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Teaching Quantum Mechanics through Project-based Learning GINTARAS DUDA, KRISTINA WARD, Creighton University — Project/Problem-based learning (PBL) is an active area of research within the physics education research (PER) community, however, work done to date has focused on introductory courses. This talk will explore research on upper division quantum mechanics, a junior/senior level course at Creighton University, which was taught using PBL pedagogy with no in-class lectures. Course time was primarily spent on lecture tutorials and projects, which included alpha decay of Uranium, neutrino oscillations, and FTIR spectroscopy of HCl. This talk will explore: 1. student learning in light of the new pedagogy and embedded meta-cognitive self-monitoring exercises, 2. the effect of the PBL curriculum on student attitudes, motivation, and students' epistemologies, and 3. the use of explicit written reflections within a physics course to probe student understanding.

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