Seminar

Monday, June 30, 2014
10.30 am

Dr. Mikhail Spivakov
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Cambridge, GB

“DNA regulatory regions: the logic, variability and rules of association”

Host: Dr. Petra Catalina Schwalie

Conference Room: SV 1717a
EPFL - Lausanne

Abstract

DNA regulatory regions, such as promoters and enhancers, are the key nodes of transcriptional control in time and space. Previous work by ourselves and others on the organisation and variability of regulatory regions has suggested significant flexibility and robustness in their design. The fact that genes are often controlled by multiple regulatory regions adds another degree of freedom to gene regulation. We are currently investigating the "rules of association" between DNA regulatory regions in the context of enhancer-promoter interactions, as well as during V(D)J recombination, a process that also involves the formation of DNA looping contacts. Our work in progress on these topics, along with previous research, paints a picture of the generally probabilistic nature of cis-regulatory organisation, with multiple stochastic events combining into deterministic outcomes.