

# *Supporting students in building interdisciplinary connections across physics and biology*

**Chandra Turpen**  
University of Maryland

**Thursday, October 5**  
**in JFB 102**  
**3:30pm reception, 4pm lecture**

**Abstract:**

Our research team [1] has been engaged in the iterative redesign of an Introductory Physics course for Life Science (IPLS) majors to explicitly bridge biology and physics in ways that are authentic to the disciplines. Our course invites students to examine how modeling decisions depend on canonical disciplinary aims and interests. Our focus on developing students' interdisciplinary reasoning skills requires 1) shifting course topics to focus on core ideas that span the disciplines, 2) shifting epistemological expectations, and 3) foregrounding typically tacit disciplinary assumptions. This talk will illustrate the design-based research approach that was foundational to the development of our course. I will show how our approach leads to improved curricular tasks, refined assessment objectives, new design heuristics, and key research results.

[1] with Benjamin Dreyfus, Benjamin Geller, Julia Svoboda Gouvea, Edward Redish, and Vashti Sawtelle



*Chandra Turpen is a research assistant professor in physics at the University of Maryland in the Physics Education Research (PER) Group. Turpen's work involves designing and researching contexts for learning within higher education (for both students and faculty). Her research draws from perspectives in anthropology, cultural psychology, and the learning sciences. She also serves on several national leadership bodies: the Physics Education Research Leadership Organizing Council (PERLOC), the American Association of Physics Teachers' Committee on Diversity in Physics, the National Learning Assistant Alliance, and the Access Network.*



**The Center for  
Science and Mathematics Education**

THE UNIVERSITY OF UTAH