1135-AA-2382 **Katja A Lamia*** (klamia@scripps.edu). *Cryptochromes link circadian clocks with metabolism and cancer.*

Circadian clocks modulate a wide variety of cellular and physiological functions including metabolism and genome protection in a time-of-day dependent manner. Mammalian circadian clocks involve a transcription and translation feedback loop in which the DNA-binding transcriptional activators CLOCK and BMAL1 drive expression of genes encoding PERIOD (PER1-3) and CRYPTOCHROME (CRY1,2) repressors, which inhibit CLOCK:BMAL1, resulting in oscillating transcription. I will discuss several pathways by which CRY1 and CRY2 mediate circadian responses to extracellular stimuli by regulating the activity of transcription factors. Among the transcription factors that are regulated by CRY1/2 are several nuclear hormone receptors, including sensors for stress hormones and dietary lipids, and c-MYC, which is the most commonly amplified oncogene in human cancers. I will describe some of the molecular mechanisms by which CRY1 and CRY2 suppress the activities of diverse transcription networks and the approaches that we are using to further understand interactions between circadian clocks, metabolism, and cancer. (Received September 26, 2017)