

Plenary Talk PV III Tue 9:00 E415
Educational Transformation at a Critical Time: The essential roles and promise of physicists — ●NOAH FINKELSTEIN —
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Significant, perhaps unprecedented, attention is being paid to the needs for transformation within the fields of science, technology, engineering, and mathematics (STEM) education at the undergraduate level. This talk examines how higher education STEM disciplines, and physicists and physics departments in particular, are positioned to con-

tribute to these discussions and address our challenges. I will review our own efforts in physics education transformation and the growth of work in physics education research (PER). Building from theory on student learning and educational environments, this talk will review examples of physicists’ support of learning at the individual, course, and departmental scales. Examples will consider: how we can build on understanding of student reasoning to study and transform our introductory through upper division courses, studies of how our environments do and do not support identity formation in physics, and models for engaging in sustainable and scalable transformation.