Virtual Mutual Mentoring to Reduce Barriers for Black Energy Scholars

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There is a *national need for increasing the number of scientists and engineers from underrepresented groups engaged in, and with, clean energy* [2]**.** Decarbonization may be the grand challenge of the 21st century and is likely to be a key driver of innovation [3]. It is critical that we engage all segments of society in finding solutions that are equitable, clean, and technology-informed [1,4,5]. Although environmental justice has been a prominent topic among social scientists, equity often gets short shrift among majority STEM researchers. In contrast, equity and inequity are not abstract concepts to Black scholars and other under-represented minorities—they are often a reality of their everyday experiences [6]. Consequently, Black scholars bring different perspectives on equity than majority researchers [7]. These perspectives, as well as the diversity of ideas, experiences and expertise possessed by under-represented scholars will be a driving force of innovation in a net zero energy system.

A key barrier identified by [8] was the lack of mentors for Black scholars at both HBCUs and PWIs. This lack means that of scholars from underrepresented communities often lack the resources they need to advance their research careers with a "goal to end the cycle of short-term and insecure academic appointments.[1]" Moreover, a key obstacle for diverse scholars who are located in PWIs is the feeling of isolation among the "pioneer" Black faculty and students at those institutions. Thus, [8] recommend establishing mentoring programs and networks for Black researchers.

One potential route for this is through *virtual, inter-institutional mutual-mentoring networks* [9,10]. Many faculty have had success following the "Every Other Thursday" model [11], which uses a novel problem-solving approach with well-developed protocols. University of Massachusetts, Amherst, for example, has had success with face-to-face mutual mentoring models, including an Engineering Women's Faculty Forum and three longstanding *Every Other Thursday* groups in the College of Natural Sciences. In addition, an NIH National Research Mentoring Network pilot project used the Every Other Thursday model and virtual technology to link Under-Represented Minority women faculty in biomedicine across 15 institutions.

This mutual mentoring model is usually face-to-face, but given the geographic isolation of many Black scholars, a remote model will increase the opportunity for mentoring. Ideally each mentoring group could meet face to face at least once a year, perhaps at a conference or focused workshop. Once groups are organized and identify a meeting

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time, the groups are facilitated by members, with members typically rotating this responsibility every meeting. Typical groups would have about 7-8 participants; and can be made up of diverse scholars at different career levels.

Scholars can be identified using a snowballing technique, building on the networks of the HBCU Community Development Action Coalition. CDAC has a Clean Energy Initiative, which focusses on increasing solar awareness, accessibility, and workforce training for institutions, students, and residents in low-to-moderate income communities surrounding HBCUs and MSIs. Scholars from HBCUs can be integrated with Black scholars from PWIs, especially R1s, which have the resources to support proposal development and similar facilitating activities. This provides two-way mentoring support. For HBCU scholars, it can help to disseminate some of the “hidden curriculum” on how to succeed in academic research. For PWI scholars, it can reduce the isolation of being the only Black scholar, and also provide connections to the LMI communities surrounding the HBCUs, communities often of particular interest to the Black scholars.

One benefit of a program like this would be increased collaboration between HBCUs and PWIs. Such collaborations make many of the resources at PWI R1s available to HBCU scholars; and often may lead to the provision of professional development opportunities for the HBCU scholars, either directly through participating in programs, or indirectly through knowledge sharing between the scholars.

Virtual inter-institution mutual mentoring networks focused on clean energy may provide one pathway to increasing the research capacity of HBCU energy researchers while addressing isolation of Black energy researchers at PWIs.

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