

Title	You're from ... where, again? A critical assessment of institutional diversity in the Society for Epidemiologic Research
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Publication date	2020-06-30
Original Citation	Bovbjerg, M. L., Misra, D. and Snowden, J. M. (2020) 'You're from ... where, again? A critical assessment of institutional diversity in the Society for Epidemiologic Research', American Journal of Epidemiology, kwaa106 (4pp). doi: 10.1093/aje/kwaa106
Type of publication	Article (peer-reviewed)
Link to publisher's version	10.1093/aje/kwaa106
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Download date	2025-08-25 22:08:49
Item downloaded from	https://hdl.handle.net/10468/10499



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You're From... *Where*, Again? A Critical Assessment of Institutional Diversity in the Society for Epidemiologic Research

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Dr. Bovbjerg's time was partially funded by the J William Fulbright Scholarship Board and the Fulbright Commission in Ireland. The content of this manuscript is solely the work of the authors and does not necessarily represent the views of the funding agencies.

Conflict of interest: none declared

Running head: Institutional Diversity at SER

Abstract

The Society for Epidemiologic Research (SER) has recently taken laudable steps towards increasing diversity, equity, and inclusion within the society, including participation in the Annual Meeting. In this essay, we argue that there is one critical piece of the diversity and inclusion equation that is, however, overlooked: institution. At the 2019 Annual Meeting, a mere 8 institutions accounted for a disproportionate number of both oral concurrent sessions and symposium speakers. This lack of institutional diversity, unless addressed, will hinder SER's ability to address other aspects of diversity, equity, and inclusion.

Keywords: cultural diversity , universities

Diversity and inclusion are discussed with increasing frequency within epidemiology. We applaud the Society for Epidemiologic Research (SER) for making a concerted effort to increase diversity and inclusion in both its membership and Annual Meeting participants. With the increasing acceptance of community based participatory research approaches that actively bring participants into the research process, many of us have grown to appreciate the need to include the diverse perspectives of community members whose health is the focus of research. However, this is not the sum of what it means for professionals within epidemiology or other scientific disciplines to embrace diversity and inclusion within the scientific professions. In a growing literature on the rationale and logic for diversity in science,(1–3) scholars have articulated the advantages of diverse perspectives in solving complex problems. Gibbs notes:

The ability to see the problem differently, not simply “being smart,” often is the key to a breakthrough. As a result, when groups of intelligent individuals are working to solve hard problems, *the diversity of the problem solvers matters more than their individual ability*. Thus, *diversity is not distinct from enhancing overall quality—it is integral to achieving it*.(1) (online publication; Emphases in the original)

The literature on diversity in science, though, has not yet tackled the challenges to creating an inclusive environment that may be necessary for the success of a diverse group.

The manuscript by DeVilbiss et al(4) addresses the issue of inclusion in epidemiology, and raises questions that need to be addressed as part of increasing diversity and inclusion efforts within both SER and our discipline more broadly. The authors write:

Encouragement of diversity in the absence of inclusivity may increase the variety of researchers in an organization without necessarily improving full or quality engagement among all people if persons do not feel included, welcome, or valued.(4; page # to be added once final version of the manuscript is available)

This expansive understanding of diversity and inclusion represents a step forward for the field of epidemiology. However, we posit that more work needs to be done to address an important and largely over-looked aspect of diversity: *institution*.

Existing understanding of institutional diversity within SER

There are 84 universities in the United States that offer degrees in epidemiology.(5) Yet, roughly one-quarter of SER’s membership comes from scholars at just eight schools: Johns Hopkins University, the University of North Carolina, Harvard University, Columbia University, the University of Iowa, Boston University, Emory University, and the University of California San Francisco.(4) Below, we demonstrate that over-representation of these few institutions becomes even more concentrated among SER members achieving a high degree of recognition

at the Annual Meeting: oral presentations via concurrent oral sessions or symposia. Under-representation of epidemiology scholars from the remaining 76 US institutions (collectively referred to by DeVilbiss et al as the “bottom 75%” and “other 75%”(4)) not only hampers inclusivity efforts, but also results in the loss of potentially important contributions to the science of epidemiology.

Although DeVilbiss et al do consider institutional affiliation (i.e., being from one of the “top 25%” institutions) as a factor in their analysis,(4) there is a missed opportunity to connect institutional representation to the Society’s larger diversity and inclusion efforts. To what degree might over-representation of some institutions in SER and under-representation of others represent a missed opportunity to foster inclusion?

The association between affiliation with a “top 25%” institution and feeling “very welcomed” in SER did not provide conclusive evidence of a connection (risk ratio [RR]=1.05; 95% confidence interval [CI]: 0.97, 1.14).(4) However, individuals from “top 25%” institutions reported self-initiated participation (e.g., submitting an abstract, attending an SER talk, signing up to judge posters) in SER at levels higher than those from “bottom 75%” institutions (RR=1.14; 95% CI: 0.98, 1.30). Notably, this association was even stronger for Society-initiated participation (e.g., being a spotlight chair or serving on a committee; RR=1.30; 95% CI: 0.96, 1.63).(4) Although the 95% confidence intervals for all of these associations include the null value of 1, it is important to note that they were similar in magnitude to numerous other associations reported by DeVilbiss et.al. between membership in an under-represented and/or minority group and either self- or society-initiated participation in SER.(4) While self-reported activities and perceptions of Society members are undoubtedly critical markers of inclusion

within SER, representation of members and their institutions among public and high-profile SER venues (e.g., oral presentations at the SER Annual Meeting) is also an important measure of inclusion, and arguably a more objective one.

Institutions represented in oral presentations at SER's Annual Meeting

To assess diversity and inclusiveness of institutional representation at the most recent SER Annual Meeting (2019), we used the publicly-available Program(6) and Participation List(7) to cross-tabulate speakers at symposia and concurrent orals sessions with their respective institutions. Given our previous experience attending SER's Annual Meetings, we modified the "top 25%" list of eight schools slightly, substituting National Institutes of Health (NIH) (i.e., intramural scholars at NIH) for the University of Iowa; this group is referred to herein as the modified top 25%. It still contains just eight institutions.

We then calculated the proportion of symposium speakers and the proportion of concurrent oral sessions speakers from one of those modified top 25% institutions. Our unit of analysis was oral presenter "slots" in the program. Therefore, individuals with more than one presentation slot were counted multiple times, for each separate presentation, in both the numerator and denominator. Similarly, presentations with multiple listed speakers counted each speaker in both the numerator and denominator. We were particularly concerned with institutional representation from within US academic institutions. Therefore, we used three different denominators to calculate the proportion of SER Annual Meeting oral presentation slots occupied by speakers from the modified top 25% institutions: (i) all speaker slots; (ii) all domestic speaker slots (excluding those from international institutions); (iii) all domestic

academic speaker slots (excluding those from international institutions as well as those from industry or local health departments). To provide bounds around our point estimates, we conducted a sensitivity analysis wherein speakers who did not appear on the Participation List (and who thus had unknown institutions) were assumed all to be from a modified top 25% institution, and then assumed all to be from a “bottom 75%” institution.

Detailed results are presented in Table 1. Depending on the denominator used and whether speakers with unknown affiliation are assumed to be from modified top 25% or “bottom 75%” institutions, the proportion of speakers from these eight institutions ranged from 33.3% to 54.4% for concurrent oral sessions, and from 43.1% to 64.0% for symposia. Thus, not only do a mere eight institutions comprise one-quarter of SER members, but just eight institutions in turn comprise at least one-third, and possibly two-thirds, of oral presentations at the SER Annual Meeting. Whose voices are we missing, with such homogeneity in speakers? How welcoming and inclusive a message does this send to students and faculty from the remaining 76 schools?

Implications of homogeneity of institutions

The lack of diversity in institutional representation within SER matters on its own, but also has implications for other dimensions of diversity. First, data repeatedly show that under-represented students of color and first-generation undergraduate students are more likely to enroll in large, public universities than elite private institutions.(8,9) Some students from groups that are marginalized (e.g., Black students) are also under-represented at the undergraduate level at more elite, selective public institutions.(10) Non-elite institutions are

thus an essential part of the pipeline for under-represented students entering both graduate education and the health workforce. Graduates from under-represented groups may intentionally select postdoctoral and faculty positions at similarly non-elite institutions to capitalize on their inclusive environments and to mentor and teach students like themselves. How much of a contribution could SER make to public health education and scholarship among historically marginalized populations by deliberately increasing our outreach and engagement with institutions beyond the “top 25%”?

Conclusions

Given their long-standing positions among the top-ranked schools of public health (11) and many scientists’ commitment to the notion of meritocracy,(1) one could naively assume that the relative institutional homogeneity within SER is to be expected based on the distribution of talent. However, such thinking neglects long-standing scholarship on unconscious and structural biases resulting from reliance on informal networks for hiring (defined by Pager and Shepherd as “homosocial reproduction, or informal preferences for members of one’s own group”). (12,13) Decades of research document these preferences, through which we hire, promote, mentor, and select as speakers, those who are like us. The best work and scholars do not emerge in such a climate. The current level of homogeneity of institutional representation both within the Society and at the Annual Meeting is unlikely to change without deliberate efforts.

More importantly, this mindset also mistakes the true meaning of diversity in science, defined by Gibbs as “cultivating talent, and *promoting the full inclusion of excellence across the*

social spectrum."(1)[emphasis ours] Failure to include talent from across the social spectrum decreases the overall quality of epidemiologic scholarship by excluding the talents and perspectives of some problem solvers. The literature on diversity in science is now unambiguous that true breakthroughs are more likely to occur when diverse voices are at the table and contributing meaningfully.(14–16) We are all highly intelligent, but we do not all bring the same perspectives to public health and clinical issues. Deliberate inclusion of diverse perspectives, including scholars from a broad array of institutions, will improve the caliber of science for which our field is known.

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Table 1. Proportion of speaker slots in two categories (symposia, concurrent oral sessions) at the 2019 Society for Epidemiologic Research Annual Meeting^a who come from one of eight (modified top 25%) institutions^b.

	No. speakers from modified top 25% (numerator) ^d	total speaker slots		domestic speaker slots		domestic academic ^c speaker slots	
		denominator ^d	%	denominator ^d	%	denominator ^d	%
Concurrent oral sessions ^e							
Excluding speakers of unknown affiliation	54	148	36.5	118	45.8	111	48.6
Unknown affiliation, assumed <i>not</i> from modified top 25%	54	162	33.3	132	40.9	125	43.2
Unknown affiliation, assumed from modified top 25%	68	162	42.0	132	51.5	125	54.4
Symposia ^f							
Excluding speakers of unknown affiliation	44	91	48.4	77	57.1	75	58.7
Unknown affiliation, assumed <i>not</i> from modified top 25%	44	102	43.1	88	50.0	86	51.2
Unknown affiliation, assumed from modified top 25%	55	102	53.9	88	62.5	86	64.0

^a Data come from the 2019 Annual Meeting Program(6) and Participation List(7).

^b Johns Hopkins University, the University of North Carolina, Harvard University, Columbia University, Boston University, Emory University, the University of California San Francisco, and the National Institutes of Health.

^c "Non-academic" refers to people from industry or state or local health departments

^d Individuals who spoke twice were counted twice, in both numerators and denominators. Presentations that included two speakers were also counted twice, in both numerators and denominators.

^e Of 162 concurrent oral sessions speakers, 54 were from the 8 institutions, 14 had unknown affiliation, 30 were international, and 7 were non-academic.

^f Of 102 symposium speakers, 44 were from the 8 institutions, 11 had unknown affiliation, 14 were international, and 2 were non-academic