

BIOIMAGING ACROSS SCALES

Monday, 28th September

Alte Mensa, Wilhelmsplatz 3

10:00 am **Welcome**

Axel Schölmerich (U GOE), Falko Mohrs (MWK), Tobias Moser (UMG)

Line of Research 2: Multiscale Approaches to Heart and Brain

10:15 am *Emilie Macé (UMG)*

"Imaging Brain-Wide Networks with Functional Ultrasound"

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 *Rubén Fernandez-Busnádiego (UMG)*

"Bridging the scales by cryo-ET"

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 Allience 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"

Line of Research 1: Gene Expression and Regulation

Research Allience 1.2: Epigenetic Regulation of Gene Transcription

02:15 pm *Nina Hempel (DZNE)*

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

02:40 pm *Annalisa Marsico (Helmholtz Munich)*

"Learning the Language of Life: Graph AI and RNA Foundation Models for biomedical discovery"

03:05 pm *Marina Rodnina (MPI NAT)*

"Translational Ambiguity as a Regulatory Principle"

03:30 pm Coffee Break and Networking

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 I

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 Allience 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 Allience 3.1: Assembly and Function of ion Channel Clusters

11:45 am Leon Bösch (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 / Taehee Kim (UMG)
"Cav1.3 regulation by Ca²⁺ binding to CaBP2"

01:00 pm Lunch Break

Line of Research 3: Cellular and Intercellular Signalling

Research Allience 3.2: Calcium triggered Membrane Fusion

02:00 pm Constantin Cretu (UMG)
"Human ferlins - from structure to mechanism"

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

Keynote II

03:45 pm Peter Jonas (Institute of Science and Technology Austria)
"Archicortex revisited"

Line of Research 3: Cellular and Intercellular Signalling

Research Allience 3.3: Neural and Cardiac Plasticity

04:40 pm Anne Petzold (ENI)
"From Cellular Identity to Circuit Function: Imaging Motivational Brain Networks"

05:05 pm Eva Rog-Zielinska (University Heart Center Freiburg)
"-Time resolved- electron microscopy for the study of nanoscale dynamics"

05:30 pm Ali Shaib (UMG)
"ONE Microscopy: from amino acids to cells"

Wrap Up and Outlook

06:00 pm Closing Address Wolfgang Brück (UMG)