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**A Study of Physics Faculty's Instructional Practices: Implications for Experiential STEM Faculty Development Model.** MARISSA SOTO, MILIANA SUSKAVCEVIC, REBECCA FORREST, MARGARET CHEUNG, ANDREW KAPRAL, University of Houston, LAWRENCE KHON, Rice University — When teaching physics, many factors determine the final impact the course will have on a student. Using STEP, a teacher content professional development program, we are studying the incorporation of inquiry-based teaching strategies in the professional development of university professors through an active engagement program. Through the professors' involvement in the program, they gain experience with inquiry-based instruction that can be put into effect in their own classrooms to possibly create a shift in understanding and success rates at physics undergraduate courses. This model consists of faculty peer mentoring, facilitating instruction within a community of practice, and implementation of undergraduate inquiry-based physics teaching strategies. Here, professors are facilitating the physics lessons to in-service high school teachers while using inquiry strategies and interactive activities rather than traditional lecture. This project aided the creation of an undergraduate inquiry-based physics course at the University of Houston. It could lead to a new form of professor professional development workshop that does not only benefit the professor, but also high school teachers not properly trained in the field of physics.

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