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Broadening the ecological mindset

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Addressing bias in faculty retention

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Abstract. The field of ecology in the United States is not fully harnessing the diverse perspectives of the American population. Two major limitations to advancing diversity and inclusion include insufficient awareness of biased attitudes and the lack of large-scale faculty engagement in diversity and inclusion programs. Academic institutions must recognize and value individuals that participate in diversity and inclusion programs. Valuing this work will motivate all ecologists to accept the responsibility for these efforts and not simply assume that the few minorities in their field can do this work.

Key words: *bias in academia; ecology interventions; ecology mentoring; ecology workforce; excluded identities in science; training diverse ecologists.*

Whereas much of this collection of papers focuses on undergraduates from diverse backgrounds entering the “ecological mindset” (e.g., Bowser and Cid 2021, Ellison et al. 2021), here we consider challenges to retention of diverse groups in ecology once in the faculty career stage. Although diverse and inclusive groups are more productive and innovative (Hong and Page 2004, Woolley et al. 2010, Nielsen et al. 2017, AlShebli et al. 2018), the field of ecology in the United States is not fully harnessing the diverse perspectives of the American population in all career stages of the academic workforce (Martin 2012, Arismendi and Penaluna 2016, Farr et al. 2017). Insufficient awareness of biased attitudes hinders the advancement of people of excluded identities (Iporac 2020). Ultimately, this fuels systemic racism at the institutional and structural levels leading to a lack of retention of persons of excluded identities.

Because of the interdisciplinary nature of the field, mentoring is essential to guide early career ecologists, making researchers of excluded identities particularly vulnerable to biased attitudes of more senior mentors. Even though biases can seriously limit effective progress in enhancing diversity, there is not enough space or training to improve biased attitudes in academia. Studies show that well-intentioned individuals that can often avoid biased responses fail to detect subtle racial biases when they occur (Monteith et al. 2001). Regardless of

intentions, individuals can have difficulty when trying to avoid responses that are generated by processes that operate outside conscious awareness (Bargh 1997, 1999, Devine and Monteith 1999). Recognizing both extreme and subtle biases and the willingness to attribute biases to internal forces are critical for learning to control them (Monteith 1993, Bargh 1999, Monteith et al. 2002). However, these implicit biases and microaggressions resulting from them may be difficult to recognize because their impacts are often somatic, rather than cognitive (Menakem 2017). Left unchecked, these biases can have a serious impact on the careers of ecologists of excluded identities and those who lack adequate training to recognize and prevent biased behavior. However, addressing implicit bias in diversity, equity, and inclusion training can have mixed results (Jackson et al. 2014). In some instances, implicit bias training may result in adverse reactions such as increased triggering of stereotypes and exclusion of particular groups (Rudman et al. 2001). Care must be taken to reduce categorization that leads to intergroup bias (Nishii 2013) and that reduces the value of individuals to their race or gender.

Diversity initiatives and training focused on implicit bias suffer from the concept of bias itself, which emphasizes individual actions and the belief that making individuals mindful of their own biases leads to positive change (Applebaum 2019). Such a focus on individual actions can take attention away from institutional (i.e., advanced by social institutions, such as colleges and universities) and structural (i.e., advanced by interconnections between institutions) biases that perpetuate unfair

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power systems. Here we consider some of the institutional and structural biases faced by academic ecologists in the faculty career stage and discuss actionable ways forward to promote positive change towards inclusion. We acknowledge there are a wealth of challenges faced by ecologists from excluded identities leading up to a faculty job, but a thorough evaluation of them could easily exceed the space allotted to this set of papers.

Academic institutions set the values for their employees by setting standards for tenure and promotion. Although many institutions have goals to support diverse student bodies, requirements for tenure and promotion have not evolved to require participation in diversity initiatives, limiting the successful adoption of and broad participation in diversity and inclusion practices. Across fields, faculty of excluded identities disproportionately engage in diversity and inclusion activities (a.k.a. invisible service), although these activities do not help them acquire tenure and promotion (Jimenez et al. 2019). This can overburden faculty of excluded identities with commitments that limit their ability to focus on efforts that advance their research, which is often perceived as the most important determinant of their success (Perkins 2006). When ecologists were surveyed to determine their value of research, teaching, service, and outreach, research was assigned the highest value most consistently, followed by teaching, and service and outreach were least valued. Most importantly, the values respondents attached on behalf of their employers generally mirrored their own values (Perkins 2006).

Reflecting on personal experiences, the balancing of invisible service with other regular demands of academic life (e.g., teaching, research, nondiversity and inclusion-based committee work) can lead to diverse scientists contributing less in other forms of service to the field (e.g., peer review of manuscripts). This balance of a heavier load than experienced by White scientists generates a peer-review system that is likely to be less diverse and thus potentially more biased against diverse perspectives. In sum, this invisible service load leads to a cycle that limits the potential innovative contributions of diverse ecologists.

Addressing institutional biases could start with acknowledging the invisible service load placed on faculty of excluded identities. Institutional administrations and faculty writ large should support antiracist committees or centers on campuses. Faculty involvement with these groups should “count” towards evaluations for promotion similar to participation in other committees related to faculty governance (e.g., curriculum committee). A key goal of such a group on campus would be to normalize conversations about identity, so that issues of diversity, equity, and inclusion become day-to-day considerations rather than occasional topics of discussion. Ultimately, all faculty should value and promote a shared responsibility in advancing diversity and inclusion regardless of their identity (Jimenez et al. 2019).

Although current diversity initiatives are largely focused on improving the involvement of groups of excluded identities, if they do not foster true inclusion they are unlikely to alter the day-to-day relational sources of discrimination that impact an individual’s experience of inclusion (Green and Kalev 2007, Sabharwal 2014). In inclusive environments, individuals of all backgrounds are treated fairly, valued for who they are, and are included in core decision making (Nishii 2013, Sabharwal 2014). This requires that individuals have equal status and an opportunity to get to know each other in more personal ways that allow them to rely less on stereotypes. Academics need the freedom to enact and engage core aspects of their self-concept and/or multiple identities (Kahn 1990, Ramarajan 2009) without suffering unwanted consequences (Ragins 2008). This can be particularly difficult in fields with few individuals from groups of excluded identities, creating an assimilationist environment where nondominant groups must conform to the values and norms of a dominant group.

When ecologists were asked to list the barriers they had to overcome in their careers, 4 of the top 25 barriers were due to leadership (i.e., lack of role models/mentors, support for research goals/interests, institutional support, mentor quality), and 8 of the top 25 barriers were issues of inclusion (i.e., gender issues, cultural support, public support/interest, social issues/activism not valued, teaching not valued, collegiality, applied research not valued; Perkins 2006). With <10% of survey respondents representative of people of excluded identities in ecology (Perkins 2006), inclusion in ecology is a barrier for all, requiring immediate action to evaluate noninclusive behaviors and their impact on performance.

In an era where trust in science has waned, science is more likely to be relevant to society if teachers and researchers reflect the diversity of the broader community (Hayes 2010). As a field, we can do more to empower all young Americans to consider a career in ecology. In addition to traditional venues for sharing research, ecologists must make every effort to inform the public about emerging science. This will require support for social media campaigns that provide content the way the public is receiving information. Academic institutions must also recognize and value individuals that participate in diversity and inclusion programs. Valuing this work will initiate wide participation in diversity programs by all faculty. Real efforts to recruit, train, and nurture all students in ecology must be made at all levels and requires critical mass. All ecologists should feel the responsibility for these efforts and not simply assume that the few minorities in their field can do the majority of the work.

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