

Lisbon2025



June 29 – July 3

Helicases and Nucleic Acid-Based Machines

Conference Organizers:

Markus T. Bohnsack (University Medical Center Göttingen, Germany)

Fernando Moreno-Herrero (CSIC, Madrid, Spain)

Sua Myong (Harvard Medical School, Boston, USA)

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PROGRAM AGENDA

Sunday, June 29, 2025

4:00 PM – 9:00 PM

REGISTRATION

5:30 PM – 6:00 PM

WELCOME (Organisers)

6:00 PM – 7:00 PM

Keynote: **Timothy Lohman**, Washington University, St. Louis, USA
Structural Basis for Activation of Dimeric UvrD-family Helicases

7:00 PM – 8:00 PM

WELCOME RECEPTION

Monday, June 30, 2025

8:00 AM – 1:00 PM

REGISTRATION

9:00 AM – 3:05 PM

Session 1: Helicases Associated with Genomic Instability, Cancer and Aging

Session Chair: *Fernando Moreno-Herrero*

9:00 AM – 9:25 AM

Edwin Antony, Saint Louis University, USA
An RPA Phosphocode, Kinase Feed-back Loop, and Control of Events at Ss-dsDNA Junctions

9:25 AM – 9:50 AM

Bob Brosh, National Institutes of Health, USA
Functional Roles and Pathways of Helicases that Impact Human Health and Aging

9:50 AM – 10:10 AM

Patrick Sung
DNA Break Repair Pathway Choice via Regulation of the BLM and WRN Helicases

10:10 AM – 10:30 AM

Denitsa Yaneva, LMU, Munich, Stinge Lab, Germany
The FANCD1 Helicase Converts DNA Single-strand Breaks Shielded by Trapped PARP1 into Double-strand Breaks

10:30 AM – 10:50 AM

COFFEE BREAK

10:50 AM – 11:15 AM

Mark S. Dillingham, University of Bristol, UK
Control of Bacterial DNA Break Repair by Phage-encoded DNA Mimics

11:15 AM – 11:40 AM

Maria Spies, Iowa University, USA
The RAD52 double-ring remodels replication forks restricting fork reversal by SMARCA1 helicase

11:40 AM – 12:00 PM

Silvia Hormeño, National Center of Biotechnology, CSIC, Spain
A Novel Secondary DNA-binding Site in HELB's N-terminal domain mediates RPA

12:00 PM – 12:20 PM	Nasim Sabouri , Umeå University, Sweden <i>Mechanistic Insights into Poly-(rC)-binding Protein 1 (PCBP1) Driven Unfolding of Selected i-motif DNA at G1/S Transition</i>
12:20 PM – 1:30 PM	LUNCH
	Session Chair: <i>Mark S. Dillingham</i>
1:30 PM – 1:55 PM	Brandt Eichman , Vanderbilt University, USA <i>A mechanistic basis for replication fork reversal by F-box helicase 1</i>
1:55 PM – 2:20 PM	Michael Trakselis , Baylor University, USA <i>Structural, Enzymatic, and Fork Protection Functions of an Activated Human MCM8/9 Complex</i>
2:20 PM – 2:45 PM	Elizabeth Tran , Purdue University, USA <i>Supinoxin Blocks Small Cell Lung Cancer Progression by Inhibiting Mitochondrial Respiration through DDX5</i>
2:45 PM – 3:05 PM	Linda Bloom , University of Florida, USA <i>Escherichia coli Rad3/XPD-family Helicases Push and Pull Single-stranded DNA Binding Protein on DNA</i>
3:05 PM – 3:40 PM	GROUP PHOTO / COFFEE BREAK
3:40 PM – 5:35 PM	Session 2: Ribosome Biogenesis and Translation Session Chair: <i>Dagmar Klostermeier</i>
3:40 PM – 4:05 PM	Konstantinos Tripsianes , Masaryk Univ., Czech Republic <i>RECQ4 Conformational Flexibility Modulates Distinct Functions and Coacervation with G-quadruplexes</i>
	Katrin Karbstein , Vanderbilt University, USA <i>A DEAD-box-ATPase Mediated Checkpoint Avoids RNA Mfolding</i>
4:05 PM – 4:30 PM	Denis Lafontaine , Brussels University, Belgium <i>Mapping Human Ribosome Biogenesis One Nucleotide At A Time</i>
4:30 PM – 4:55 PM	Anthony Henras , University of Toulouse, France <i>The Dual Life of Disordered Lysine-rich Domains of snoRNPs and RNA Helicases in rRNA Modification and Nucleolar Compaction</i>
5:15 PM – 5:35 PM	Valentin Mitterer , University of Graz, Austria <i>RNA Helicases in Co-transcriptional Ribosome Assembly</i>
5:35 PM – 5:50 PM	Special Session: Oxford Nanopore Technologies <i>Oxford Nanopore Technologies—More Than a Sequencer, presented by Mark Bruce, Oxford Nanopore Technologies</i>
6:15 PM – 7:15 PM	DINNER
7:15 PM – 8:30 PM	POSTER SESSION Even numbers
8:45 PM – 10:00 PM	POSTER SESSION Odd numbers

Tuesday, July 1, 2025

8:00 AM – 1:00 PM	REGISTRATION
9:00 AM – 12:20 PM	Session 3: RNA Helicases - Diverse Mechanisms and Biological Roles Session Chair: <i>Caroline Kisker</i>
9:00 AM – 9:25 AM	Dagmar Klostermeier , University of Münster, Germany <i>RNA unwinding at 75°C: Inter-domain communication in the dimeric heat-resistant RNA-dependent ATPase (Hera) from Thermus thermophilus</i>
9:25 AM – 9:50 AM	Hervé Le Hir , Ecole Normale Supérieure, France <i>Lighting and dimming the EJC illuminate mRNPs</i>
9:50 AM – 10:10 AM	Nina Lang , University of Bayreuth, Germany <i>Targeting the Autoregulation Mechanism of Human RNA Helicase DHX9 to Modulate RNA Unwinding Activity</i>
10:10 AM – 10:30 AM	Mandy Jeske , Heidelberg University, Germany <i>Stimulation of Vasa DEAD-box RNA Helicase Activity by eLOTUS Domains through an Unstructured Positively Charged Stretch</i>
10:30 AM – 10:50 AM	COFFEE BREAK
10:50 AM – 11:15 AM	Christof Niehrs , IMB, Mainz, Germany <i>Role of DDX Proteins in Protein Kinase Regulation</i>
11:15 AM – 11:40 AM	Yohei Kirino , Th. Jefferson University, Philadelphia, USA <i>An RNA Helicase Required for Releasing Immunostimulatory Short Non-coding RNAs</i>

Tuesday, July 1, 2025 (con'd)

11:40 AM – 12:00 PM	Claudia Ribeiro de Almeida , Babraham Institute, United Kingdom <i>RNA Helicase DDX1 Regulates Antibody Immune Responses by Promoting the Splicing of Intron-containing TRNAs</i>
12:00 PM - 1:10 PM	LUNCH
1:10 PM – 4:40 PM	Session 4: Helicases Engaged in Chromatin Remodeling Session Chair: <i>Brandt Eichman</i>
1:10 PM – 1:35 PM	Alessandro Costa , Francis Crick Institute, London, UK <i>Parental nucleosome disruption at the replication fork shapes histone inheritance pathway choice</i>
1:35 PM – 2:00 PM	Danzhou Yang , Purdue University, USA <i>Structural basis for nucleolin recognition of MYC promoter G-quadruplex and G4-epigenetic transcription regulation</i>
2:00 PM – 2:25 PM	Katrin Paeschke , Bonn University, Germany <i>Stress and Translation Regulation by the G4Helicase DHX36</i>
2:25 PM – 2:45 PM	Eric Galburt , Washington University School of Medicine, USA <i>Structural Basis for Dimerization and Activation of UvrD-family Helicases</i>
2:45 PM – 3:30 PM	COFFEE BREAK
3:30 PM – 3:55 PM	Haiwei Song , IMCB, Singapore <i>Structural and Functional Insights into the Unwinding Mechanism of Pif1 Helicases</i>
3:55 PM – 4:20 PM	Petr Cejka , ETH, Zürich, Switzerland <i>Mechanism of BRCA1-BARD1 function in DNA end resection</i>
4:20 PM – 4:40 PM	David Lilley , University of Dundee, UK <i>ANKLE1 Responds to DNA Tension to Provide a Final Opportunity to Break Links Between Chromosomes Prior to Cell Division</i>
4:40 PM	FREE EVENING

Wednesday, July 2, 2025

8:30 AM – 1:00 PM	REGISTRATION
9:00 AM – 2:35 PM	Session 5: RNA Processing and Gene Expression Session Chair: <i>Anthony Henras</i>
9:00 AM – 9:25 AM	Clemens Plaschka , IMP, Vienna, Austria <i>Mechanisms of Human Messenger RNA Export</i>
9:25 AM – 9:50 AM	Rick Russell , University of Texas, Austin, USA <i>Probing the mechanisms of DNA target specificity by CRISPR-Cas12a</i>
9:50 AM – 10:10 AM	Michael Huen , The University of Hong Kong, China <i>R-loop Resolution by ARIP4 Helicase Promotes Androgen-dependent Transcription Induction</i>
10:10 AM – 10:30 AM	David Dulin , VU Amsterdam, Amsterdam, Netherlands <i>The coronavirus helicase is a major regulator of viral replication</i>
10:30 AM – 10:50 AM	COFFEE BREAK
10:50 AM – 11:15 AM	Kristian Baker , Case Western Reserve University, USA <i>Interrogating the RNA and Protein Interaction Networks Mediating Nonsense-mediated mRNA Decay in Yeast</i>
11:15 AM – 11:35 AM	Cornelia Kilchert , JLU Giessen, Germany <i>Dbp2 Drives 3'-end Processing Factor Release to License mRNPs for Nuclear Export</i>
11:35 AM – 11:55 PM	Daan Overwijn , Biozentrum, University of Basel, Switzerland <i>A Novel Non-canonical DDX-MIF4G Interaction Between DDX19A/B and PAIP1 Provides a Molecular Link Between mRNA Export and Stability</i>
11:55 PM – 12:15 PM	Fabienne Becker , Justus-Liebig-University Giessen, Germany <i>The Conserved C-terminal Domain of Tho1 Stimulates the DEAD-box Helicase Sub2</i>
12:15 PM – 1:30 PM	LUNCH Session Chair: <i>Mandy Jeske</i>
1:30 PM – 1:55 PM	Ailong Ke , Yale University, New Haven, USA <i>Exploiting Activation and Inactivation Mechanisms in Type I-C CRISPR-Cas3 for Genome Editing Applications</i>

1:55 PM – 2:15 PM	Jorge Cruz-Reyes , Texas A & M University, USA <i>Dynamic REH2C Complexes at the Heart of U-inde1 RNA Editing Regulation During Development</i>
2:15 PM – 2:40 PM	Katrin Karbstein , Vanderbilt University, USA <i>A DEAD-box-ATPase Mediated Checkpoint Avoids RNA Mfolding</i>
2:40 PM – 3:30 PM	BUSINESS MEETING
3:30 PM – 4:00 PM	COFFEE BREAK
4:00 PM – 5:30 PM	Session 6: Helicases in Viral Infection Session Chair: Sua Myong
4:00 PM – 4:25 PM	Smita Patel , Rutgers University, USA <i>Non-canonical activities of the human mitochondrial DNA helicase Twinkle</i>
4:25 PM – 4:50 PM	Michaela Rumlova , University of Chemistry and Technology, Prague, Czech Republic <i>Retroviral G-patch Motif Recruits Cellular DHX15 Helicase to Facilitate Retroviral RNA Packaging</i>
4:50 PM – 5:10 PM	Francesca Fiorini , The French National Centre for Scientific Research (CNRS), France <i>The SARS-CoV-2 Nucleocapsid Protein Hijacks and Inhibits the UPF1 RNA Helicase During Viral Infection</i>
5:10 PM – 5:30 PM	Martina Schroeder , Maynooth University Ireland, Ireland <i>Regulation of mRNA Translation by the Human DEAD-box Helicase DDX3X in Virus-infected Cells.</i>
6:00 PM – 8:00 PM	CONFERENCE DINNER

Thursday, July 3, 2025

8:30 AM – 1:00 PM	REGISTRATION
9:00 AM – 10:50 AM	Session 7: Replication coupled processes Session Chair: Sua Myong
9:00 AM – 9:25 AM	Caroline Kisker , University of Würzburg, Madison, Germany <i>Getting the RED flag: XPB translocase activity is mediated by the RED motif</i>
9:25 AM – 9:50 AM	James Keck , University of Wisconsin, Madison, USA <i>Structural mechanisms of DNA replication restart</i>
9:50 AM – 10:10 AM	Rafael Fernandez-Leiro , Spanish National Cancer Research Center (CNIO), Spain <i>A Dedicated Motif Facilitates DNA Synthesis by Human Mitochondrial DNA Polymerase Gamma Holoenzyme</i>
10:10 AM – 10:30 AM	Morgan Jones , MRC Laboratory of Molecular Biology, USA <i>Setting the Pace: How a Largely Unstructured Protein Accelerates the Eukaryotic Replisome</i>
10:30 AM – 10:50 AM	COFFEE BREAK
10:50 AM – 12:15 PM	Session 8: Helicases in Cross-regulation of Processes and Phase Transition Session Chair: Markus T. Bohnsack
10:50 AM – 11:15 AM	Karsten Weis , ETH, Zürich, Switzerland <i>Title: TBA</i>
11:15 AM – 11:35 AM	Maria Hondele , Biozentrum, University of Basel, Switzerland <i>Exploring Biomolecular Condensation in Bacteria: The E. coli Ribosome Biogenesis Factor CsdA Forms Nucleoid-Associated Foci at Cold Temperatures</i>
11:35 AM – 11:55 AM	Francesca Pisani , IBBC – CNR, Italy <i>Nuclear and Cytoplasmic Functions of DDX11, The Warsaw Breakage Syndrome DNA Helicase</i>
11:55 PM – 12:15 PM	FAREWELL (Organisers)