2019 IMB Conference Programme

"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 Boetigger	Stanford University, USA	*Tracing 3D DNA paths and visualising transcription during embryogenesis*
17:15 - 17:30	Haitham Shaban	University of Toulouse, FR	*Unifying chromatin structure and dynamics by super-resolution imaging*
17:30 – 18:15	***Public lecture by Prof. Christoph Cremer***		
18:15 – 19:45	*Welcome Reception & Poster Session* (18:15 – 19:15 Poster presenters to be present for evaluation)		

Mainz, Germany, 30 October to 1 November 2019

2019 IMB Conference Programme

"Chromosome Territories & Nuclear Architecture"

– A Tribute to Christoph Cremer

Thursday, 31 Oct

***Session 2:* Physics of Genome Organisation**			
Chair: Wendy Bickmore			
09:00 - 09:30	Rainer Heintzmann	University of Jena, DE	*Christoph Cremer laudation*
09:30 - 10:00	Thomas Cremer	Ludwig Maximilian University, Munich, DE	*Nuclear organisation and function – a cytogeneticist's perspective of chromosome territories, TADs, chromatin domains and the interchromatin compartment*
10:00 - 10:30	Mario Nicodemi	University of Naples Federico II, IT	*Polymer physics of large-scale chromatin folding*
10:30 - 10:45	Bonev Boyan	Helmholtz Center, Munich, DE	*MeCP2 represses transcriptional initiation by exploiting 3D nuclear architecture*
10:45 - 11:15	*Coffee Break*		
11:15 - 11:45	Leonid Mirny	Massachusetts Institute of Technology, Cambridge, USA	*Two distinct mechanisms of chromatin folding: loop extrusion and phase separation*
11:45 - 12:15	Nicola Neretti	Brown University, Providence, USA	*Epigenomic instability in cellular senescence and ageing*
12:15 - 12:30	Marc Marti-Renom	Centre for Genomic Regulation, Barcelona, ES	*Dynamic simulations of transcriptional control during cell reprogramming reveal spatial chromatin caging*
12:30 - 12:45	Chris Brackley	University of Edinburgh, UK	*A heteromorphic polymer model for cis-regulatory interactions in gene loci*
12:45 - 13:00	Eduardo Gade Gusmao	Georg August University Medical Centre, Göttingen, DE	*Bloom: A computational framework to reveal occult patterns on chromatin conformation experiments*
13:00 - 13:15	Ann Mukhortava	LUMICKS, Amsterdam, NL	*Dynamic single-molecule analysis platform to elucidate chromatin structure-to-function relationship*
13:15 - 20:00	*Lunch & Excursion*		

2019 IMB Conference Programme

"Chromosome Territories & Nuclear Architecture"

– A Tribute to Christoph Cremer

Friday, 1 November

Keynote Lecture			
Chair: Ana Pombo			
09:00 - 09:45	**Job Dekker**	University of Massachusetts Medical School, Worcester, USA	*Mechanisms of chromosomal compartmentalisation*
Session 3: Dynamics of Genome Organisation			
Chair: Ana Pombo			
09:45 - 10:15	Amos Tanay	Weizmann Institute, Rehovot, IL	*Single cell analysis of epigenetic mechanisms for embryonic lineage specification*
10:15 - 10:45	Jan-Michael Peters	Institute of Molecular Pathology, Vienna, AT	*How cohesin folds the genome*
10:45 - 11:00	Moritz Bauer	Centre for Genomic Regulation, Barcelona, ES	*Rapid reactivation of the inactive X in iPSC involves a unique intermediate chromosome structure*
11:00 - 11:30	*Coffee Break*		
11:30 - 12:00	Rafael Casellas	National Institute of Arthritis and Musculoskeletal and Skin Diseases, Bethesda, USA	*Mediator's role in transcription and nuclear architecture*
12:00 - 12:30	Peter Fraser	Florida State University, Tallahassee USA	*Chromosome dynamics in pre-implantation embryo development*
12:30 - 13:00	Karsten Rippe	German Cancer Research Center, Heidelberg, DE	*Formation of chromatin subcompartments by phase separation*
13:00 - 13:15	Argyris Papantonis	University of Göttingen, DE	*Spatial clustering of CTCF as a hallmark of cellular ageing*
13:15 - 14:45	*Lunch & Poster Session*		

2019 IMB Conference Programme

"Chromosome Territories & Nuclear Architecture"

– A Tribute to Christoph Cremer

***Session 4:* Chromatin Organisation in Health and Disease**			
Chair: Argyris Papantonis			
14:45 - 15:15	Bas van Steensel	Netherlands Cancer Institute, Amsterdam, NL	*Local rewiring of genome - nuclear lamina interactions by transcription*
15:15 - 15:45	Jane Skok	New York University School of Medicine, USA	*CTCFL and its impact on gene regulation and interplay with CTCF function*
15:45 - 16:15	Stefan Mundlos	Max Planck Institute for Molecular Genetics, Berlin, DE	*The role of TADs in developmental gene regulation*
16:15 - 16:30	Henrike Gothe	Institute of Molecular Biology, Mainz, DE	*Spatial chromosome folding and active transcription drive DNA fragility and formation of oncogenic MLL translocations*
16:30 - 17:00	*Coffee Break*		
17:00 - 17:30	Ana Pombo	Max Delbrück Center for Molecular Medicine, Berlin, DE	*3D genome regulation: From local contacts to global nuclear organisation*
17:30 - 18:00	Nadine Vastenhouw	Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, DE	*Firing up the genome: The role of nuclear organisation in developmental gene expression*
18:00 - 18:30	Marina Lusic	German Center for Infection Research, Heidelberg, DE	*3D genome conformation is the major determinant of HIV-1 integrational hot-spots*
18:30 - 18:45	Isabel Guerreiro	Hubrecht Institute, Utrecht, NL	*The chromatin landscape in the preimplantation embryo at single-cell resolution*
18:45 - 19:00	Ronald Wong	Institute of Molecular Biology, Mainz, DE	*Processing of DNA polymerase-blocking lesions is spatially and temporally segregated from replication forks*
Closing Remarks			
19:00 - 19:15	Ana Pombo		

Mainz, Germany, 30 October to 1 November 2019