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Scaling Educational Transformation in a Physics Department (part 2 of 2)[1] STEVEN POLLOCK, NOAH FINKELSTEIN, PAUL BEALE, STEPHANIE CHASTEEN, MICHAEL DUBSON, STEVEN GOLDHABER, KATHERINE PERKINS, CHANDRA TURPEN, University of Colorado, Boulder
— We report on two interrelated research threads, sustaining and scaling of educational innovations. In this second of two talks, we examine the scaling of educational innovations into the upper division. We have begun course transformation of Quantum Mechanics and E&M, which employ the practices and findings from educational research at the lower division. Related, we examine the spread of clicker-based approaches into the upper division and graduate level courses. We have studied faculty choices about how they come to adopt these reforms, and what choices they make as they adopt new materials and pedagogical approaches. We identify critical components of success: resources (whether undergraduate learning assistants or postdoctoral science teaching fellows), faculty buy-in and inclusion (from the earliest stages), and institutional support.

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