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**What does it mean to learn physics?**

VALERIE OTERO, University of Colorado at Boulder

Learning physics involves much more than developing a “conceptual understanding” of a phenomenon. Part of learning physics involves learning how to reason with evidence, learning how to engage in mechanistic reasoning, and learning how to generate and use models. These important scientific practices are rarely explicitly addressed in physics courses. I will present physics education research that focuses on how these practices unfold for students as they attempt to develop a model of magnetism on the basis of their observations. I will also present data that suggests that students increase their interest in physics and develop positive attitudes about physics as a result of participating in the practice of model building in the physics class. I conclude by discussing how learning physics has as much to do with learning a specialized “Discourse” as it does with learning the canonical knowledge of the discipline.