



BIOINFORMATICS 2015 SPRING SEMINAR SERIES

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MONDAY, September 14, 2015
3:30pm
DBI Room 102

Chromosome Structure and Gene Regulation in *C. elegans*

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ABSTRACT: Having a complete set of chromosomes is essential for development and fitness of organisms. X chromosome exists in different copy numbers in males (XY) and females (XX), presenting a significant biological challenge. In many animals, this challenge is met by protein complexes that equalize X-chromosomal transcript levels between males and females. These complexes are called the “dosage compensation complexes”, and are targeted specifically to the X chromosome and alter chromatin structure to regulate transcription. In *C. elegans*, the core of the dosage compensation complex is a condensin complex that reduces transcription from both X chromosomes in XX hermaphrodites. Condensins are evolutionarily conserved protein complexes that are essential for chromosome condensation and segregation during cell division, and are important for chromatin compaction and gene regulation during interphase. Our current research focuses on the molecular mechanisms by which *C. elegans* condensins are targeted to their chromosomal binding sites, and regulate chromatin structure and transcription. To do this, we combine genetic tools with genomic approaches such as ChIP-seq and RNA-seq. For more, go to: <https://sites.google.com/site/ercanlab/research>