GENOME INTEGRITY and CONTROL

GIC seminar

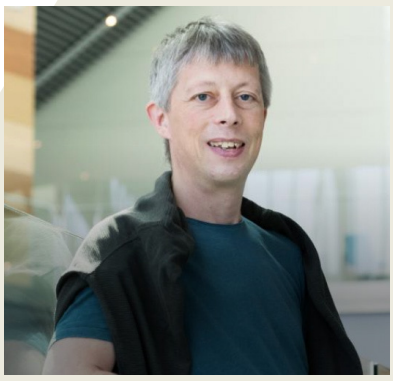
Genome Modality

Dr. Frank Uhlmann

Chromosome Segregation Laboratory
The Francis Crick Institute

Why do chromosomes look like chromosomes (not like a ball of yarn)?

Mitotic chromosomes in different organisms adopt various dimensions, the determinants for which are poorly understood. We start by comparing fission yeast and budding yeast, which harbor similarly sized genomes distributed amongst 3 or 16 chromosomes, respectively. Superresolution and genomic approaches reveal a species-specific chromosome width determinant, which we find correlates with the spacing intervals between binding sites of the chromosomal condensin complex. Unexpectedly, within each species, longer chromosome arms are always thicker, a universal relationship that also applies to human chromosomes. We use this information to explore molecular models for how condensin gives mitotic chromosomes their shape.



理学セミナーハウス
Science Seminar House
(Build. No. 10 on North Campus map)

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