

Abstract Submitted  
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**Structured Support and Pedagogy in Physics Gateway Courses through Coordination of Instruction and Tutorials**<sup>1</sup> KATHRYN FERNANDEZ, JULIE SHANK, JESSICA ROSENBERG, George Mason University — Studies across the STEM disciplines found that student engagement and active learning improve student attitudes, retention, and understanding, with greater impact on women and previously low-achieving students (Freeman et al., 2014; Fry, 2014; Kogan & Laursen, 2014; Laursen et al., 2014; National Research Council, 2012). Implementation of these techniques has been limited in scope and is often isolated to individual faculty (Michael, 2007). The Physics department at a large, public, R1 institution, Mid-Atlantic University, has been part of an effort to create and implement new efforts in active learning pedagogy within the calculus-based introductory sequence. This session focuses on the cross-course coordination of instruction and development of tutorials that blend conceptual and mathematical problem solving. The coordination across recitation and lecture sections is tied to the development of these tutorials, which was a mechanism for in-person student engagement but was adjusted to support students in the new online environment. Successes, challenges, and implications of this implementation for structured support in these gateway courses will be discussed, particularly as everything pivoted online.

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