



**Professor Chandra Tucker, Ph.D.**

**Title:**

**Inducible control of protein assembly and activity using light and chemicals**

**Abstract:**

While optogenetic methods are now commonly used, we seek to expand the field to allow light control of a variety of basic molecular and cellular processes. Here I will describe recent approaches using *Arabidopsis* photoreceptor cryptochrome 2 (CRY2) and other photodimerizers as optogenetic modules, to probe and control cellular function. I will also discuss the different ways we are layering optogenetic tools with other inducible triggers, such as chemicals, for multi-layered control.

**Biography:**

Chandra Tucker is a Professor of Pharmacology at the University of Colorado School of Medicine. Dr. Tucker received her PhD in Biochemistry from the University of Washington, working with Dr. James Hurley to study signal transduction in mammalian photoreception. Her postdoctoral work was carried out with Dr. Stanley Fields on yeast genetics and technology development. Research in her lab focuses on developing novel optogenetic tools for probing cellular function and protein interactions. She pioneered the use of the *Arabidopsis* photoreceptor cryptochrome as an optogenetic tool, and has focused on methods to modulate protein interactions and oligomeric state with light, allowing spatiotemporal control of intracellular biochemical processes.