Received: 18 April 2022 | Accepted: 28 May 2022

DOI: 10.1002/jdd.13013

ADEA THE VOICE OF DENTAL EDUCATION WILEY

ORIGINAL ARTICLE

Faculty diversity, equity, and inclusion in academic dentistry: Revisiting the past and analyzing the present to create the future

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Abstract

Aim: In 2021, NIDCR published the landmark report "Oral Health in America." It described that while oral health-related research and care has seen amazing progress, oral health inequities and lack of oral care for large segments of the US population have not improved. This situation plus the predicted increase of the diversification of the US population requires decisive actions to ensure that future dentists will be optimally prepared to provide the best possible care for all patients. A diverse dental educator workforce plays a crucial role in obtaining this goal. The objectives of this document were threefold. Aim 1 was to analyze past and current trends in the diversity and inclusion of historically underrepresented ethnic/racial (HURE) and marginalized (HURM) dental faculty members. Aim 2 focused on reviewing best practices and challenges related to achieving dental faculty and leadership diversity and inclusion. Aim 3 was to develop recommendations for increasing the diversity and inclusion of dental faculty in the present and future.

Methods: An analysis of ethnicity/race and gender faculty data collected by the American Dental Education Association (ADEA) in 2011–2012 and 2018–2019 showed that achieving faculty diversity and inclusion has been an ongoing challenge, with limited success for faculty from HURE backgrounds. In order to create this much-needed change, best practices to increase the applicant pool, change recruitment strategies, and develop solid retention and promotion efforts were described. Research discussing the challenges to creating such changes was analyzed, and strategies for interventions were discussed.

Conclusion: In conclusion, evaluations of efforts designed to create a more diverse and inclusive work force is crucial. Institutions must evaluate their diversity data, practices utilized, and the policies implemented to determine whether the desired outcomes are achieved. Only then will the future dental workforce be

optimally prepared to provide the best possible care for all patients in the United States.

KEYWORDS
dental cultural diversity, dental faculty, education, personnel retention, recruitment activities, social inclusion

1 | THE NECESSITY OF CREATING A DIVERSE AND INCLUSIVE DENTAL EDUCATION FACULTY WORKFORCE

Population demographics in the United States are changing and the current 62% non-Hispanic White majority will become a 46% minority by 2060, based on the Pew Research Center 2015 forecast.[1] During this same time, the percentage of the Hispanic/Latinx population is expected to increase from 18% to 24%, the Asian American segment from 6% to 14%, and the African American population from 12% to 13%.[1] This demographic shift is partly due to an increase in the non-US born segment of the population. In 2018, 44.8 million (13.7%) of the US population were foreign born and an increase to 78 million immigrants is predicted by 2065.[1] In short, the US population is continuing to diversify in a rapid pace.

These trends will dramatically change the dental patient population in the US. They will require a dental educator workforce that is optimally prepared to train future dentists to provide the best possible care for patients from all backgrounds. Diversification of the dental educator and dental education leader workforces is crucial for achieving this goal and for overcoming the oral health inequities and the unequal access to dental care for specific population groups in the United States. Research showed that people were more likely to have oral healthcare problems if they were from low-income, uninsured, and/or racial/ethnic minority backgrounds, immigrants, from rural areas, self-identified as being part of the lesbian, gay, bisexual, transgender, and other (LGBTQ+) communities.[2–5] One specific way to achieve this goal is to develop a dental educator workforce that is both culturally and linguistically competent and as culturally diverse as the US population.[4,6]

The purpose of this study is to (a) analyze past and current trends in the diversity and inclusion of faculty from historically underrepresented ethnic/racial (HURE) backgrounds and women; (b) review the challenges and best practices related to achieving faculty diversity; and (c) propose innovative interventions for increasing the diversity and inclusion of dental faculty members in the future.

2 | DEI AMONG DENTAL SCHOOL FACULTY IN THE UNITED STATES: SOCIO-DEMOGRAPHIC TRENDS

Definitions of terms repeatedly used throughout this manuscript are provided before analyzing the socio-demographic trends among dental school faculty members. Diversity refers to having representation of individuals with differences based on their social identity characteristics such as their ethnicity/race, socioeconomic status, age, gender, ability, language, religion, sexual orientation and gender identity, and geographical area, among others. Equity ensures equitable treatment and access to resources and opportunities for everyone. Inclusion implies that all people experience a cultural climate that allows them to be a valued member of a community.[4] The ultimate goal of diversity, equity, and inclusion (DEI) is to create social justice for everybody and to dismantle racism, sexism, and other types of discrimination by promoting social justice on structural/systemic, interpersonal, and personal levels.

The analysis of demographic faculty data in this section uses the terms and definitions utilized by the American Dental Education Association (ADEA) when discussing faculty diversity data. The ADEA Annual Survey of Dental School Faculty is the main source of data concerning the diversity of faculty members in US dental schools. This data collection took place annually across all accredited US dental schools since the early 1980s until 2018–2019. In recent years, ADEA used the term "Historically Underrepresented and Marginalized" (HURM) faculty. This term represents historically underrepresented racial/ethnic faculty, women faculty, faculty identifying as LGBTQ+, faculty with disabilities, faculty who identify as religious minorities, and other marginalized populations.[6] In addition, ADEA defined "Historically Underrepresented Racial/Ethnic" (HURE) faculty to include full-time and part-time faculty from all racial/ethnic groups that are underrepresented among dental school faculty relative to their groups' percentages in the total US population. HURE faculty includes non-Hispanic American Indian/Alaska Native, non-Hispanic Black/African American, Hispanic of all races and non-Hispanic Native

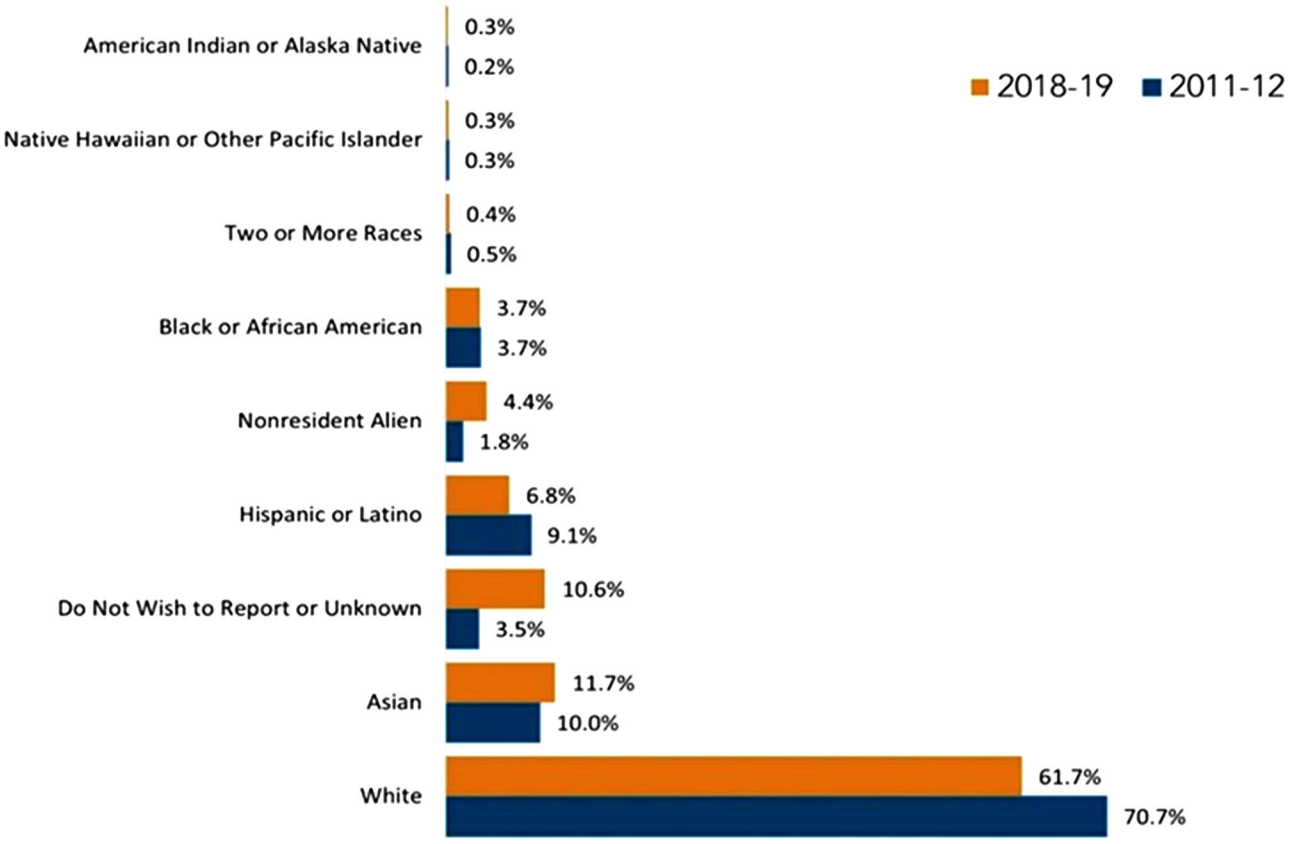

FIGURE 1 Full-time and part-time dental school faculty by race and ethnicity in 2011–2012 and 2018–2019. *Note*: Percentages may not total 100% because of rounding off. 2011–2012 is the first year for which American Dental Education Association (ADEA) reported the race and ethnicity data from the ADEA Survey of Dental School Faculty according to the revised federal government guidelines. *Source*: ADEA Analysis of American Dental Education Association, survey of dental school faculty, 2011–2012 and 2018–2019, as of November 1, 2021

Hawaiian or Other Pacific Islanders.[6] The reported trends of diversity among US dental school faculty focuses first on describing trends among faculty from HURE backgrounds and then for women separately. In a second step, we will discuss the statistical information for men and women from different ethnic/racial backgrounds. However, it is important to note that the analyzed data are not based on self-reports of faculty members directly to ADEA. Instead, dental school representatives provided the ethnicity/race and gender information in the annual dental school survey to ADEA.

This next section focuses on data collected in 2011–2012 and in 2018–2019. This decision was made because 2011–2012 was the first year when ADEA collected demographics data according to the revised US Department of Education guidelines and 2018–2019 was the most recent year for which data were available. Gender-related data considered women and men only, because ADEA's answer categories for gender were "female," "male," and "do not wish to report." Further, this research focused on full-time and part-time US dental school faculty only and did not include faculty from dental education programs not in US dental schools. These data captured allied dental education faculty if they were in a US dental school. Figure 1 presents an overview of the percentages of dental school faculty from different ethnic/racial backgrounds in 2011–2012 versus 2018–2019. The fact that the percentages of "Do not wish to report" and "Unknown" increased from 3.5% in 2011–2012 to 10.6% in 2018–2019 complicates the interpretation of these data.

The comparison of the percentages of faculty members from HURE backgrounds with their groups' representation in the total US population shows a growing parity gap.[7] Table 1 presents a population parity analysis between professionally active dentists overall and dental school faculty specifically from HURE backgrounds and the US population from these backgrounds.[7] This table shows that the parity gap widened between 2011 and 2019. In 2019, 9.5% of active dentists and 11.1% of dental school faculty in the US identified as members of HURE groups. In contrast, HURE communities comprised almost a third of the US population (31.9%) in the same year.[7] This gap expanded slightly for dentists between 2011 and 2019 and more substantively for dental school faculty. It is unclear how much the growing share of the "Do not wish to report" or "Unknown" race and ethnicity categories contributed

TABLE 1 Frequency/percentage of the US population, professionally active dentists, and US dental school faculty from historically underrepresented ethnic/racial (HURE) backgrounds in 2011 versus 2019 and parity gap information

Historically underrepresented ethnic/racial (HURE) groups	2011		2019	
	Frequency	%	Frequency	%
US population	93,036,828	29.9%	104,750,541	31.9%
Professionally active dentists	16,077	8.6%	19,053	9.5%
Dental school faculty	1347	13.4%	1154	11.1%
Parity gap information		*Percentage points*		*Percentage points*
Parity gap: dentists vs. population		21.2%		22.4%
Parity gap: dental school faculty vs. population		16.5%		20.8%

Note: The percentages and the percentage points differences are rounded to the first decimal. The dental school faculty numbers reflect US dental full-time and part-time faculty during the 2018–2019 academic year as reported by the dental schools. The US population estimates are based on the 2010 Census and reflect changes to the April 1, 2010 population, estimated on July 1 of the respective year. HURE is comprised of non-Hispanic American Indian/Alaska Native, non-Hispanic Black/African American, Hispanic/Latinx of all races and non-Hispanic Native Hawaiian or Other Pacific Islander.

Source: Analysis of US Census Bureau, Population Division, annual estimates of the resident population by sex, race, and Hispanic origin for the United States: April 1,2010 to July 1, 2019; ADEA analysis of American Dental Association (ADA), Health Policy Institute analysis of the ADA masterfile, unpublished data, as of October 2020; ADEA analysis of ADEA, Survey of Dental School Faculty, 2011–2012 and 2018–2019.

to these changes. For dentists, this particular category almost doubled from 2.3% to 4.1%, while it tripled for dental school faculty from 3.5% in 2011–2012 to 10.6% in 2018–2019. Examining the HURE ethnicity/race components, the Black/African American and Hispanic groups witnessed an expanding gap between their proportions among dentists and their segment of the US population and among dental school faculty and the US population, respectively. Most of the differences found for HURE race and ethnicity groups were small. However, the most significant change was the rise in the disparity between the shares of Hispanic faculty versus the Hispanic population, from a 7.5 percentage point difference in 2011–2012 to 11.6 percentage points in 2018–2019.

The declining parity between the proportions of HURE groups within dental faculty and the US population stems from the divergent path of the HURE representation in the two sets. While the percentage of US residents identifying as part of HURE groups rose between 2011 and 2019,[7] the share of HURE faculty declined during this time by 2 percentage points. This is mainly due to the decline in the share of the Hispanic/Latinx faculty from 2011–2012 to 2018–2019, as the proportion of the other HURE faculty groups was relatively unchanged (see Figure 1). An additional factor was the growing percentage of faculty not disclosing their ethnicity/race.

When considering faculty members' gender in addition to their ethnic/racial background, the data showed that men from HURE backgrounds represented the majority of the decline among HURE faculty. Between 2011–2012 and 2018–2019, 193 fewer HURE faculty members were reported in the ADEA annual data collection and 69% of them were men, mainly Hispanic male faculty. In addition, 21 fewer African American male faculty members were reported in 2018–2019 than in 2011–2012. While the number of male faculty declined overall by 6%, the number of male faculty from HURE backgrounds decreased by 19% over this period.

The number of faculty women from HURE backgrounds also declined, but to a lesser degree. US dental schools reported 5% fewer female faculty members from HURE backgrounds, with the drop in the number of Hispanic female faculty driving this decline. The total number of female faculty increased by 16%, driven by women from Asian American backgrounds, international faculty, and faculty without reported ethnicity/race information. Overall, the percentage of women faculty is increasing slowly in the US dental schools. Female dental faculty members accounted for 33% of the faculty workforce in 2011–2012 and for 37% in 2018–2019. For some ethnic/racial groups, the percentage of women faculty was higher than the percentage of male faculty members, such as among African American (53%), Hispanic (52%), and faculty from HURE backgrounds overall (52%). White, non-Hispanic women were still only 32% of White faculty members in 2018–2019.

The rise of diversity among faculty members was higher than the inclusion of underrepresented groups in decision-making at the highest administrative levels. Faculty from HURE backgrounds have made only small gains in chair positions (2011–2012: 12.2% vs. 2018–2019: 13.8%). There is still a long way to go to achieve parity with the proportion of HURE groups in the US population. The 2018–2019 percentage included 18 African American male and seven African American female department chairs. In addition, by 2018–2019, only 14.1% of "all types of dean" positions (dean, dean emeritus, interim dean, associate dean, and assistant dean) were held by faculty from HURE backgrounds, including 11 African American males and 15 African American females.

Women made more progress in gaining administrative leadership positions than achieving numbers among dental school faculty over the period analyzed. The percentage of women chairs at US dental schools increased by 5.3 percentage points from 20.2% in 2011–2012 to 25.5% 7 years later. This was still below their proportion among overall dental school faculty and far from parity with male faculty. In 2018–2019, women were at parity for their proportion in the faculty and their percentage in administrative leadership at 37%. This rise from the 29%, 7 years earlier was a much faster gain than the growth from the 33% overall proportion of female faculty in 2011–2012. There is much more advancement that needs to be made to get to parity and inclusion among dental school faculty by race and ethnicity and/or gender.

3 | BEST PRACTICES AND CHALLENGES RELATED TO ACHIEVING DENTAL FACULTY DIVERSITY AND INCLUSION

When considering these demographic changes among male and female dental educators from HURE versus non-HURE backgrounds, one conclusion is clear: the dental education workforce must further diversify both among faculty members as well as in the academic leadership ranks; only then can this workforce optimally train future dental care providers to have the cultural competency and humility to treat the increasingly more diverse future patient populations. Optimally educated dentists are critical for providing the best possible care for all patients and for overcoming oral healthcare inequities and disparities in the United States. The questions then are which best practices achieve this goal and which challenges have to be overcome. Table 2 provides an overview of best practices and suggests targeting (a) increasing the applicant pool, (b) improving the recruitment of faculty from diverse backgrounds optimally, and (c) developing best practices to support the retention/promotion of dental educators from HURE backgrounds.

3.1 | Best practices: Increasing the applicant pool

In 2021, Nalliah et al. showed that 4.7% of Black/African American students attended US dental schools in 2000 and 5.78% in 2019.[8] The enrollment percentage for Hispanic/Latinx students increased from 5.36% in 2000 to 10.0% in 2019. These data showed that despite the changing racial/ethnic demographics in the United States, the majority of dental students were still White.[8] This situation has to change if we want to increase the number of faculty members from diverse backgrounds. Creating enrichment programs for high school and college students from diverse backgrounds and modifying admissions practices are two best practices to achieve this goal.

Several dental schools have made exemplary efforts in this regard. For example, Columbia University School of Dental and Oral Surgery developed the Science and Technology Entry Program (STEP) for middle and high school students, a D.D.S. Minority Admissions Program, a Postdoctoral Minority Admissions Program, and the "Zero" Tuition Minority Dental Assistant Training Program.[9] Boston University Goldman School of Dental Medicine (GSDM) implemented their Oral Health Sciences (OHS) pipeline program to improve the academic preparedness of students from HURM groups for dental school admission.[10] The University of Michigan School of Dentistry developed a summer enrichment program for senior college students[11] and a second program for sophomore and junior college students.[12] Finally, the University of Texas Health Science Center at Houston implemented an Early Acceptance Program for students from seven different schools with traditionally high numbers of students from underrepresented minority (URM) backgrounds and collaborates with other universities on a summer enrichment program.[13] These examples show that academic pipeline programs can play an essential role in increasing student diversity in dental education. Furthermore, pre-dental and pre-medical post baccalaureate programs across the United States also supported students from disadvantaged and/or minority backgrounds in their efforts to prepare themselves optimally for the dental school admission process.[14,15]

In addition to offering enrichment opportunities, it is also crucial to create an environment of inclusivity and equity in college. Encountering prejudice and racism can result in a significant loss of students from HURE backgrounds who intended to study science.[16] This reduces the applicant pool for students matriculating into fields such as dentistry and ultimately the faculty applicant pool.

Once a student approaches the dental school admissions process, it is important to structure this process optimally. In 2010, Price et al. described effective admissions practices to achieve greater student diversity in dental schools.[17]

3.2 | Best practices: Recruitment considerations for increasing faculty diversity

Columbia University School of Dental and Oral Surgery also developed initiatives for the recruitment of faculty from HURM backgrounds. Having a Health Sciences Affirmative Action Committee review the results of searches

TABLE 2 Strategies for increasing faculty diversity

Strategies for increasing faculty diversity		
Increasing the diversity of the applicant pool	**Recruitment of faculty from diverse backgrounds**	**Retention/promotion of faculty from diverse backgrounds**
Introduce education about dental careers into primary and secondary education systems beginning in elementary school	Examine recruitment procedures to ensure that information is disseminated to a diverse population of hiring agencies and organizations	Ensure that incoming faculty members encounter a diverse, equitable, inclusive, and supportive environment upon arrival
Increase the diversity of the dentistry applicant pool by implementing academic enrichment programs for high school and college students	Obtain information from HURE* faculty regarding their suggestions for the recruitment of HURE faculty; involve them in the recruitment process	Provide solid orientation programs for incoming faculty members to inform them about resources and expectations
Establish effective recruitment partnerships with undergraduate institutions that contain a high population of HURE* students	Conduct an analysis of recruitment practices and of faculty hiring practices	Establish a strong mentoring and sponsorship network and faculty coaching
Invest finances and resources into increasing the diversity of the dental student population (e.g., scholarships)	Implement implicit bias workshops for all Search Committee members	Provide startup funds to support necessary faculty development opportunities and needs and offer Faculty Loan Forgiveness Programs
Create and support an inclusive, supportive and welcoming dental school environment (see CODA Predoctoral Standard 1-3)	Ensure representation of Search Committee members from diverse backgrounds (e.g., ethnicity, dental specialties)	Include faculty on collaborative grants and papers
Change student admission policies to utilize holistic admission processes and avoid systemic implicit biases	Ensure that individuals rotate off the search committee so that no particular individuals dominate the process	Create a safe space for faculty members to voice their opinions and provide training on cultural competency
Diversify the admissions committee and the students, staff, and faculty members participating in the recruitment and interviewing process	Include students, staff, and faculty from HURE backgrounds in the interview process	Adopt tenure extension circumstances for specific situations and make sure that expectations are clear for tenure/promotion
Make implicit bias workshop participation compulsory for Dental School Admission Committee members	Monitor the number of applications versus the number of HURE faculty hired	Interview faculty who left the institutions to see what they would have needed for retention
Monitor the number of applications versus the number of HURE* students admitted	Set department and division diversity goals	Conduct an analysis of the retention practices
Adhere to the CODA Predoctoral Accreditation Standards 1-4 and 1-3	Adhere to the CODA Predoctoral Accreditation Standards 1-4 and 1-3	Adhere to the CODA Predoctoral Accreditation Standards 1-4 and 1-3

Abbreviations: CODA, Commission on Dental Accreditation; HURE, historically underrepresented racial/ethnic.

and selection of candidates assured that applicants from HURE groups were considered for faculty positions.[9]

Other dental schools with low percentages of faculty from HURE groups need to explore why this is the case. Creating diversity committees to analyze the diversity initiatives of their institutions can be helpful.[18] Interviews with faculty from HURE backgrounds, increased marketing at academic conferences, and the development of targeted marketing material have been utilized as well when recruiting faculty.[19] Helping to overcome socioeconomic barriers to medical careers has been addressed as well.[20] Specific to dental education, Sinkford et al. established the Minority Dental Faculty Development Program. Their intent was to foster academic partnerships, provide mentoring, and create institutional commitment and leadership to increase the number of HURE dental students interested in careers in academic dentistry.[21,22]

3.3 | Best practices: Retention and career promotion efforts

Once a new faculty member from a HURE background begins their faculty career, encountering implicit and

explicit biases[23] and unfair treatment can affect the ability of an institution to retain this faculty member and affect the ability of the faculty members' opportunity to obtain leadership positions. For example, when McMaster University's Department of Medicine analyzed if there was inequity in leadership positions and salaries, the data showed an underrepresentation of women and people of color. Both groups reported experiencing unprofessional behavior directed towards them.[24] The difficulty in maintaining a diverse faculty pipeline can be directly related to the treatment of dental faculty from HURE backgrounds and women. Therefore, it is necessary to create an environment of inclusivity and support. To address this issue, it can be helpful to implement a culturally aware mentorship program for newly recruited HURE faculty to institute concrete changes for inclusion and belonging.[25]

Lessons for the retention of faculty from HURE backgrounds can be learned from the efforts made to retain and promote women dental faculty (see Table 3). The data presented above described the increase in the percentage of women dental faculty and administrators. Women clearly benefitted from the climate of support by organizations such as ADEA and national policies aimed at increasing the number of women in health professions. In 2003, ADEA published an association report on the Advancement of Women in Dental Education, which detailed their efforts to increase the number of women in dental education.[26] The initiatives developed include the Enid Neidle Scholar program, Women Liaison officers, Women's Administrators' Breakfast at the ADEA Annual Deans' Conference, ADEA International Women's Leadership Conference, Women's Health Information Network, ADEA Annual session, Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM), and the ADEA Leadership Programs.[26] ADEA also supports the Women in Leadership section whose priorities are leadership development, work–life balance, mentorship, and faculty success. Other initiatives such as the International Association for Dental Research (IADR) "Women in Science Network" examined dental academia policies, recruitment and retention, promotion and tenure, as well as salary, childcare/family leave, and mentorship topics.[27]

4 | CHALLENGES TO INCREASING THE PERCENTAGES OF FACULTY FROM HURE BACKGROUNDS

Despite the progress for women in dental education, major challenges still exist in senior leadership positions.[28] Women have been underrepresented as presidents and executive directors of professional organizations, chief editors of scientific journals, and department chairs.[28–30] However, the number of women AADR members increased in the past decade, while the number of men declined.[31] A national study of career aspirations of women members confirmed that women are "leaning in" to seek leadership roles in academic dentistry despite the fact that pay equity, faculty development, and mentoring are still needed for their advancement.[32]

Over the years, many initiatives were developed to increase dental faculty diversity, but the number of HURE minorities and women in leadership positions are still small.[32] Identifying the reasons for this fact is important for making significant progress in the future. Challenges reported focused on problems with implementing the best practices described above. Research identified challenges with increasing the student pipeline,[10,33,34] changing student admission policies,[17] recruiting a diverse population of faculty,[35,36] eliminating bias from search committees and diversifying search committees,[17] and creating an environment supporting inclusivity,[9] mentorship,[21,24] and sponsorship. Progress entailed developing new policies, strategies, and initiatives to address the challenges stated above. In order to create the initiatives necessary to produce diversity, leadership at all levels must be supportive and create a humanistic environment as well as a climate of valuing DEI.[36] A lack of institutional commitment to DEI was especially detrimental to the achievements and well-being of students, faculty, and staff from HURE backgrounds.[37] Creating a climate that values DEI includes providing financial support and resources, implementing sustainable policies and practices, and making sure that the Commission on Dental Accreditation (CODA) accreditation standards 1-3 and 1-4 are strongly implemented and obtaining input for diverse faculty on factors important to their recruitment, retention, and success.[38,39]

In 2019, Gangwani et al. argued that the three main barriers to advancement in leadership and high-rank academic positions in the fields of medicine and dentistry are a lack of appropriate role models and mentorship, a lack of peer support for women's promotion through the academic ranks, and the persistence of implicit biases and negative stereotypes.[40] One could argue that these same barriers also apply to the advancement of faculty from HURE backgrounds. In addition, women also experienced challenges related to work–life balance, imposter syndrome, pay equity, and disproportionate workload.[27,41,42]

Finally, institutions also reported that they faced biases in the selection process or a lack of diversity in the selection committees when recruiting HURE faculty.[43–45] The main question at this point is which recommendations can be made for interventions to overcome these challenges and increase best practices for increasing the diversity and inclusion of dental faculty members from HURE backgrounds.

TABLE 3 Strategies for increasing the percentages of women in academic dentistry and dental leadership

Strategies for increasing the percentages of women in academic dentistry and dental leadership	
Recruitment	**Retention**
Search committees • Search committee policies should be reviewed on a regular basis to prevent institutional biases. • Search committees should consist of members from diverse backgrounds • All Search committees should receive training in detecting unconscious biases to prevent hiring and job discrimination	*Institutional priorities* • Including women on research committees and scientific review and editorial boards should be supported *Mentorship initiatives* • Institutions should communicate that mentorship is important for personal and career development • Institutions should have mentorship programs that positively impact research productivity, grant success, and publications
Family-friendly policies • Institutions must develop family-friendly policies such as paid maternity/paternity leave • Institutions must develop family-friendly policies such as the possibility of a delayed "tenure clock" • Institutions need to better clarify the pathway to promotion, especially to full professor	*Peer support* • Institutions should provide community building opportunities to allow getting to know peers • Institutions should encourage collaborations among peers *Leadership training and funding* • Institutions should support leadership training in areas of conflict resolution, diversity, inclusion, communication skills, organizational change to improve women's leadership and administrative skills *Student and faculty performance evaluations* • Institutions need to consider how faculty performance is evaluated in an equitable way • Institutions should consider bias correction as a means of recalibrating scores
Pay equity • Institutions should equalize starting salaries • Institutions should audit their pay practices across all levels • Institutions should publish salary ranges to address differences in earning potential • Institutions should ensure that women are paid the same as their male colleagues for equal work	*Implicit/explicit biases and micro-aggressions* • Institutions must develop educational interventions to educate students, faculty, and staff about detecting and overcoming implicit and explicit biases related to women in leadership positions *Collaboration* • Institutions should encourage women in dental academia to network and collaborate with other groups such as the AAMC GWIMS and the GSA to develop joint initiatives to increase diversity and address inequities *Collection of data and funding* • Continued funding to monitor progress over time to and assess effectiveness of interventions with studies of groups large enough to be representative is needed

5 | STRATEGIES FOR INCREASING THE DIVERSITY AND INCLUSION OF DENTAL FACULTY MEMBERS FROM HURE GROUPS

In 2021, the Diversity, Equity, and Inclusion (DEI) ad hoc Committee of the American Association for the Surgery of Trauma organized a symposium to discuss how to ensure a diverse surgical workforce. This group identified an impressive set of strategies for overcoming the lack of faculty diversity and inclusion. Their recommendations included obtaining internal data, establishing DEI committees, including implicit bias training, reviewing hiring and compensation practices, supporting department members doing the DEI work, committing adequate funding, being intentional with DEI efforts, and developing/supporting alternate pathways for promotion and tenure.[36]

In proposing strategies for enhancing faculty diversity in academic dentistry, research examined the role of faculty ethnicity/race and gender. However, while student pipeline programs to diversify the student population were quite effective,[9–14] research concerning efforts to increase the diversity and inclusion of faculty from HURE groups has been limited. More research is available concerning strategies to increase the percentages of women faculty members (see Table 3). The following considerations describe these findings and consider if they might also be useful for increasing the percentages of dental faculty members from HURE backgrounds. The goal is to reflect on institutional, interpersonal, and personal biases that prevent the increase of the percentages of women and faculty from HURE backgrounds.

5.1 | Strategic considerations: Overcoming institutional biases

There is empirical evidence that women and faculty from HURE groups in dentistry face institutionalized barriers to career progress that men and faculty from other ethnic/racial backgrounds do not face. Institutions must acknowledge that policy and culture changes are necessary to increase the diversity of the dental faulty workforce. For example, institutions must develop family-friendly policies such as paid maternity/paternity leave and a delayed "tenure clock" for the recruitment and retention of parents. Institutions also need to describe the pathway to promotion, especially to promotion to full professor, because in academia, this promotion is usually the gateway to leadership positions.[46,47]

One central aspect of institutional biases is salary inequity. Research showed gender-based disparities in faculty members' starting salary and early career earning potential.[47,48] More specifically, an analysis of data from the 2018–2019 ADEA Survey of Dental School Faculty showed that women faculty were still paid less than men at all career levels, including at the dean level.[49] Policy changes are crucial to ensure that salaries of women and faculty from HURE groups are equitable to those of their counterparts.

One factor that affects salaries and promotions are student and faculty peer evaluations. Biases in performance evaluations are an additional challenge to the advancement of women in academia.[50,51] Research is needed to explore if these biases are also affecting dental faculty members from HURE backgrounds, and how bias corrections and recalibration of scores can be achieved.

Institutional biases also tend to affect the amount of service work assigned to women faculty. Such service work does not necessarily increase the status of women and may instead compete with the time needed to advance research and publications required for tenure and promotions.[52] However, including women and faculty from HURE groups on committees that might open doors to professional opportunities such as research committees and scientific review and editorial boards should not be just mandated, but an institutional strategic priority.[27,53]

5.2 | Strategic considerations: Overcoming interpersonal biases

Interpersonal implicit and explicit biases can start during the recruitment process. All members of search committees should therefore be required to participate in unconscious bias training to prevent hiring and job discrimination related to women and faculty from HURE backgrounds.

Interpersonal biases can also result in suboptimal mentorship, which in turn can affect research productivity.[54] Additionally, mentorship is also important for personal and career development, which may ultimately lead to improved productivity.[40] Mentorship initiatives are important on a local and national level. Sponsorship can also be quite impactful for improving the advancements of minority faculty in medicine.[55–57]

A final source of interpersonal biases can present itself as a lack of peer support, mentoring, and sponsorship of faculty from HURE groups and women in academic dentistry and medicine.[55,57] A lack of role models and peer support are impediments to the progress of women in academic health care.[40] Workplace-based peer support is an effective faculty development strategy. Peers can support careers as collaborators and shape the culture of the workplace.[58,59] Diverse hiring practices and peer support programs are ways to strengthen faculty well-being and resilience by providing one-on-one peer support and resources.

5.3 | Strategic considerations: Overcoming personal biases

Every human being has implicit and explicit biases as part of their normal information processing strategies.[23] Healthcare providers' implicit biases were discussed as one reason for the existence of health inequities in the 2003 Institute of Medicine Report entitled "Unequal treatment."[60] In the context of increasing the percentages of dental faculty from HURE backgrounds and women, implicit biases can hinder objectively valid perceptions of the environment. Institutions should therefore develop implicit biases workshops to educate faculty about

detecting explicit and implicit biases related to ethnicity/race and gender, and train all faculty and administrators in strategies to overcome biases and thus promote institutional change.[61]

5.4 | Summary

In summary, reflecting on research concerning the increase of women in academic dentistry might be helpful when considering increasing the percentage of faculty members from HURE or other marginalized backgrounds. Changing the cultural climate of an institution, its recruitment, and its retention/promotion efforts to reflect the value of DEI and ultimately social justice is beneficial for all community members. Collaboration of members from different marginalized backgrounds based on the intersectionality of the members' backgrounds could result in a greater sense of belonging of all community members.

Given the need for evaluation research of change strategies, increasing institutional research funding for developing and evaluating leadership training programs in areas of conflict resolution, communication skills, organizational change, diversity, inclusion, and implicit bias reduction could be of benefit to the institution.[62] Continued funding to monitor progress over time and to measure effectiveness of specific interventions is crucial.[63] The ADEA Diversity Toolkit should also be used as a strategic proactive resource for implementing DEI.[6]

6 | CONCLUSIONS

DEI are essential for achieving excellence in teaching, research, and clinical care in dental institutions. However, achieving faculty diversity and inclusion has been an ongoing challenge with limited success over the years. In 2018–2019, women still represented only 37% of dental school faculty, and faculty from HURE backgrounds only 11%. In terms of chair positions, women held only a quarter and HURE faculty members 14% of these positions. Considering any dean position (dean, dean emeritus, interim dean, associate dean, and assistant dean), 37% were women, 14% were from HURE backgrounds, and 8% were HURE women. The analysis of the 2011–2012 to 2018–2019 dental faculty data showed that much more progress needs to be made to gain parity and increase DEI of dental school faculty by ethnicity, race, and/or gender.

In order to create this much-needed change, efforts to increase the applicant pool, to change recruitment strategies, and develop solid retention and promotion efforts must be made. Best practices concerning increasing the percentages of dental students from HURE backgrounds include placing resources into the development of more summer enrichment and post baccalaureate programs, changing the admission process policies, and calibrating admission committees. Faculty recruitment efforts have to consider creative recruitment strategies and careful selection and training of search committee members. Retention efforts must focus centrally on creating a cultural climate that allows all faculty members to feel welcome, respected, and included in the dental school environment; have the mentorship, sponsorship, collaborative opportunities; and appointment, promotion and tenure guidance, support and resources needed to flourish. It is important to realize that faculty diversity is only sustainable if inclusion and equity exist. The evaluation of research efforts designed to bring about change and create a more diverse and inclusive work force is crucial. Institutions must evaluate their diversity and equity-related practices and the policies implemented to determine whether the desired outcomes are achieved. Only then will there be an increase in faculty from HURE backgrounds that can optimally train the future dental workforce that will provide the best possible oral healthcare for all dental patients in the United States and only then will there be a continued increase in women and persons from HURE backgrounds in leadership positions who can help to shape the future of dentistry.

EDITOR'S DISCLOSURE

This article is published in the *Journal of Dental Education* as part of a special issue. Manuscripts for this issue were solicited by invitation and peer reviewed. Any opinions expressed are those of the authors and do not represent the *Journal of Dental Education* or the American Dental Education Association.

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How to cite this article: Cain L, Brady M, Inglehart MR, Istrate EC. Faculty diversity, equity, and inclusion in academic dentistry: Revisiting the past and analyzing the present to create the future. *J Dent Educ*. 2022;86:1198–1209. https://doi.org/10.1002/jdd.13013