Faculty Name: Eva Nogales

Email: enogales@lbl.gov

Phone Number: (510) 666-3334

Department/Organization Affiliation: MCB

Preferred Method of Contact: email

Project Name(s): Structural Characterization of Eukaryotic Transcription Initiation Complexes

General Topic (Keywords): structural biology, cryo-EM, transcription, transcription preinitiation complex

Project Description(s): Transcription initiation is a critical control point for gene regulation in the cell. During transcription initiation in eukaryotes, a complex array of transcription factor proteins must coordinate to load RNA polymerase II onto the promoter region of the gene and prime the polymerase for accurate initiation of mRNA synthesis at the transcription start site. In this project, we will employ state-of-the-art techniques and instrumentation in single particle electron microscopy to characterize the three-dimensional structures and dynamics of these transcriptional assemblies and investigate the molecular details of their various functions in transcription initiation. This project will give the student the opportunity to explore a uniquely diverse set of disciplines that span the fields of science and technology, including structural biology, biochemistry, physics, imaging science, statistics, and computational science.

Desired Skills or Experience: No prior experience is required. The position is geared towards students with a good grasp of biophysical principles. Some familiarity with scientific computing might be helpful, but is NOT necessary.

Time Commitment: 20-40 hours/week, depending largely on the student’s expectations of final output by the end of the summer

Preferred Starting Date: June 1, 2016