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Abstract for an Invited Paper
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How physics education research can reveal subjectivities in physics: Implications for physicists¹

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This talk will provide an introduction for physics audiences to the usefulness of physics education research as an approach to critically reflecting on the status quo of physics culture. Mathematicians and historians of science have forged well ahead of physicists regarding understanding the social and political nature of STEM education, and their scholarly leadership offers important guidance for our communities moving forward. Prominent research questions, theoretical frameworks, and methods for studying diversity, equity, and inclusion will be presented, as these offer important critiques of physics culture and bear significant implications for physicists at every stage in their careers. Discussion will draw on examples of studies that implement (1) quantitative and (2) qualitative research methods, and that (3) sit on the border between scholarly research and internal program evaluation. For example, research into a graduate physics qualifier shows how bias can be problematically infused into decision-making around this important programmatic benchmark. As a second example, research on the Living Physics Portal, a website designed to promote life sciences connections in introductory physics, reveals hidden values that differ by scientific disciplines and make visible opportunities to more deliberately attend to how race, ethnicity, gender, disability, or sexuality may shape faculty's participation within the Portal. Resources to support beginning or continuing critical reflection, action, and community building within physics education programs will be shared.

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