

“Chromosome Territories & Nuclear Architecture”

– A Tribute to Christoph Cremer

Wednesday, 30 October

12:00 Registration

Welcome Address

13:00 - 13:15 Christof Niehrs
Institute of Molecular
Biology, Mainz, DE

Keynote Lecture

Chair: Vassilis Roukos

13:15 - 14:00 **Tom Misteli**
National Cancer Institute,
NIH, Bethesda, USA *The heterogeneous nature of genomes*

Session 1: Imaging of Chromatin Interactions and Structure

Chair: Vassilis Roukos

14:00 - 14:30 Ting Wu
Harvard Medical School,
Boston, USA *Looking at chromosomes this way and that*

14:30 - 15:00 Wendy Bickmore
University of Edinburgh, UK *Throwing light on developmental gene regulation*

15:00 - 15:15 Marieke Oudelaar
University of Oxford, UK *Dissection of the 4D chromatin structure of the mouse alpha-globin locus during in vivo erythropoiesis*

15:15 - 15:45 Clodagh O’Shea
Salk Institute, La Jolla, USA *Cracking nuclear codes: Finding order in chaos*

15:45 - 16:15 *Coffee Break*

16:15 - 16:45 Kerstin Bystricky
University of Toulouse, FR *Chromatin dynamics during transcription activation*

16:45 - 17:15 Alistair Boettiger
Stanford University, USA *Tracing 3D DNA paths and visualising transcription during embryogenesis*

17:15 - 17:30 Haitham Shaban
Harvard University, USA *Coupling chromatin structure and dynamics by live super-resolution imaging*

17:30 - 18:15 *Public lecture by Prof. Christoph Cremer*

18:15 - 20:15 *Welcome Reception & Poster Session*

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Thursday, 31 Oct

Session 2: Physics of Genome Organisation

Chair: Wendy Bickmore

09:00 - 09:30	Rainer Heintzmann	University of Jena, DE	<i>Christoph Cremer laudation</i>
09:30 - 10:00	Thomas Cremer	Ludwig Maximilian University, Munich, DE	<i>Nuclear organisation and function – a cytogeneticist’s perspective of chromosome territories, TADs, chromatin domains and the interchromatin compartment</i>
10:00 - 10:30	Mario Nicodemi	University of Naples Federico II, IT	<i>Polymer physics of large-scale chromatin folding</i>
10:30 - 10:45	Boyan Bonev	Helmholtz Center, Munich, DE	<i>MeCP2 represses transcriptional initiation by exploiting 3D nuclear architecture</i>
10:45 - 11:15	<i>Coffee Break</i>		
11:15 - 11:45	Leonid Mirny	Massachusetts Institute of Technology, Cambridge, USA	<i>Two distinct mechanisms of chromatin folding: loop extrusion and phase separation</i>
11:45 - 12:15	Nicola Neretti	Brown University, Providence, USA	<i>Epigenomic instability in cellular senescence and ageing</i>
12:15 - 12:30	Marc Marti-Renom	Centre for Genomic Regulation, Barcelona, ES	<i>Dynamic simulations of transcriptional control during cell reprogramming reveal spatial chromatin caging</i>
12:30 - 12:45	Chris Brackley	University of Edinburgh, UK	<i>A heteromorphic polymer model for cis-regulatory interactions in gene loci</i>
12:45 - 13:00	Eduardo Gade Gusmao	Georg August University Medical Centre, Göttingen, DE	<i>Bloom: A computational framework to reveal occult patterns on chromatin conformation experiments</i>
13:00 - 13:15	Ann Mukhortava	LUMICKS, Amsterdam, NL	<i>Dynamic single-molecule analysis platform to elucidate chromatin structure-to-function relationship</i>
13:15 - 20:30	<i>Lunch & Excursion</i>		

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Friday, 1 November

Keynote Lecture

Chair: Ana Pombo

09:00 - 09:45	Job Dekker	University of Massachusetts Medical School, Worcester, USA	<i>Mechanisms of chromosomal compartmentalisation</i>
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Session 3: Dynamics of Genome Organisation

Chair: Ana Pombo

09:45 - 10:15	Amos Tanay	Weizmann Institute, Rehovot, IL	<i>Single cell analysis of epigenetic mechanisms for embryonic lineage specification</i>
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10:15 - 10:45	Jan-Michael Peters	Institute of Molecular Pathology, Vienna, AT	<i>How cohesin folds the genome</i>
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10:45 - 11:00	Moritz Bauer	Centre for Genomic Regulation, Barcelona, ES	<i>Rapid reactivation of the inactive X in iPSC involves a unique intermediate chromosome structure</i>
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11:00 - 11:30 *Coffee Break*

11:30 - 12:00	Rafael Casellas	National Institute of Arthritis and Musculoskeletal and Skin Diseases, Bethesda, USA	<i>Mediator's role in transcription and nuclear architecture</i>
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12:00 - 12:30	Peter Fraser	Florida State University, Tallahassee USA	<i>Chromosome dynamics in pre-implantation embryo development</i>
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12:30 - 13:00	Karsten Rippe	German Cancer Research Center, Heidelberg, DE	<i>Formation of chromatin subcompartments by phase separation</i>
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13:00 - 13:15	Argyris Papantonis	University of Göttingen, DE	<i>Spatial clustering of CTCF as a hallmark of cellular ageing</i>
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13:15 - 14:45 *Lunch & Poster Session*

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Session 4: Chromatin Organisation in Health and Disease

Chair: Argyris Papantonis

14:45 - 15:15	Bas van Steensel	Netherlands Cancer Institute, Amsterdam, NL	<i>Local rewiring of genome - nuclear lamina interactions by transcription</i>
15:15 - 15:45	Jane Skok	New York University School of Medicine, USA	<i>CTCF and its impact on gene regulation and interplay with CTCF function</i>
15:45 - 16:15	Stefan Mundlos	Max Planck Institute for Molecular Genetics, Berlin, DE	<i>The role of TADs in developmental gene regulation</i>
16:15 - 16:30	Henrike Gothe	Institute of Molecular Biology, Mainz, DE	<i>Spatial chromosome folding and active transcription drive DNA fragility and formation of oncogenic MLL translocations</i>
16:30 - 17:00	<i>Coffee Break</i>		
17:00 - 17:30	Ana Pombo	Max Delbrück Center for Molecular Medicine, Berlin, DE	<i>3D genome regulation: From local contacts to global nuclear organisation</i>
17:30 - 18:00	Nadine Vastenhouw	Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, DE	<i>Firing up the genome: The role of nuclear organisation in developmental gene expression</i>
18:00 - 18:15	Marina Lusic	German Center for Infection Research, Heidelberg, DE	<i>3D genome conformation is the major determinant of HIV-1 integrational hot-spots</i>
18:15 - 18:30	Isabel Guerreiro	Hubrecht Institute, Utrecht, NL	<i>The chromatin landscape in the preimplantation embryo at single-cell resolution</i>
18:30 - 18:45	Ronald Wong	Institute of Molecular Biology, Mainz, DE	<i>Processing of DNA polymerase-blocking lesions is spatially and temporally segregated from replication forks</i>

Closing Remarks

18:45 - 19:00 Ana Pombo