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Source: Environmental Health Insights, 16(1)

Published By: SAGE Publishing

URL: <https://doi.org/10.1177/11786302221077513>

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Insights into Diversity in the Environmental Health Science Workforce

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Environmental Health Insights
Volume 16: 1–2
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DOI: 10.1177/11786302221077513



RECEIVED: January 6, 2022. ACCEPTED: January 13, 2022.

TYPE: Insights into Diversity in the Environmental Health Science Workforce - Editorial

FUNDING: The author(s) received no financial support for the research, authorship, and/or publication of this article.

DECLARATION OF CONFLICTING INTERESTS: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Environmental Health Science (EHS) professionals protect the public from environmental threats by conducting risk assessments and recommending preventative measures based on scientific findings. The EHS field itself is diverse in scientific areas (eg, air quality, water quality, food safety, healthy homes, preparedness, climate change, vectors/pests, tracking/informatics, occupational health, industrial hygiene) studied and evaluated by researchers and practitioners (<https://www.neha.org/eh-topics>). Scientific findings discovered in the EHS field help health leaders analyze and develop policies to protect health based on practical knowledge.¹

Diversity is currently a wide-ranging societal topic, and this issue impacts the EH field. Many aspects related to diversity in EH involve the communities affected by environmental exposures and the EHS workforce serving these communities.

Disparities in Communities at Risk of Environmental Exposures

Environmental exposures impact the health of everyone; however, in some instances, environmental exposures may be disproportionately influenced by racial, ethnic, gender, and socioeconomic factors.^{2–5} For example, high ambient air pollution levels are often measured^{6,7} and pollution sources are often located^{8,9} in or nearby minority communities. The Centers for Disease Control and Prevention (CDC) leads the Environmental Public Health Tracking Network that provides information on factors such as demographics, socioeconomic, and EHS issues related to environmental justice.¹⁰ Tools like this one help identify areas of need for further investigation through research and for improved intervention and mitigation via policy change.

EHS Workforce

There is a need for diversity (ie, race, ethnicity, gender, religion, socioeconomic background, geographic location, and others) in the EHS workforce to promote equal representation and protection of diverse communities protected by EHS professionals.^{11,12} In some cases, EHS professionals of a particular race/ethnicity, gender, or other group may have a better understanding of that group's culture and/or linguistics, hence enhancing rapport when working in diverse communities.⁴

Furthermore, community engagement during the process of assessment and planning of EHS services can streamline community acceptance of the decision-making process.⁴ Diversity in the EHS workforce brings new ideas, perspectives, and approaches, inevitably helping advance the field.^{11,13}

EHS Research

Diversity should also be encouraged in the EHS academic/industry research community as a diverse set of researchers may focus efforts on advocating for the health of diverse communities.^{5,12,14} This practice builds knowledge of EHS issues in many different types of communities and groups, hence improving risk assessments and collectively protecting public health in underrepresented and well represented communities. The National Institute of EHS (NIEHS) aims to encourage participation in EHS research by underrepresented groups by increasing discussions of the importance of diversity in their EHS training programs.¹⁵ Longstanding relationships developed between researchers and communities can build trust, thereby increasing effectiveness, richness, and practical application of research over time.¹⁴

EHS Students

Recruitment of a diverse student body in EHS undergraduate and graduate academic programs can be a starting point for increasing diversity in the EHS workforce. This should be done in collaboration with local, state, national, and international EHS programs that will help expand the reach of student recruitment and advertising describing the benefits of working in EHS. Opportunities should also be taken to highlight diverse EHS professionals (eg, inviting them as guest speakers, featuring them on appropriate social media platforms) among current and potential EHS students during academic courses, seminars, and recruitment/promotional activities. Efforts should also be focused on improving the diversity of faculty in EHS programs, which may improve self-confidence among students during advising and consultation and, consequently, student retention within the program.

Universities should encourage underrepresented students (eg, women, minority groups, others) to enroll in EHAC-accredited EHS programs. This can be accomplished, in part, by offering summer research experiences in EHS for



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undergraduates thinking of applying to graduate school and/or contributing to scholarship initiatives. For example, a “Graduate Pathways” program has been developed in eastern North Carolina so that undergraduate students at Fayetteville State University (<https://www.uncc.edu/>; primarily minority students; ca. 6700 total students) are connected to faculty in EHS (and other fields) at East Carolina University (www.ecu.edu; ca. 28000 students) to explore experiential learning opportunities and encourage future enrollment in graduate programs.¹⁶

The National EH Association (NEHA) is spearheading initiatives to increase diversity in the EHS workforce. The NEHA implemented the “Dr. Bailus Walker, Jr. Diversity and Inclusion Awareness Award” in 2021 to recognize those who have helped develop/enhance diversity, inclusion, and competence in the EHS field.¹⁷ The Association of EH Academic Programs (AEHAP) works to promote and support academic EHS programs accredited by the National EHS and Protection Accreditation Council (EHAC) (<https://www.nehspac.org/>). The AEHAP is working to increase diversity in the EHS workforce by conducting recruitment workshops and mentoring faculty at minority serving institutions, supporting faculty of EHAC-accredited institutions who recruit minority students, and exhibiting at conferences where diversity is prioritized.¹⁸ Alumni of underrepresented populations (eg, women, minority groups) should be encouraged to enter leadership roles (eg, Board of Directors, Executive Board) in local/state/national EHS associations to advocate/lead others to enter the EHS field.¹³ Strong role models continue to be needed in the EHS field for underrepresented populations to encourage others to become a part of this essential workforce.

Diversity in the EHS workforce is important to improve the health of entire communities/societies. Public health is inevitably connected at local, state, regional, and global levels, hence it is essential to work together to advocate for healthy individuals and communities. There is currently a need to increase diversity in the EHS workforce and efforts are underway at various agencies to develop and implement plans of action. It is important to recognize that this approach benefits the collective society. Collaboration and open communication across diverse EHS researchers, practitioners, students, and communities will increase public trust, thereby improving risk assessments and broadly protecting public health.¹⁹ More work is needed to assess the extent to which inequality exists in the EHS workforce and increased diversity should be encouraged.

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