

## **Abstract**

Student-centered active learning (AL) instruction runs counter to traditional views of learners as passive recipients, and instructors as transmitters of information (Keyser, 2000). This approach aims to engage students in the process of purposefully thinking, questioning and reflecting on specific aspects of their understanding while engaged in activities that are domain-specific. For instance, in physics, the most successful activities both motivate and scaffold learning while acknowledging the difficulties students have when faced with conflicting models of the world, a process known as conceptual change (e.g., Chi, 2005). Empirical studies show that AL approaches to physics instruction significantly benefit students' learning and results in deeper understandings of the material (e.g., Dori & Belcher, 2005).

In this talk I will discuss how my research team and I have used AL methods such as Flipped Classroom and Peer Instruction to promote this deeper learning and have engaged students in reflective practices – as individuals and with others. In particular, I will discuss a tool we have developed, myDALITE, that allowed us to bring the benefits of these approaches online, and allows students to prepare ahead of class, resulting in greater participation, success and enjoyment of their classroom learning.