Seminar/Talk

Genome organization in mitochondria, bacteria, and viruses

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Host: Florian Schur

All living beings must package and compact their DNA to protect genetic material and regulate genome access. In my thesis work, I investigate genome organization in mitochondria, bacteria, and viruses. Mitochondria utilize the HMG-box protein TFAM to fulfill this vital role, whereas bacteria and viruses employ histone proteins that adopt different binding modes. The central focus of this talk is TFAM-mediated DNA compaction. Using a wide array of biochemical methods and structural biology approaches, I show that TFAM compacts DNA into homogenous higher-order complexes that exhibit continuous conformational dynamics. The talk also presents cryo EM data revealing distinct strategies utilized by bacterial histones from Bdellovibrio bacteriovorus and Leptospira interrogans to compact DNA and highlights unique structural features of the Medusavirus medusae nucleosome. Together, this work reveals diverse mechanisms of genome compaction across organelles and domains of life.

Tuesday, May 12, 2026 02:00pm - 03:00pm
Mondi Seminar Room 2, Central Building

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