Group seminar

Wednesday 18/3 at 11:15 in Schreiber 309

The speaker: Dr. Tommy Kaplan, Senior Lecturer, School of Computer Science and Engineering, The Hebrew University

Title: Chromatin dynamics during the Drosophila maternal-to-zygotic transition

Abstract:
During the first hours after fertilization, animal development depends on maternally deposited proteins and mRNA. Only then, following the maternal-to-zygotic transition (MZT), the embryonic genome becomes transcriptionally active. During this period, the genome transitions from a mostly unstructured state into differentiated chromatin domains of active, regulatory and suppressed regions.
In my talk, I will describe our work in this field, including the analysis and integration of ChIP-seq data for histone modifications and the pioneer-like factor Zelda during several time points along this crucial period in the Drosophila development.
Our data portray the interplay between sequence, chromatin and transcription, and suggest that transcriptional enhancers are largely established by an ordered (sequence-dependent) recruitment of proteins and chromatin modifiers.
Finally, I will describe our attempts to study the establishment of chromatin in embryos lacking Zelda, and our complementary computational attempts to test and identify a "second Zelda", acting as a backup.
Overall, we emphasize the role of pioneer factors in priming specific genes and developmental enhancers for activation.