The Department of Biology at California State University, Fresno, in coordination with the Research Infrastructure for Minority Institutions (RIMI) Program, presents…

Genomic views of transcriptional and post-transcriptional gene regulation

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Diversity in gene expression between different cellular states is often generated at the level of RNA, and is regulated by transcription factors, chromatin structure, and post-transcriptional regulation by miRNAs. Diversity in gene regulation between individuals is also driven in part by genetic variants, which may be termed allele-specific regulation. This talk will give an overview of our studies on genome-wide regulation in three domains. First, we examine the role of chromatin remodelers and a histone variant using yeast as a model system. I then describe a gene regulatory network involving transcription factors and miRNAs that mediates human cell proliferation responses. Finally I describe how we can identify allele-specific transcription factor binding and quantitative trait loci (QTLs) that underlie variation in transcription factor binding and chromatin structure in humans.

Monday, May 5, 2014
University Business Center 191, 3:00 - 4:00 PM