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Improving Students' Interest and Motivation in Introductory Physics Laboratory: A Comparative Study YEVGENIYA V. ZASTAVKER, JENNIFER A. SIMONOVICH, EMILY TOWERS, F. W. Olin College of Engineering — Project-based learning (PjBL) has shown to be an effective method to enhance student learning in many disciplines, including science and engineering fields. Due to the complex nature of PjBL, however, the effectiveness of this learning environment has been linked, to a large degree, to the specifics of its implementation. This talk will present a comparative study of two technical PjBL courses required for engineering majors at a small technical school, *Introductory Mechanics Laboratory* and *Introductory Engineering Design*. Twelve semi-structured in-depth interviews are analyzed using grounded theory approach. The results indicate that despite similarity in the course goals of these PjBL environments, students' interest and motivation varies dramatically based on the relative levels of student autonomy and scaffolding provided in each course. We propose a framework for creating appropriate PjBL environments in *Introductory Physics Laboratories* with an emphasis on improving engineering and physics students' interest and motivation in the relevant coursework and improving student retention.

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