

Racial and Ethnic Diversity in the Academic Health Professions: Implications for the Pharmacy Faculty Pipeline

Cheryl A. Simmons^{1*}, Robert J. Klein¹, Melissa D. Hart¹

¹Department of Pharmacy Education and Professional Affairs, College of Pharmacy, University of Florida, Gainesville, United States.

*E-mail ✉ cheryl.simmons@gmail.com

Abstract

This research aims to examine the racial and ethnic composition of faculty members in pharmacy, medicine, and dentistry schools in the U.S., and to propose ways to diversify the pipeline for faculty in pharmacy education. A retrospective assessment was conducted to compare the faculty diversity at pharmacy schools with that at medical and dental schools. The study focused on racial and ethnic diversity across various pharmacy schools, including top institutions, historically Black colleges and universities (HBCUs), and newer schools, using data from the 2019-2020 academic year. In addition, data from residency and fellowship programs, along with graduation rates, were analyzed to understand the potential pipeline for future pharmacy faculty. Across pharmacy, medicine, and dentistry, faculty representation of underrepresented minorities (URMs) was consistently lower than their proportions in the general U.S. population. Dentistry had the highest URM representation (13.9%), followed by pharmacy (8.5%) and medicine (7.1%). HBCUs produced 32.8% of the total Black faculty in pharmacy, although their graduates faced lower success rates in securing residency placements. The proportion of URM students in postdoctoral and graduate training programs was also smaller compared to their representation in pharmacy degree programs. Limited access to advanced training opportunities, such as residencies and fellowships, is a significant barrier to increasing URM representation in pharmacy academia. To ensure a more diverse faculty pool, these obstacles must be addressed. Without changes, the majority of pharmacy students will continue to be educated by faculty who do not represent the growing diversity of the patient population.

Keywords: Schools and colleges of pharmacy, Race, Faculty, Pipeline, Diversity

Introduction

James Baldwin, an American writer and social critic, observed that meaningful change cannot occur without first confronting existing problems. This insight is particularly relevant to the persistent racial and ethnic inequities within the U.S. health care system, where progress toward equity has been limited and inconsistent. The health care workforce—including professionals in

medicine, dentistry, nursing, pharmacy, and allied health fields—plays a central role in shaping patient experiences and outcomes. Ideally, care would be delivered within systems that promote patient-provider concordance, thereby enhancing trust and communication. Beyond clinical care, workforce diversity also broadens the scope and direction of health research. Cohen and colleagues have noted that researchers' cultural, personal, and ethnic backgrounds influence the priorities and focus of the U.S. health research agenda [1].

Within pharmacy, practice-based clinical research represents only one dimension of scholarly inquiry. Progress in the field also depends on postgraduate trainees and faculty who conduct laboratory-based studies as well as research addressing economic, social,

Access this article online

<https://smerpub.com/>

Received: 11 June 2025; Accepted: 03 October 2025

Copyright CC BY-NC-SA 4.0

How to cite this article: Simmons CA, Klein RJ, Hart MD. Racial and Ethnic Diversity in the Academic Health Professions: Implications for the Pharmacy Faculty Pipeline. *Ann Pharm Educ Saf Public Health Advocacy*. 2025;5(2):63-72. <https://doi.org/10.51847/Hr1MqrAr8C>

and humanistic dimensions of care. Such scholarly efforts have been instrumental in uncovering historical mistrust among African American communities toward government-sponsored medical research [1]. Increasing the enrollment of students from underrepresented backgrounds in pharmacy programs has the potential to enrich the educational environment, shape the future workforce, and ultimately influence faculty composition. Therefore, examining the educational pipeline—from student entry through faculty development—is essential to identify stages where additional resources and support are needed.

Although efforts to diversify academic and professional environments can enhance inclusivity and broaden perspectives, these initiatives may also introduce unintended challenges. Black faculty recruited through diversity-focused efforts may experience tokenization, particularly when they are the first or only Black faculty members within an institution [2]. Unsupportive institutional climates and insufficient mentoring structures can further limit opportunities for advancement. The lack of shared lived experiences may marginalize Black faculty voices, contributing to unwelcoming environments that negatively affect retention. Moreover, faculty from underrepresented minority (URM) groups—including Black, Hispanic, American Indian/Alaska Native, and Native Hawaiian/Other Pacific Islander individuals—are often disproportionately tasked with diversity-related service, mentoring URM students, and committee participation. These additional responsibilities may strain work–life balance and reduce overall career satisfaction [3].

Evidence suggests that simply increasing the number of URM faculty candidates entering the pipeline is not enough to substantially improve URM student representation. Lebovitz and colleagues reported that enrollment of Black and Hispanic students in pharmacy programs has remained largely unchanged over the past decade, underscoring the need for sustained recruitment, retention, and graduation efforts [4]. Similar trends are observed in medicine, where growth in advanced degrees earned by URM individuals has not been matched by corresponding increases in URM faculty appointments [5]. Evaluating diversity patterns across other health professions can help pharmacy education assess its progress and identify opportunities for improvement. Accordingly, the objectives of this study are to: assess minority representation among pharmacy faculty relative to U.S. Census data; examine racial and ethnic diversity

across HBCUs, newer Doctor of Pharmacy (PharmD) programs, and highly ranked pharmacy schools; compare faculty diversity in pharmacy with that in medicine and dentistry; and identify challenges and potential strategies for strengthening the pharmacy faculty pipeline.

Materials and Methods

The Belmont University Institutional Review Board approved this retrospective analysis as exempt from full review. To establish a national benchmark, U.S. population demographics were taken from the 2019 U.S. Census Bureau data, allowing for direct comparisons of racial and ethnic representation among full-time faculty in pharmacy, medical, and dental schools. Diversity in this analysis was defined according to the official racial and ethnic groups outlined by the U.S. Census Bureau.[6] These three healthcare disciplines—pharmacy, medicine, and dentistry—were selected for comparison because of their critical role in shaping patient care and health outcomes. Data on pharmacy faculty came from the 2019–2020 Profile of Pharmacy Faculty within the American Association of Colleges of Pharmacy (AACP) Institutional Research database [7]. Detailed race/ethnicity breakdowns for specific institutions are released only when queries include data from a minimum of five schools. Medical faculty demographics were pulled from the 2019 Faculty Roster published by the Association of American Medical Colleges (AAMC) [8].

Dental faculty

ures were sourced directly from resources available on the American Dental Education Association (ADEA) website [9]. While the AACP, AAMC, and ADEA collect granular information from their member institutions, they release it exclusively in aggregated summaries.

In order to gauge the overall level of diversity, faculty racial and ethnic distributions across all U.S. pharmacy programs were contrasted with subgroups: highly ranked institutions, Historically Black Colleges and Universities (HBCUs), and programs established more recently. Classification of pharmacy schools drew on the 2020 U.S. News & World Report rankings of top pharmacy programs [10], which rely on peer-reviewed assessments. HBCU identification followed designations from the U.S. Department of Education. Programs classified as newer included those that opened after 2010, based on

records from the Accreditation Council for Pharmacy Education (ACPE) [11].

Per-institution data on the demographics of pharmacy students, postgraduate residents, and fellows were extracted from the AACP database as documented in the Fall 2019 Profile of Pharmacy Students [12]. Student racial and ethnic patterns were assessed using the same comparative approach as for faculty. Residency match information broken down by race or ethnicity is not provided by the American Society of Health-System Pharmacists (ASHP). The National Matching Service, which operates the match process for ASHP, instead reports school-level overall match rates [13]. These rates were expressed as the percentage of actively listed students who successfully secured a position.

Results and Discussion

Analysis of national demographic data revealed ongoing changes in the racial and ethnic makeup of underrepresented minority (URM) groups in the United States. In 2019, non-Hispanic White individuals accounted for just over three-fifths (60.1%) of the total U.S. population, while Hispanic individuals constituted the largest URM group. Asian populations represented 5.7% of the population and showed the most rapid growth among racial and ethnic minority groups. The proportion of individuals identifying as Native Hawaiian or Other Pacific Islander had increased twofold since 2000, whereas the size of the American Indian and Alaska Native population showed little variation over the same period.

Faculty racial and ethnic distributions in pharmacy, medicine, and dentistry were compared with U.S. population demographics and are summarized in **Table 1**.

1. Across all three disciplines, patterns of representation were similar by racial and ethnic group. Asian faculty were disproportionately represented in each profession, comprising between two and three and a half times their proportion in the general population; notably, approximately one-fifth of medical school faculty identified as Asian. White faculty members remained the predominant group in all disciplines, although dentistry exhibited the lowest proportion of White faculty relative to pharmacy and medicine.

Among the three professions, dentistry demonstrated the highest representation of Hispanic faculty, with a percentage more than double that observed in pharmacy and medicine (8.5% compared with 3.3% and 3.5%,

respectively). Despite this, Hispanic faculty representation in dentistry remained well below their proportion of the U.S. population (19%). Overall, dentistry also had the highest proportion of URM faculty (13.9%), exceeding the corresponding percentages observed in pharmacy (8.5%) and medicine (7.1%).

Table 1. Racial and/or ethnic distribution of the U.S. population compared with faculty in pharmacy, medicine, and dentistry

Category	Pharmacy Faculty ^c (n=6,532)	Medicine Faculty ^d (n=179,238)	U.S. Population, Ages 20–34 years ^b	Dentistry Faculty ^e (n=5,139)
White (%)	65.0	63.5	60.1	56.3
Black (%)	5.0	3.6	13.4	4.9
Hispanic (%)	3.2	3.3	18.5	8.5
Asian (%)	15.7	19.9	5.9	13.3
American Indian/Alaska Native (%)	0.1	0.2	0.9	0.3
Native Hawaiian/Pacific Islander (%)	0.2	0.1	0.2	0.2

^a U.S. Census Data 2019 [6]

^b The 2019 age group was selected to reflect the typical applicant pool for professional degree programs [14]

^c Data sourced from the 2019–2020 Profile of Pharmacy Faculty [7]

^d Data sourced from the 2019 Association of American Medical Colleges Faculty Roster [8]

^e Data sourced from the 2018–2019 American Dental Education Association Faculty report [9]

Underrepresented minority (URM) faculty showed varying levels of representation across different categories of pharmacy programs (**Table 2**). In 2000, Black faculty accounted for 5.1% of the total; by 2019, among 6,362 pharmacy faculty members, 323 (5.0%) identified as Black. Of those Black faculty, 106 (32.8%) were employed at just five Historically Black Colleges and Universities (HBCUs). These five HBCUs constituted only 3.5% of all pharmacy schools and colleges nationwide. Within those reporting HBCU institutions, Black faculty comprised 57.2% of the total. Top-ranked pharmacy programs had the lowest proportion of Black faculty compared to both HBCUs and newly accredited programs. Overall, the percentage of URM faculty across all pharmacy programs remained low, with even lower figures in the highest-ranked institutions. Recently established programs demonstrated

greater success in hiring URM faculty than the academy as a whole or the top-ranked schools, though HBCUs still offered the most substantial employment opportunities for URM faculty. Within pharmacy science faculty specifically, Asian individuals made up 22% and White individuals 56%. Black and Hispanic faculty were significantly underrepresented, constituting only 4.4% and 3.2% of science faculty, respectively [7].

Table 2. Racial and ethnic composition of pharmacy faculty across different program categories

Category	HBCU Pharmacy Programs (n=5)	U.S. Population [6] (n=328,239,523)	Pharmacy Faculty Overall [7] (n=6,362)	Newer PharmD Programs [7] (n=23)	Top 10 Ranked Programs [10] (n=10)
Black (%)	57.2	13.4	5	6.6	.7
White (%)	13.5	60.1	65	59.5	71.3
Hispanic (%)	2.2	18.5	3.2	2.4	2.5
Asian (%)	16.7	5.9	15.7	18	18.7
Native Hawaiian/Pacific Islander (%)	1.6	0.2	0.2	0.3	0.1
American Indian/Alaska Native (%)	0	0.9	0.1	0.1	0.1

[6] Data from the 2019 U.S. Census Bureau.

[7] Derived from the American Association of Colleges of Pharmacy (AACP) national summary in the 2019–2020 Profile of Pharmacy Faculty. Recently opened PharmD programs in this analysis encompass institutions such as American University of Health Sciences, Marshall B. Ketchum University, West Coast University, Larkin University, University of South Florida, Philadelphia College of Osteopathic Medicine (Georgia campus), Roosevelt University, Rosalind Franklin University of Medicine and Science, Manchester University, University of Maryland Eastern Shore, Western New England University, William Carey University, Fairleigh Dickinson University, Binghamton University, High Point University, Cedarville University, Presbyterian College, University of South Tennessee, University of North Texas, University of Texas at Tyler,

Marshall University, Concordia University Wisconsin, and the Medical College of Wisconsin.

[10] Based on U.S. News & World Report rankings for leading pharmacy schools. The institutions ranked in the top 10 include University of California–San Francisco, University of Florida, University of Illinois at Chicago, Purdue University, University of Kentucky, University of Michigan–Ann Arbor, University of Minnesota, University of North Carolina–Chapel Hill, Ohio State University, and University of Texas at Austin.

^a Reporting Historically Black Universities and Colleges that offer pharmacy degrees: Howard University, Florida A&M University, Xavier University of Louisiana, University of Maryland Eastern Shore, and Texas Southern University. Note that Hampton University did not submit information for this cycle. Abbreviation: HBCU = Historically Black Universities and Colleges.

In the fall of 2019, a total of 60,594 students were enrolled in pharmacy programs. Among these, White students were underrepresented, comprising 48% of the student body, whereas Asian students were disproportionately represented at 24% compared to their overall percentage in the U.S. population. This trend was consistent across both the general population and the 20–34 age group, which typically constitutes the applicant pool for professional pharmacy programs. Underrepresented minority (URM) groups, while making up 33% of the U.S. population, accounted for just 17% of students in PharmD programs. The representation of URM students was notably lower in top-ranked pharmacy schools, where URMs comprised only 15.4% of the student body, compared to newer pharmacy schools at 24%, and HBCUs, where URM representation was highest at 58.7%. The distribution of pharmacy students across these institutions was as follows: HBCUs educated 19.2% of all Black pharmacy students nationally, while newer and top pharmacy schools educated 15.2% and 6.25%, respectively. Notably, newer pharmacy programs had a higher percentage of Hispanic students than either top programs or HBCUs.

In clinical pharmacy faculty recruitment, completion of a post-PharmD residency or fellowship is often considered the minimum requirement. However, when examining the racial and ethnic representation of students in residency programs affiliated with PharmD programs, there is a clear and ongoing underrepresentation of Black and Hispanic students (**Table 3**). The AACP does not report data for PharmD graduates who enter residency or fellowship programs outside of pharmacy-specific

institutions. Among those enrolled in residency programs and HBCUs had significantly lower rates, at 44% and 33.2%, respectively. institutional match rates at 76.4%, whereas newer

Table 3. Comparison of student demographics by program type and postgraduate training

Category	Black	White	Asian	Hispanic	AI/AN	NH/PI	Race Not Known	Two or More Races	Foreign	Other	Total (n)
HBCU PharmD Programs	1,080 (56.0%)	293 (15.2%)	353 (18.3%)	43 (2.2%)	4 (0.2%)	5 (0.3%)	29 (1.5%)	36 (1.9%)	83 (4.3%)	2 (0.1%)	n = 1,928
Top 10 PharmD Programs	352 (5.9%)	3,080 (51.2%)	1,436 (23.9%)	525 (8.7%)	26 (0.4%)	26 (0.4%)	227 (3.8%)	169 (2.8%)	169 (2.8%)	3 (0.05%)	n = 6,013
New PharmD Programs	855 (14.5%)	2,820 (47.9%)	1,151 (19.5%)	537 (9.1%)	19 (0.3%)	3 (0.05%)	237 (4.0%)	159 (2.7%)	72 (1.2%)	15 (0.3%)	n = 5,893
PGY-1 Residency	45 (7.5%)	347 (57.6%)	107 (17.8%)	29 (4.8%)	1 (0.17%)	1 (0.17%)	37 (6.1%)	12 (2.0%)	15 (2.5%)	8 (1.3%)	N = 602
Post-PharmD Fellowship	56 (12.3%)	170 (37.6%)	169 (37.4%)	6 (1.3%)	0 (0%)	4 (0.89%)	19 (4.2%)	8 (1.8%)	20 (4.4%)	0 (0%)	N = 452

a. Included in the analysis are institutions such as Howard, Florida A&M, Maryland Eastern Shore, Xavier, and Texas Southern, with Hampton University excluded due to non-reporting.

b. Data on residency and fellowship programs related to managed care and community pharmacy were sourced from the AACCP, focusing specifically on postgraduate training linked to accredited pharmacy schools.

[7]. Pharmacy faculty data were collected from various universities, including Marshall B. Ketchum, American, Larkin, South Florida, West Coast, Roosevelt, PCOM-GA, Manchester, Maryland Eastern Shore, Rosalind Franklin, William Carey, Western New England, Binghamton, D'Youville, Farleigh Dickinson, Cedarville, High Point, South-Tennessee, Presbyterian, Texas at Tyler, North Texas, Concordia, Marshall, and the Medical College of Wisconsin.

[10]. The *U.S. News & World Report Education* rankings provided data on pharmacy schools, including those from

California-San Francisco, Purdue, Illinois at Chicago, Michigan, Kentucky, North Carolina, Minnesota, Texas at Austin, Ohio State, and Florida.

Abbreviation: HBCU 5 Historically Black Universities and Colleges.

In pharmaceutical sciences, postgraduate programs (PhDs) play a crucial role in developing future faculty. According to AACCP data, the disciplines contributing most to diversity include biomedical and biological sciences (43.7% non-White), medicinal chemistry and pharmaceuticals (57.8% non-White), pharmacognosy (43.3% non-White), and toxicology and pharmacology (44.2% non-White). When comparing science disciplines with pharmacy practice, Hispanic and Black faculty had roughly equal representation in both fields (46% to 54%). However, Asian faculty were more strongly represented in the science areas, comprising 68% in comparison to 32% in pharmacy practice.

Figure 1 visualizes the faculty pipeline for pharmacy practice. At the outset, underrepresented minority (URM) populations were nearly equal in proportion to non-URMs (White and Asian). However, as students advanced through the pipeline, representation of URMs decreased significantly at the PharmD level. This narrowing trend likely results from challenges in

progressing to degree completion, limited residency opportunities, and issues with retention. On the other hand, White and Asian students continued to see growth at each stage of the pipeline, reinforcing their overrepresentation in pharmacy programs and faculty pathways.

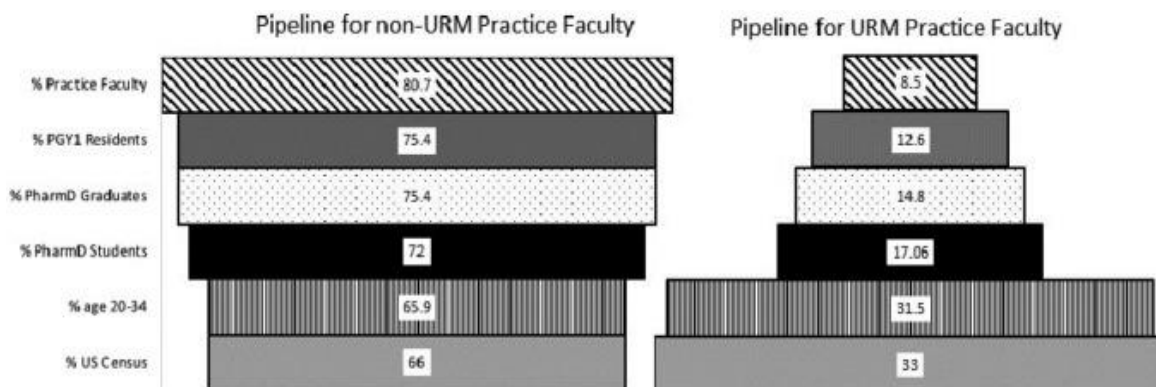


Figure 1. Comparison of the pipeline for faculty in pharmacy practice between non-URM and underrepresented minority (URM) groups [6, 7, 12].

^a. Underrepresented minorities (URM) include Hispanic, Black, Pacific Islander/Native Hawaiian, and Alaska Native/American Indian groups. Asians are generally considered to be sufficiently represented in pharmacy education.

Despite the growing percentages of underrepresented minorities (URMs) in the U.S. population, the representation of Hispanic (3.2%) and Black (5.0%) pharmacy faculty remains severely lacking. This lack of progress is especially troubling given the 20 years of efforts aimed at addressing the disparity. The traditional pathway to a pharmacy practice faculty position generally requires a PharmD graduate who has

completed a residency or fellowship. Faculty in social, pharmaceutical, and administrative sciences are typically recruited from graduates with degrees in engineering, technology, science, and mathematics (STEM). Based on the results of our analysis, it is clear that the current pipeline is insufficient to consistently produce enough underrepresented faculty to match population diversity. Below and in **Table 4**, we present several strategies aimed at improving this pipeline and increasing the number of underrepresented minority candidates in the pharmacy faculty pipeline.

Table 4. Strategies to increase the representation of underrepresented minority candidates in the pharmacy faculty pipeline

Category	Recommendations
Residency Training	Monitor and document the racial and ethnic backgrounds of residency candidates, interview invitations extended, positions filled, and programs successfully completed. Offer financial assistance as required to support applicants lacking resources for interview-related expenses such as transportation, attire, or other essentials. Enhance the representation of underrepresented groups among residency and fellowship program leaders. Implement a policy similar to the Rooney Rule in pharmacy residency interviews by ensuring a varied and inclusive selection of candidates is considered for each opening.
MS/PhD/Fellowship Training	As mentors, recognize that you may not possess every solution, yet actively discuss and align with trainees' personal goals and principles. Allocate resources to encourage and facilitate completion of advanced postgraduate training for underrepresented minorities (URMs).

Accreditation Standards	Incorporate specific diversity objectives with quantifiable metrics into accreditation requirements. Broaden the pharmacy curriculum to exceed basic cultural competence training. Integrate discussions of systemic racism and its effects on health outcomes, including disparities, inequities, and social determinants of health, across the curriculum. Develop evaluation methods (for exams like NAPLEX, MJPE, etc.) that prioritize patient-centered care over disease-specific focus.
Pharmacy Academy	Recruit multiple URM faculty members simultaneously rather than individually. Recognize the benefits of diversity in fostering innovation, questioning norms, and introducing varied perspectives. Revise promotion and tenure criteria to accommodate broader and more innovative assessments of faculty impact. Evaluate the organizational culture, implement initiatives to strengthen strengths and remedy weaknesses, and make ongoing improvements. Establish diversity and inclusion targets for all faculty members, with regular evaluations to monitor progress. Review all institutional policies and processes to identify and eliminate systemic obstacles that hinder success for students and faculty. Collaborate with institutions that have large URM enrollments to promote pharmacy as a viable profession.
Pharmacy Students	Broaden the adoption of comprehensive holistic review processes for admissions. Fund early research mentoring opportunities for currently enrolled URM pharmacy students. Introduce URM students to potential careers in academia via initiatives like the Walmart Scholars program. Promote selection of academia-related electives and advanced pharmacy practice experiences (APPEs) focused on academic paths for URM students. Provide comprehensive holistic support encompassing social, emotional, academic, financial needs, and program duration flexibility. Examine student experiences regarding potentially unwelcoming elements in the learning environment.
Pharmacy Faculty	Confront and mitigate implicit biases. Leverage institutional teaching and learning centers for resources on anti-racist teaching methods. Adopt evidence-based approaches to include precise cultural patient details while avoiding reinforcement of stereotypes. Engage in self-education and recognize the racial experiences and challenges faced by students and peers. Proactively fill curriculum voids through thoughtful course planning. Foster welcoming and supportive classroom settings. Promote deeper faculty awareness of students' real-life experiences. Develop mentoring initiatives for early-career URM faculty and evaluate their effectiveness. Explore faculty encounters with potentially adverse aspects of the professional environment.

a. National Football League communications regarding expansion of the Rooney Rule are cited as an example of structured diversity initiatives. Abbreviations: APPE = advanced pharmacy practice experience; URM = underrepresented minority; NFL = National Football League.

Residency training has traditionally served as the primary pathway for developing future clinical pharmacy practice faculty. However, pharmacy residency programs accredited by ASHP do not collect or disclose racial or ethnic data on applicants, matched residents, or program completers. As early as 2000, the AACP Ad Hoc Committee on Affirmative Action and Diversity urged collaboration among ASHP, the American Pharmacists Association (APhA), and the National Pharmaceutical Association (NPhA) to improve recruitment of minority candidates into residencies and fellowships and to implement systems for tracking participation if such mechanisms were absent. Despite these recommendations, no comprehensive tracking system has been implemented more than two decades later [15]. The absence of such data obscures inequities while allowing their consequences to persist. Students graduating from HBCUs—institutions that produce the highest proportion of Black pharmacy graduates—experience substantially lower residency

match rates. This pattern suggests the presence of structural barriers that limit advancement toward faculty careers. To address this, residency programs should both report demographic data and intentionally pursue strategies to increase URM participation. Additionally, faculty hiring standards should evolve to value alternative qualifications, such as professional experience or demonstrated subject-matter expertise, particularly as residency positions become increasingly competitive. Representation among residency program directors, fellows' supervisors, and experiential preceptors is also essential to creating equitable training environments.

Currently, ACPE accreditation standards do not explicitly mandate initiatives to enhance student diversity. In 2020, Campbell and colleagues demonstrated that disparities between pharmacy student demographics and the patient populations served by surrounding communities remain unresolved [16]. Reviews of ACPE accreditation outcomes echo historical

precedents such as the 1910 Flexner Report, which led to the closure of Black medical schools [17]. In the same year, one HBCU lost accreditation and one Predominantly Black Institution (PBI) was placed on probation due to concerns related to student progression [11]. Because HBCUs and PBIs collectively educate approximately 21% of Black pharmacy students, the loss or destabilization of any such institution represents a significant setback for the profession and threatens a critical source of Black pharmacists and faculty.

Evidence from outside pharmacy offers insight into potential solutions. Studies examining career motivations among biomedical science PhD graduates have shown that values strongly influence decisions to pursue academic roles [18]. While non-URM scientists often prioritize academic independence, women and URM scientists are more likely to be motivated by opportunities to address health issues affecting their communities. URM faculty also place high importance on mentoring and student development [18]. Yet, diversity, equity, and inclusion efforts are frequently assigned disproportionately to URM faculty and are often undervalued in promotion and tenure processes, contributing to burnout and attrition [14].

When advancement criteria prioritize federal funding success and publication metrics, structural bias is embedded within the system. Analyses of NIH R01 awards have shown lower funding rates for Black applicants [19]. Promotion standards must therefore be critically reassessed to minimize bias. Ginter and colleagues reported that affiliation with the top 30 NIH-funded institutions significantly increased the likelihood of receiving funding, regardless of race [19]. Because Black faculty are underrepresented at such institutions, this dynamic may further restrict access to funding and help explain the scarcity of URM faculty at highly ranked research-intensive pharmacy programs. Moreover, women from URM backgrounds encounter compounded challenges, including devaluation of scholarship, adverse student evaluations, and disproportionate service responsibilities [20]. Meaningful progress requires direct acknowledgment and dismantling of these entrenched inequities.

Another commonly employed approach to addressing diversity involves incorporating diversity and inclusion language into institutional mission and vision statements [21]. While necessary, such measures alone are insufficient. A longitudinal study examining strategic diversity planning in medical education found no

association between the presence of a diversity plan and actual increases in URM faculty representation between 1998 and 2015 [22].

Our findings indicate that expanding the URM faculty pipeline requires attention to additional factors. Broad agreement among faculty regarding the importance of increasing Black and Hispanic representation is essential. Leadership must originate from senior faculty and be supported through concrete actions rather than symbolic endorsement [23]. It is also critical to recognize that the motivations driving URM students and early-career scientists toward academic careers may differ from those of non-URM peers or mentors [18]. Demonstrating how academic careers can align with these values may improve recruitment into pharmacy academia. Rather than forcing URM individuals to conform to systems not designed with them in mind, institutions must foster flexible, inclusive environments that recognize diverse forms of contribution and success.

Highly competitive training models may discourage students whose primary motivation is service to communities and improvement of public health. Such competition reflects a zero-sum framework prevalent in dominant U.S. culture. Non-URM faculty must adopt perspectives that genuinely value the contributions of URM colleagues. Schools of medicine, dentistry, and pharmacy should critically reassess criteria for admissions, hiring, promotion, and retention. Pipeline programs must embrace diversity as a catalyst for learning, innovation, and institutional growth rather than as a marketing tool or symbolic gesture [24]. Institutions must also evaluate internal structures—such as power hierarchies and implicit biases—to determine whether their environments deter URM participation. Additional research is needed to better understand the lived experiences of URM students and faculty in pharmacy education.

This study is limited by the availability and scope of existing data. To mitigate this limitation, multiple data sources were integrated to provide a more comprehensive view of pharmacy education. The long-term effects of the COVID-19 pandemic on higher education remain uncertain and may further complicate faculty diversification efforts, though the disruption may also create opportunities for meaningful reform. Resistance to proposed changes should be expected, particularly when existing power structures are challenged. Framing diversity initiatives as benefiting one group at the expense of another obscures the underlying issues and

undermines progress. Addressing systemic inequities requires collective commitment to structural change rather than preservation of the status quo [25].

Conclusion

In the past 20 years, academic pharmacy has made limited progress in increasing the representation of underrepresented minority (URM) faculty, despite efforts such as task forces, committees, and research aimed at addressing diversity within the field [4, 15, 26-29]. This issue of underrepresentation extends beyond pharmacy, also being evident in medicine and dentistry to varying extents [30, 31]. At present, postgraduate training programs, including residencies, fellowships, and MS/PhD programs, serve as the primary sources for recruiting new pharmacy faculty. To overcome the barriers to diversity and inclusion in these pipelines, a comprehensive, multi-pronged approach is needed. It is essential to dismantle structural obstacles and prioritize the recruitment, funding, and support of students from ethnic and racial minority backgrounds into these postgraduate programs. Pharmacy schools, residency programs, accreditation bodies, and pharmacy organizations must move beyond theoretical statements and take concrete action by establishing specific, measurable goals to advance diversity, equity, and inclusion.

Acknowledgments: None

Conflict of Interest: None

Financial Support: None

Ethics Statement: None

References

1. Cohen JJ, Gabriel BA, Terrell C. The case for diversity in the health care workforce. *Health Care Workforce*. 2002;21(5):90-102. doi: <https://doi.org/10.1377/hlthaff.21.5.90>
2. Avant N, Davis RS. Navigating and supporting marginalized identities in dominant pharmacy spaces. *Innovations in Pharmacy*. 2018;9(4): Article 8. doi: <https://doi.org/10.24926/iip.v9i4.1033>
3. Blackstock U. Why Black doctors like me are leaving faculty positions in academic medical centers. *Opinion. Stat.* January 16, 2020. <https://www.statnews.com/2020/01/16/black-doctors-leaving-faculty-positions-academic-medical-centers/>. Accessed February 1, 2021.
4. Lebovitz L, Swaan PW, Eddington ND. Trends in research and graduate affairs in schools and colleges of pharmacy, part 3: under- represented minorities. *Am J Pharm Educ*. 2020;84(5):Article 7641. doi: <https://doi.org/10.5688/ajpe7641>
5. Allen-Ramdial SA, Campbell AG. Reimagining the pipeline: advancing STEM diversity, persistence, and success. *Bioscience*. 2014;64(7):612-618. <https://doi.org/10.1093/biosci/biu076>
6. US Census Bureau. Quick Facts: Population Estimates July 1, 2019. <https://www.census.gov/quickfacts/fact/table/US/PST045219>. Accessed February 8, 2021.
7. American Association of Colleges of Pharmacy 2019-20 Profile of Pharmacy Faculty. <https://www.aacp.org/system/files/2020-02/PPF1920-final2.pdf>. Accessed February 8, 2021.
8. Association of American Medical Colleges Faculty Roster December 31, 2019 Distribution of U.S. Medical School Faculty by Sex and Race/Ethnicity, 2019. <https://www.aamc.org/system/files/2020-01/2019Table8.pdf>. Accessed February 2, 2021.
9. American Dental Education Association Full-Time and Part-Time Dental School Faculty by Gender, and Race and Ethnicity, 2018-19 Academic Year. <https://www.adea.org/data/Faculty/2018-2019-Survey/>. Accessed February 2, 2021.
10. Best graduate schools - pharmacy 2020. U.S. News and World Report Education. <https://www.usnews.com/best-graduate-schools/top-health-schools/pharmacy-rankings>. Accessed February 1, 2021.
11. Programs by Status. Accreditation Council for Pharmacy Education. <https://www.acpe-accredit.org/accredited-programs-by-status/>. Accessed January 21, 2021.
12. American Association of Colleges of Pharmacy 2019-2020 Profile of Pharmacy Students. <https://www.aacp.org/sites/default/files/2020-05/fall-2019-pps-enrollments.pdf>. Accessed February 2, 2021.
13. National Matching Services, 2020 ASHP Match Statistics, Schools, PGY1- Combined Phase I and II. <https://natmatch.com/ashprmp/stats/2020schlstats-pgy1.pdf>. Accessed February 7, 2021.

14. Lett LA, Murdock HM, Orji WU, et al. Trends in racial/ethnic representation among US medical students. *JAMA Network Open*. 2019; 2(9):e191490. doi:10.1001/jamanetworkopen.2019.10490.
15. American Association of Colleges of Pharmacy. Report of the Ad Hoc Committee on affirmative action and diversity. <https://www.aacp.org/sites/default/files/affirmativeactiondiversitycmte102000.pdf>. Accessed October 4, 2021.
16. Campbell HE, Hagan AM, Hincapie AL, Gaither C, Freeman MK, Avant ND. Racial disproportionality of students in United States colleges of pharmacy. *Curr Pharm Teach Learn*. 2020;12(5): 524-530. doi: <https://doi.org/10.1016/j.cptl.2020.01.011>
17. Sullivan LW, Suez Mittman I. The state of diversity in the health professions a century after Flexner. *Acad Med*. 2010;85(2):246-253. doi: <https://doi.org/10.1097/acm.0b013e3181c88145>
18. Gibbs KD, Jr., Griffin KA. What do I want to be with my PhD? the roles of personal values and structural dynamics in shaping the career interests of recent biomedical science PhD graduates. *CBE Life Sci Educ*. 2013;12(4):711-723. doi: 10.1187/cbe.13-02-0021
19. Ginther DK, Schaffer WT, Schnell J, et al. Race, ethnicity, and NIH research awards. *Science*. 2011;333(6045):1015-1019. doi: 10.1126/science.119678
20. Crooms NN. Promotion beyond tenure: unpacking racism and sexism in the experiences of Black women professors. *Rev Higher Educ*. 2017;40(4):557-558. <https://doi.org/10.1353/rhe.2017.0022>
21. Deas D, Pisano ED, Mainous III AG, et al. Improving diversity through strategic planning: a 10-year (2002-2012) experience at the Medical University of South Carolina. *Acad Med*. 2012;87:1548-1555. doi: <https://doi.org/10.1097/acm.0b013e31826d63e0>
22. Washington DM, Paasche-Orlow MK, Liebschutz JM, et al. Promoting progress or propagating problems: strategic plans and the advancement of academic faculty diversity in U.S. medical schools. *J Natl Med Assoc*. 2017;109(2):72-78. doi: <https://doi.org/10.1016/j.jnma.2016.10.001>
23. Hrabowski FA. Diversity will fuel excellence in pharmacy education. If we let it flourish. *Am J Pharm Educ*. 2020;84(5):847817. doi: <https://doi.org/10.5688/ajpe847817>
24. Ely RJ, Thomas DA. Cultural diversity at work: the effects of diversity perspective on work group processes and outcomes. *Admin Sci Q*. 2001;46:229-273. <https://doi.org/10.2307/2667087>
25. Meyer SL, Ha IS. *Race Neutrality: Rationalizing Remedies to Racial Inequality*. 2018; Lexington Books: Lanham, MD.
26. Yanchick VA, Baldwin JN, Bootman JL, Carter RA, Crabtree BL, Maine LL. Diversity and inclusion in pharmacy education: 2013-14 Argus Commission report. *Am J Pharm Educ*. 2014; 78(10):S21. doi: <https://doi.org/10.5688/ajpe7810S21>
27. Nkansah NT, Youmans SL, Agness CF, Assemi M. Fostering and managing diversity in schools of pharmacy. *Am J Pharm Educ*. 2009;73(8):152-161. doi: <https://doi.org/10.5688/aj7308152>
28. White C, Louis B, Persky A, et al. Institutional strategies to achieve diversity and inclusion in pharmacy education. *Am J Pharm Educ*. 2013;77(5):97-104. doi: <https://doi.org/10.5688/ajpe77597>
29. White C, Conway JM, Davis PK, et al. AACP special taskforce white paper on diversifying our investment in human capital. *Am J Pharm Educ*. 2017;81(8):S13. doi: <https://doi.org/10.5688/ajpeS13>
30. Williams WW. Medical school admissions-a moveable barrier to ending health care disparities. *N Engl J Med*. 2021;384(17):1659-1660. doi: <https://doi.org/10.1056/nejme2102832>
31. Morris DB, Gruppuso PA, McGee HA, et al. Diversity of the national medical student body-four decades of inequities. *N Engl J Med*. 2021;384(17):1661-1668. doi: <https://doi.org/10.1056/nejmsr2028487>