

BIOIMAGING ACROSS SCALES

Monday, 28th September

Alte Mensa, Wilhelmsplatz 3

10:00 am **Welcome**

Line of Research 2: Multiscale Approaches to Heart and Brain

10:15 am *Rubén Fernandez-Busnádiego (UMG)*

"Bridging the scales by cryo-ET"

10:40 am *Kate McDole (MRC, Cambridge)*

"Watching life unfold, one cell at a time: from germ cell migration to ventral folding in the post-implantation mouse embryo"

11:05 am *Emilie Macé (UMG)*

"Imaging Brain-Wide Networks with Functional Ultrasound"

11:30 am *Roman Tsukanov (UGOE)*

"A modular Flamingo microscope for multiplexed nanoscopy"

12:00 pm **Lunch Break**

Line of Research 1: Gene Expression and Regulation

Research Alliance 1.1: Mitochondrial Gene Expression

01:00 pm *Bernhard Kuhle (UMG)*

"Molecular mechanism and disease-association of human tRNA 3'CCA addition"

01:25 pm *Michal Minczuk (MRC, Cambridge)*

"Engineering the Mitochondrial Genome Across Scales"

01:50 pm *Marianne Gaubert (UMG)*

"Mechanisms of TOP3A-associated mtDNA instability causing mitochondrial dysfunction in cardiomyopathy"

02:15 pm **Coffee Break and Networking**

Line of Research 1: Gene Expression and Regulation

Research Alliance 1.2: Epigenetic Regulation of Gene Transcription

02:45 pm *Nina Hempel (DZNE)*

"Methylation of coding and non-coding RNAs in neurodegenerative diseases"

03:10 pm *Annalisa Marsico (Helmholtz Munich)*

"Teaching AI the Language of RNA: Foundation Models for Regulation and Therapeutic Design"

03:35 pm *Marina Rodnina (MPI NAT)*

"Titel tba"

POSTER SESSION

04:00 pm **Poster Flash Talks**

05:00 pm **Poster Session**

06:00 pm **Dinner**

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Tuesday, 29th September

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Keynote

09:00 am

Axel Brunger (Stanford Medicine)

"Towards Molecular Imaging of Synapses by Cryo-Electron Tomography"

Line of Research 1: Gene Expression and Regulation

Research Alliance 1.3: Proteostasis

10:00 am

Eri Sakata (UMG)

"Structural dynamics and dysregulation of AAA+ ATPase motors in protein homeostasis"

10:25 am

Irina Dudanova (UNI Würzburg)

"Differential vulnerability in neurodegeneration: from molecules to circuits to therapies"

10:50 am

Vrinda Sant (MPI NAT)

"Structure-based mechanistic insights on neurodegeneration and protection in aSyn aggregopathies"

11:15 am

Coffee Break and Networking

Line of Research 3: Cellular and Intercellular Signalling

Research Alliance 3.1: Assembly and Function of ion Channel Clusters

11:45 am

Leon Bösche (UMG)

"Plasticity of Cav1.3 channel heterogeneity at inner hair cell synapses"

12:10 pm

Luis Fernando Santana (Davis Health, University of California)

"Calcium as Organizer: Clustering, Trafficking, and Energetics at the Cardiac Membrane"

12:35 pm

Tina Pangrsic (UMG)

"Cav1.3 regulation by CaBPs"

01:00 pm

Lunch Break

Line of Research 3: Cellular and Intercellular Signalling

Research Alliance 3.2: Calcium triggered Membrane Fusion

02:00 pm

Constantin Cretu (UMG)

"Molecular machines in sensory pathways: from human helicases and catalytically activated spliceosomes to membrane-remodelling ferlins"

02:25 pm

Anna Bulankina (Heidelberg University Biochemistry Center)

"Ferlins constitute a novel class of membrane fusion proteins"

02:50 pm

Sören Brandenburg (UMG)

"Ferlin-mediated membrane nanodomain remodeling and repair in the heart"

03:15 pm

Coffee Break and Networking

Line of Research 3: Cellular and Intercellular Signalling

Research Alliance 3.3: Neural and Cardiac Plasticity

03:45 pm

Anne Petzold (ENI)

"From Cellular Identity to Circuit Function: Imaging Motivational Brain Networks"

04:10 pm

Eva Rog-Zielinska (University Heart Center Freiburg)

"Time resolved" electron microscopy for the study of nanoscale dynamics"

04:35 pm

Ali Shaib (UMG)

"ONE Microscopy: from amino acids to cells"

05:00 pm

Wrap Up and Outlook