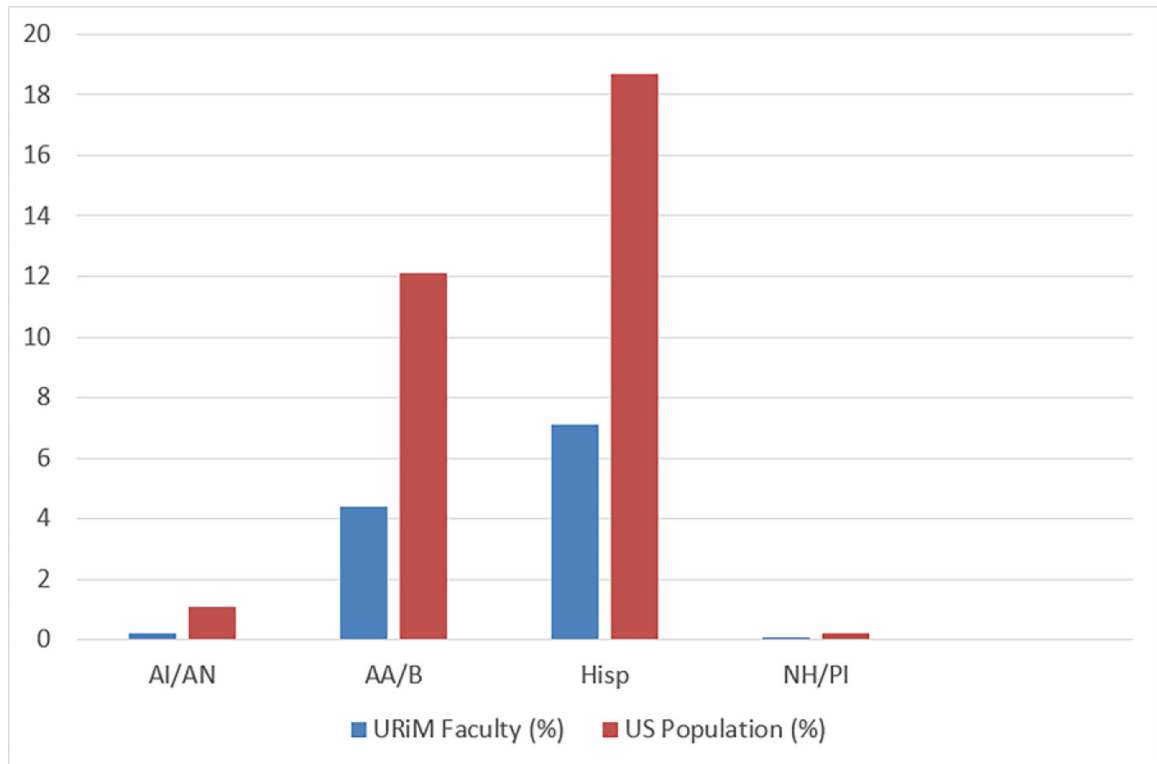


FIGURE 3.

Percentage of URiM faculty representation compared with US population representation, 2020.

Abbreviations: AA, African American; AI, American Indian; AN, Alaska Native; Hisp, Hispanic; NH, Native Hawaiian; PI, Pacific Islander; URiM, underrepresented in medicine.

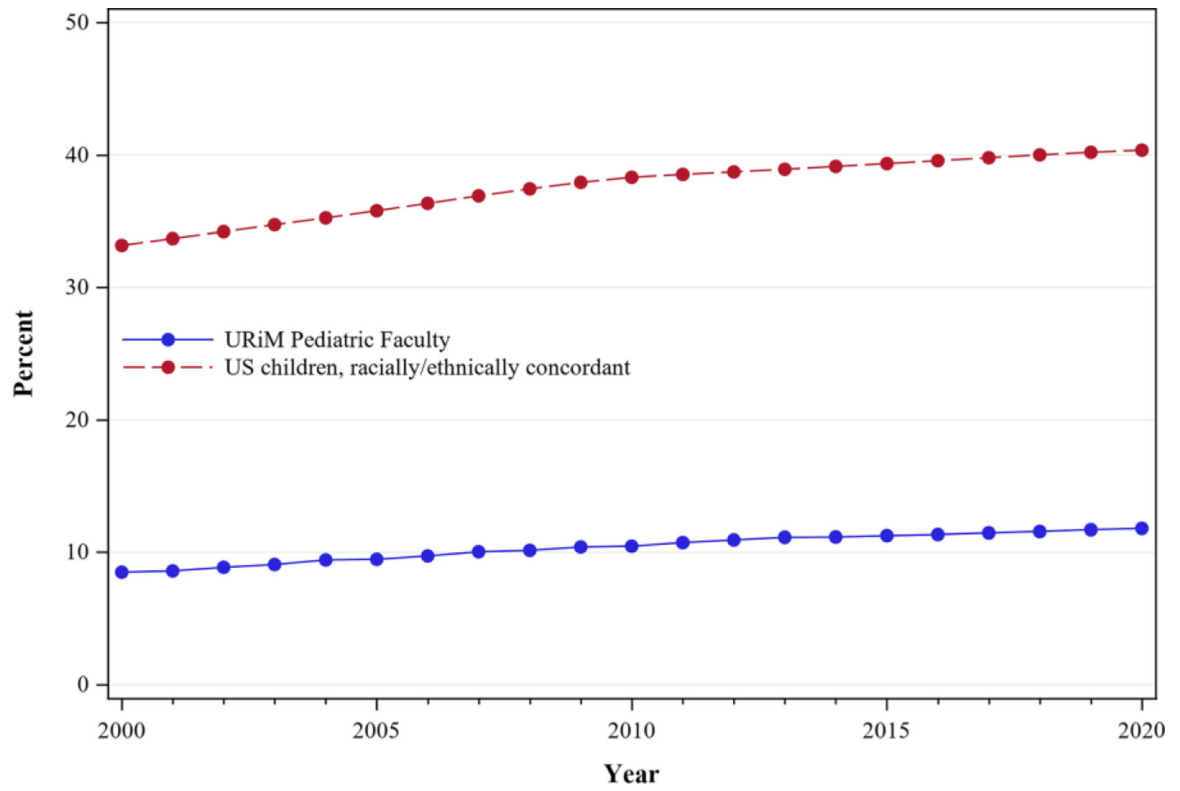


FIGURE 4. Percentage of URiM faculty representation compared with US population for racially/ethnically concordant children, 2000–2020.

TABLE 1

Trends in URiM Faculty by Sex and Rank, 2000–2020

Sex	Rank	2000 (%)	95% CI	2020 (%)	95% CI	Cochran-Armitage Trend Test P value
Combined	Professor	4.22	3.45–5.11	7.72	6.94–8.56	<.0001
	Assoc Prof	7.41	6.42–8.49	10.45	9.63–11.31	<.0001
	Asst Prof	11.37	10.48–12.30	13.91	13.28–14.56	<.0001
	Combined	8.5	7.94–9.07	11.8	11.36–12.24	<.0001
Male	Professor	2.96	2.31–3.72	4.03	3.46–4.66	0.0026
	Assoc Prof	4.05	3.32–4.89	3.99	3.48–4.56	0.27
	Asst Prof	4.61	4.02–5.26	3.98	3.63–4.35	0.0001
	Combined	4.05	3.66–4.46	3.99	3.73–4.27	0.14
Female	Professor	1.27	0.86–1.80	3.7	3.15–4.31	<.0001
	Assoc Prof	3.35	2.69–4.12	6.45	5.80–7.16	<.0001
	Asst Prof	6.71	6.00–7.47	9.93	9.39–10.49	<.0001
	Combined	4.45	4.04–4.88	7.8	7.44–8.18	<.0001

Assoc Prof, Associate Professor; Asst Prof, Assistant Professor; CI, confidence interval.

TABLE 2

Trends in URIM Faculty by Race, Ethnicity and Sex, 2000–2020

Race/Ethnicity	Sex	Rank	2000 (%)	95% CI	2020 (%)	95% CI	Cochran-Armitage Trend Test P value
American Indian or Alaskan Native	Male	Professor	0.09	0.03–0.24	0.08	0.01–0.30	0.261
		Assoc Prof	0.08	0.01–0.28	0.12	0.04–0.25	0.0594
		Asst Prof	0.17	0.07–0.34	0.04	0.01–0.10	<0001
Female		Professor	0.04	0–0.23	0.09	0.03–0.24	0.0002
		Assoc Prof	0	0–0.14	0.1	0.03–0.23	<0001
		Asst Prof	0.02	0–0.12	0.1	0.05–0.17	0.0361
Combined		Professor	0.12	0.03–0.36	0.19	0.08–0.37	0.7433
		Assoc Prof	0.08	0.01–0.28	0.21	0.11–0.38	<0001
		Asst Prof	0.19	0.09–0.36	0.14	0.08–0.23	0.0982
Male		All	0.12	0.06–0.22	0.07	0.04–0.12	0.0022
		All	0.02	0–0.12	0.1	0.05–0.17	<0001
		All	0.14	0.08–0.24	0.17	0.12–0.23	0.2564
Black or African American	Male	Professor	0.71	0.41–1.13	1.12	0.83–1.49	0.0001
		Assoc Prof	1.39	0.97–1.91	1.01	0.75–1.32	0.0412
		Asst Prof	1.6	1.26–2.01	1.03	0.86–1.23	<0001
Female		Professor	0.37	0.17–0.71	1.31	0.99–1.70	<0001
		Assoc Prof	1.46	1.04–2.00	2.79	2.36–3.28	<0001
		Asst Prof	3.14	2.66–3.68	4.41	4.05–4.81	<0001
Combined		Professor	1.08	0.71–1.58	2.43	1.99–2.94	<0001
		Assoc Prof	2.85	2.24–3.56	3.8	3.29–4.36	<0001
		Asst Prof	4.75	4.15–5.4	5.45	5.04–5.88	0.3035
Male		All	1.32	1.1–1.57	1.04	0.91–1.19	<0001
		All	2	1.73–2.3	3.38	3.14–3.64	<0001
		All	3.33	2.98–3.7	4.43	4.15–4.71	<0001
Hispanic	Male	Professor	2.15	1.61–2.82	2.76	2.29–3.3	0.0463
		Assoc Prof	2.57	2.0–3.26	2.87	2.43–3.36	0.078
		Asst Prof	2.8	2.34–3.32	2.88	2.58–3.20	0.5423
	Professor	0.84	0.52–1.30	2.27	1.84–2.76	<0001	

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Race/Ethnicity	Sex	Rank	2000 (%)	95% CI	2020 (%)	95% CI	Cochran-Armitage Trend Test P value
		Assoc Prof	1.87	1.38–2.473	3.47	2.99–4.01	<.0001
		Asst Prof	3.47	2.96–4.04	5.38	4.97–5.80	<.0001
	Combined	Professor	3	2.35–3.77	5.03	4.40–5.73	<.0001
		Assoc Prof	4.44	3.68–5.32	6.34	5.69–7.04	0.0026
		Asst Prof	6.27	5.58–7.01	8.26	7.76–8.77	<.0001
	Male	All	2.58	2.27–2.91	2.85	2.63–3.09	0.15
	Female	All	2.39	2.09–2.71	4.27	4.0–4.56	<.0001
	Combined	All	4.96	5.54–5.42	7.13	6.78–7.48	<.0001
Native Hawaiian or Pacific Islander	Male	Professor	0	0–0.15	0.05	0–0.11	0.0013
		Assoc Prof	0	0–0.14	0	0–0.07	0.6957
		Asst Prof	0	0–0.08	0.03	0.01–0.08	0.6996
	Female	Professor	0	0–0.15	0.02	0–0.13	0.1316
		Assoc Prof	0	0–0.14	0.1	0.03–0.23	<.0001
		Asst Prof	0	0–0.08	0.04	0.01–0.10	0.201
	Combined	Professor	0	0–0.15	0.07	0.01–0.21	0.0004
		Assoc Prof	0	0–0.14	0.1	0.03–0.23	<.0001
		Asst Prof	0	0–0.08	0.07	0.03–0.14	0.3568
	Male	All	0	0–0.04	0.02	0.01–0.06	0.2561
	Female	All	0	0–0.04	0.05	0.03–0.09	0.0007
	Combined	All	0	0–0.04	0.08	0.04–0.12	0.0005

Assoc Prof, Associate Professor; Asst Prof, Assistant Professor; CI, confidence interval.