Andrew Woolley

**Title:**
Light-switchable small molecules and proteins for manipulating biological systems.

**Abstract:**
I will describe recent progress in the development of chemical and biochemical photoswitches. Small molecule photoswitches can be designed and optimized for applications in biology using the methods of chemistry. For instance we have developed small molecule switches that operate with red light and can be used to switch ion channels. Biochemical switches have the advantage of being genetically encoded. I will describe efforts to engineer new photoswitchable protein scaffolds and apply these to control of proteins involved in transcription and translation processes in neurons.