Center for Circadian Biology Symposium
Abstract Submission Guidelines

Poster size & Display–We will provide easels, and 30”x40” poster boards. We can accommodate posters up to 3’x5’.

Deadline: January 20th

All poster abstracts should be submitted as .doc or .pdf file type, and sent electronically to ccb.symposium@gmail.com.

You may submit your poster abstract now, however, in order to participate in the poster session, you must also register for the symposium http://www.regonline.com/ccb by the poster cutoff date of January 20th.

Poster Abstract Guidelines:

- Abstract Title: Arial, Bold, 12 pt., centered. Maximum of 150 characters, including spaces.
- Abstract Authors: Arial, 12 pt., centered. Include, all authors’ full name and affiliation. Use superscript to indicate multiple or varying affiliations.
- Authors Address(es): Arial, 11 pt., justified.
- Abstract body (Text only): Arial, 12 pt., justified. Maximum of 500 words.
- Include the source of research below the abstract.

PROPERLY FORMATTED ABSTRACT SAMPLE:

Molecular inheritance of the cyanobacterial circadian clock

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The timing of cell division is coordinated with other cyclic events, of other periodicities, in the lives of cells. From bacteria, to algae, to regenerating liver cells of mammals, the circadian biological clock controls the time of day during which cell division can occur[1, 2]. The mechanism and function of this time restriction, or gating, of cell division is poorly understood in any system. The circadian control of cell division in cyanobacteria provides an opportunity to assess both how and why these processes are interlocked. The model organism *Synechococcus elongatus* is a unicellular cyanobacterium for which genetic manipulation is simple, circadian rhythms of gene expression are readily measured, and extensive genetic tools are available. In *S. elongatus* the number of genomes per cell in culture as well as the superhelical status and compaction of the chromosomes, oscillate with circadian periodicity[1, 3-5]. Furthermore, the topological status of the chromosome is highly correlated with a distinct state in gene expression, and has been proposed to be a key factor in imparting circadian gene expression patterns[3]. Although *S. elongatus* can divide once or more during a single circadian cycle, the fidelity of the clock is remarkably stable and inherited with perfect phase from mother to daughter cell[6]. This project aims to resolve the subcellular localization of chromosomes and fluorescently tagged oscillator proteins during the cell and circadian cycles. How clock proteins and chromosomes are inherited and related to the gating of cell division will be investigated. Together, these data will enlighten our understanding of the relationship between the cell and circadian cycles within the three-dimensional architecture of intact cells.

1. Mori T, Binder B, Johnson CH. Circadian gating of cell division in cyanobacteria growing with average doubling times of less than 24 hours. Proc Natl Acad Sci U S A 1996; 93:10183-8.
2. Matsuo T, Yamaguchi S, Mitsui S, Emi A, Shimoda F, Okamura H. Control mechanism of the circadian clock for timing of cell division *in vivo*. Science 2003; 302:255-9.
3. Vijayan V, Zuzow R, O'Shea EK. Oscillations in supercoiling drive circadian gene expression in cyanobacteria. Proc Natl Acad Sci U S A 2009.
4. Smith RM, Williams SB. Circadian rhythms in gene transcription imparted by chromosome compaction in the cyanobacterium Synechococcus elongatus. Proc Natl Acad Sci U S A 2006; 103:8564-9.
5. Woelfle MA, Xu Y, Qin X, Johnson CH. Circadian rhythms of superhelical status of DNA in cyanobacteria. Proc Natl Acad Sci U S A 2007; 104:18819-24.
6. Mihalcescu I, Hsing W, Leibler S. Resilient circadian oscillator revealed in individual cyanobacteria. Nature 2004; 430:81-5.