4DGenomics2023
Investigating, modelling and understanding the genome in space and time

May 9-11, 2023

IFOM Conference Room (Bldg. 9), Milan - Italy

Program

Tuesday, May 9 2023	
8:30-9:20	***Registration***
9:20-9:30	***Welcome introduction by the organizers***
9:30-10:00	**Nick Gilbert,** *MRC Human Genetics Unit at the University of Edinburgh, UK* **Chromosome structure regulated by a transcription**
10:00-10:20	*Léa Costes, Centre de Biologie Intégrative, Toulouse, France* **Physical principles underlying chromatin dynamic changes in response to transcription activation**
10:20-10:40	*Ramveer Choudhary, IFOM ETS - The AIRC Institute of Molecular Oncology* **Genomic elements mediating inter and intra chromosomal interactions**
10:40-11:00	*Francesca Rossi, Max Planck Institute for Molecular Genetics* **Connecting the Dots: PHF13 and cohesin promote higher chromatin order**
11:00-11:40	***Coffee Break***
11:40-12:10	**Barbora Kozlikova,** *Faculty of Informatics, Masaryk University, Brno, Czech Republic* **Chromoskein: 3D representation of chromatin structure.**
12:10-12:30	*Davide Mazza, San Raffaele Scientific Institute, Milan* **Impact of chromatin organization on the search mechanism of nuclear factors; a single molecule study.**
12:30-12:50	*Irene Farabella, Istituto Italiano di Tecnologia* **Investigating genome plasticity at the nanoscale.**
12:50-13:15	*Alessandro Bertero, University of Torino | Dafne Campigli Di Giammartino, Istituto Italiano di Tecnologia, Genova |* *Mattia Conte, Physics Dept. Università di Napoli | Takashi Nishio, Technical University of Dresden | Alex Chen Yi Zhang | SISSA, Trieste*
13:30-14:30	***Lunch break***
14:30-16:00	Poster session
16:00-16:30	***Coffee Break***
16:30-17:00	**Jan Huertas,** *Rosana Collepardo Lab, Department of Chemistry, University of Cambridge, UK* **Multiscale Simulations of Chromatin**
17:00-17:20	*Hulkar Mamayusupova, University of Essex* **Nucleosome repositioning in cancer and cell differentiation**
17:20-17:40	*Michele Di Pierro, Dep. of Physics, Northeastern University, Boston, MA* **Landscapes of Genomic Architecture Across Evolution**
17:40-18:00	*Flavia Corsi, IMBA - Institute of Molecular Biotechnology* **Sister chromatid cohesion in human replicated chromosomes is asymmetric**
18:00-18:30	**Elisa Oricchio,** *Swiss Institute of Experimental Cancer Research and EPFL, Lausanne, Switzerland* **Modulation of 3D chromatin structures to support tumor evolution**
19:00	***Social aperitivo/light dinner***

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Wednesday, May 10	
9:30-10:00	**Mario Nicodemi,** *Physics Dept. Università "Federico II" and INFN, Napoli, Italy; MDC, Berlin, Germany* **Loop-extrusion & phase separation in chromatin folding**
10:00-10:20	*Federica Lucini, IFOM ETS - The AIRC Institute of Molecular Oncology* **Biochemical properties of chromatin read by 4f-SAMMY-seq: mapping of euchromatin, heterochromatin and their 3D compartmentalization**
10:20-10:40	*Juan Pablo Arcon, IRB Barcelona* **Cell-to-cell structural variability on chromatin models**
10:40-11:00	*Sophie Klempahn, Cluster of Excellence Physics of Life, Technical University of Dresden* **Changes in the nucleosome positioning by chromatin remodelers**
11:00-11:40	***Coffee Break***
11:40-12:10	**Giovanni Ciriello,** *University of Lausanne, Switzerland* **Chromatin plasticity across cell types and haplotypes**
12:10-12:30	*David Brückner, Institute of Science and Technology Austria* **Stochastic motion and transcriptional dynamics of pairs of distal DNA loci on a compacted chromosome**
12:30-12:50	*Jonas Paulsen, University of Oslo* **Modeling loop extrusion dynamics genome wide**
12:50-13:10	*Vera Pancaldi, INSERM U1037 Centre de Recherche en Cancèrologie de Toulouse* **Exploring the relation between evolutionary gene age, gene expression variability and chromatin 3D structure in cancer**
13:10-13:30	*Pavel Kos, FMI for biomedical research* **Cohesin and CTCF orchestrate chromosome dynamics**
13:30-14:30	***Lunch break***
14:30-16:30	***Free time***
16:30-17:00	***Coffee Break***
17:00-17:30	**Mikhail Spivakov,** *MRC London Institute of Medical Sciences, London, UK* **Probing the relationship between enhancer activity, connectivity and gene expression**
17:30-17:50	*Amith Zafal Abdulla, ENS de Lyon* **"Living Painter": Modeling the dynamic coupling between epigenome regulation and 3D chromatin organization**
17:50-19:30	Poster Session
19:30	***Social aperitivo (location TBC)***

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Thursday, May 11	
9:30-10:00	**Antoine Coulon,** *Institut Curie and CNRS, Paris, France* **Understanding interphase chromosomes as physical objects**
10:00-10:20	*David Lleres, CNRS/University of Montpellier/ IGMM* **Evidence for Low Nanocompaction of Heterochromatin in Living Embryonic Stem Cells**
10:20-10:40	*Vittore Scolari, Institut Curie* **Forces driving chromatin in the nucleus**
10:40-11:00	*Samuel Zambrano, School of Medicine, Vita-Salute San Raffaele University* **Role of genome spatial organization in transcription factor induced gene expression: insights from the NFkB system**
11:00-11:40	***Coffee Break***
11:40-12:10	**Vasily Zaburdaev,** *Friedrich-Alexander Universität Erlangen-Nürnberg and Max-Planck-Zentrum für Physik und Medizin, Erlangen, Germany* **Microphase separation and surface condensation as biophysical mechanisms of transcriptional organisation**
12:10-12:30	*Peter Meister, University of Bern* **Formation of fountains by cohesin in nematodes: micro-TADs for the limitation of enhancer search space?**
12:30-12:50	*Cristina Fracassi, Vita-Salute San Raffaele University* **PML instructs chromatin composition towards expression of pro-metastatic genes in triple-negative breast cancer**
12:50-13:20	**Magda Bienko,** *Human Technopole, Milan, Italy and Karolinska Institutet, Stockholm, Sweden* **FRET-FISH allows us to measure local DNA compaction at specific DNA loci**
13:20-13:30	***Concluding remarks***
13:30	***Lunch and departure***

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