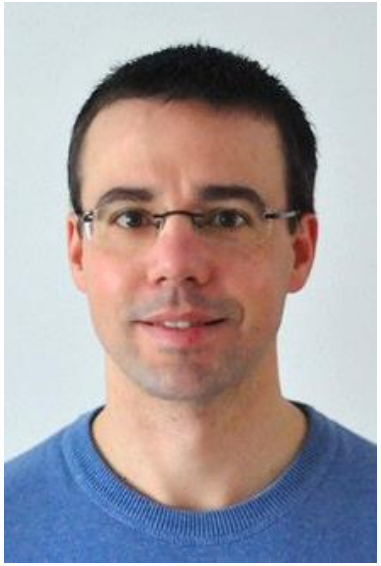
Seminar Series SFB 1551 & SFB 1361

Dynamics and Functions of DNA Repair Compartments



Prof. Dr. Matthias Altmeyer

University of Zurich

Department of Molecular Mechanisms of Disease

Friday, 16 June 2023
10:00-11:00am (*s.t.*)

Guests are Welcome!

Venue:
Seminar room (2nd floor),
Institute of Molecular Biology (IMB)
Ackermannweg 4, 55128 Mainz

Seminar will be streamed online for participants who cannot attend onsite.

For further information:

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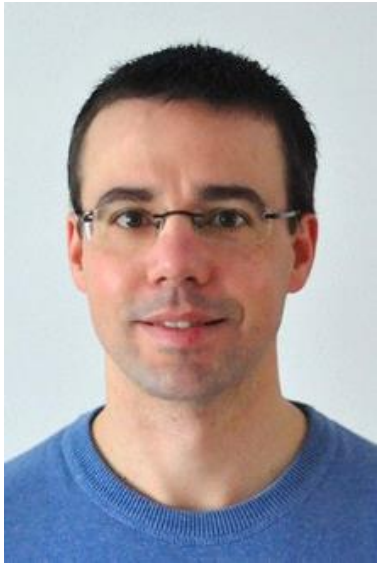

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Dynamics and Functions of DNA Repair Compartments

Genome stability is constantly challenged by reactive byproducts of cellular metabolism and environmental toxins. Dedicated repair pathways have evolved to deal with DNA damage, and their malfunctioning is associated with human diseases such as cancer and neurodegeneration. Elucidation of the hierarchy and temporal order in which DNA damage-sensing proteins as well as signaling and repair factors assemble around DNA lesions has painted a complex picture of tightly regulated macromolecular interactions that build specialized nuclear compartments to facilitate repair and maintain genome integrity. While many of the underlying interactions, e.g. between repair factors and damage-induced histone modifications, can be explained by lock-and-key or induced fit binding models assuming fixed stoichiometries, structurally less well defined interactions, such as the highly dynamic multivalent interactions implicated in biomolecular condensate formation by phase separation, also participate in the formation of multi-protein assemblies at sites of DNA damage. In this seminar, a summary and an update will be provided on efforts to characterize and better understand the dynamics and functions of cellular DNA repair compartments and how they coordinate maintenance of genome integrity in space and time.

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