

Transcriptional Control During Hematopoietic Development Transcription factor binding and chromatin conformation dynamics

1. Intra-aortic hematopoietic clusters (IAHCs) consist of premature hematopoietic stem cells (pre-HSCs) which can mature into true HSCs by the combinatorial actions of a variety of transcription factors. (*This Thesis & Taoudi S et al. Cell Stem Cell. 2008;3:99–108*)
2. Unraveling the fine-scale three-dimensional structure of the genome and its impact on gene regulation is a major goal of current epigenetic research, with direct implications for understanding the molecular mechanisms underlying human phenotypic variation and disease susceptibility. (*This thesis*)
3. Even though genome-wide chromatin conformation analysis approaches appear to be the future in epigenetic research, site-specific approaches like multiplexed 3C-sequencing remain valuable, and are currently still indispensable, for unraveling the fine-scale chromatin structural conformation without the need for substantial computational resources and the high sequencing costs. (*This Thesis*)
4. With the majority of disease-associated genomic alterations located in the non-coding 'regulatory genome', novel enhancer targeting strategies, e.g. transcription factor tethering or genome editing, could become widely applicable therapeutic strategies for molecular diseases. (*This thesis*)
5. The erythroid stage-specific enhancer of *Bcl11a* and its conserved enhancer in humans are interesting targets for γ -globin reactivation in therapeutic strategies for β -hemoglobinopathies like sickle cell disease and β -thalassemia. (*This thesis & Bauer D E et al. Science 2013;342:253–257*)
6. The statement that "recent findings in metazoan systems have revealed that much of the transcription regulation occurs well after the recruitment of Pol II and the transcription machinery to a gene promoter, through controlling pausing and the efficiency of early elongation. Thus, we are in the midst of a paradigm shift in our understanding of gene regulation as it applies to higher eukaryotic systems. (*Adelman, K. & Lis, J.T. Nature Reviews Genetics 2012;13:720-731*)" comes a little late. (*Frank Grosveld*)
7. We think in generalities, but we live in detail. (*Alfred North Whitehead*)
8. Research is like top sport; hard work is essential, but success not guaranteed.
9. A good work-life balance turns out to be just as hard to achieve as it is essential to have.
10. The greatest mistake you can make in life is continually fearing that you'll make one. (*Elbert Hubbard*)
11. Research is what I'm doing when I don't know what I'm doing. (*Wernher von Braun, New York Times interview, 16 December 1957*)