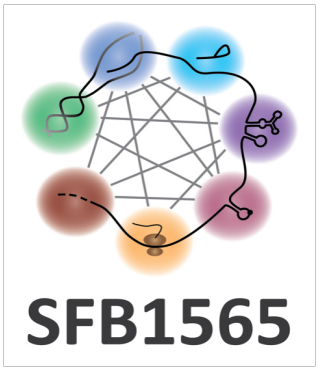
SFB1565
Seminar



Dr. Sebastian Eustermann

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More than the sum: chromatin enzymes and their role in supramolecular genome regulation

The post-genomic era has transformed our view on what Tom Misteli aptly termed the 'self-organizing genome': the active interplay between nuclear factors and chromatin that governs genome regulation and maintenance, e.g., during development, disease or upon environmental impact. Key insights have emerged at multiple spatial and temporal scales. However, the supra-molecular meso-scale of chromatin remains largely unexplored at precise structural and mechanistic level. This scale includes regulatory principles of an individual gene, where an active interplay of enzymatic processes together with tens to hundreds of factors and nucleosomes is proposed to drive (epi)genetic information processing. In recent years our research revealed core mechanisms by which enzymatic processes shape the evolutionarily conserved hallmark features of chromatin at gene promoters. We developed an integrated approach leveraging advances in cryogenic electron microscopy and structural biophysics together with synthetic-biology reconstitution approaches. In my talk I will discuss our current understanding ATP-dependent chromatin remodeling and reader-writer mechanisms of histone modifiers.

13 June 2025, Friday, 11:00 am
Ludwig Prandtl Hall, MPI-NAT, Faßberg Campus, Göttingen

Hosted by Dr. Marieke Oudelaar