

Cryo-EM on the Move: New Applications and Challenges

842. WE-Heraeus-Seminar

14 - 17 September 2025

at the Physikzentrum Bad Honnef, Germany

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Sunday, 14 September 2025

17:00 - 21:00 Registration

18:30 - 20:00 *BUFFET SUPPER and informal get-together*

20:00 – 20:10 Dovile Janulienė **Welcoming Note**
Arne Möller

20:10 - 21:10 Werner Kühlbrandt **CryoEM of membrane protein
complexes from and within
mitochondria**

Program

Monday, 15 September 2025

07:45 - 09:00	<i>BREAKFAST</i>	
09:00 - 10:00	Wanda Kukulski	The apoptotic factor Apaf1 inside cells during cell death - a case for cryo-CLEM
10:00 - 10:45	Jürgen Plitzko	Cryo-FIB milling for cryo-ET – Shaping the future of in situ structural biology
10:45 - 10:55	CONFERENCE PHOTO (in front of the main entrance)	
10:55 - 11:25	<i>COFFEE BREAK</i>	
11:25 - 11:45	<i>Scientific Organizers</i>	<i>Video “About the Wilhelm and Else Heraeus Foundation”</i>
11:45 - 12:30	Danielle Grotjahn	Bridging structural and cell biology through membrane surface morphometrics
12:30 - 14:00	<i>LUNCH</i>	
14:00 - 14:45	Rebecca Thompson	Full speed ahead: using innovations in cryoEM to drive biological insight
14:45 - 15:30	Florian Schur	A molecular atlas of the cell motility machinery
15:30 - 15:45	<i>COFFEE BREAK</i>	
15:45 - 16:30	Phil Stansfeld	Molecular Modelling of Microbial Movers & Makers

Program

Monday, 15 September 2025

16:30 – 18:00

Poster talks

Alexandra
Deaconescu

**Autoinhibition Is Not a Universal
Feature of Transcription-Repair
Coupling Factors**

Michael Kamel

**Conformational plasticity of P-
glycoprotein and its modulation by
verapamil.**

Mauro Maiorca

**Uncovering Hidden Functional States in
Cryo-EM Datasets with EMPROVE**

Jakob Ruickoldt

**CryoCrane - An open source GUI for
the visualisation of cryo-EM screening
data sets**

Jan Hannes Schaefer

**Dissecting the crosstalk between
transthyretin amyloids and the
extracellular matrix**

Klara Theresa
Scholtissek

**Unleashing the activity of PC flipping
ATP10A - a driver of endocytosis**

Irene Vercellino

**Cryo-EM structures of naturally
occurring dimeric photosystem II
complexes lacking the Mn_4CaO_5 cluster**

Shutian Wang

**Structural analysis of the insulin
receptor in native vesicles by cryo-ET
subtomogram averaging**

18:30 – 20:00

DINNER

20:00 - 21:00

Poster flash talks & poster session

Program

Tuesday, 16 September 2025

07:45 - 09:00	<i>BREAKFAST</i>	
09:00 - 10:00	Henning Stahlberg	Investigating Neurodegeneration in alpha-Synucleinopathies with Cryo-Electron Microscopy
10:00 - 10:45	Vicky Gold	CryoEM structures and single-cell insights into the biology of filamentous phages
10:45 - 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Tim Grant	Laser-Induced Rehydration of Cryo-Landed Proteins Restores Native Structure
11:45 – 12:30	Rouslan Efermov	Using microfluidics to advance sample preparation for single particle cryo-EM
12:30 – 14:00	<i>LUNCH</i>	
14:00 – 14:45	Henriette Autzen	Detergent-free membrane protein extraction: Keeping membrane proteins feral
14:45 – 15:30	Markus Seeger	Sybodies for conformational trapping and size augmentation of membrane proteins
15:30 – 15:45	<i>COFFEE BREAK</i>	
15:45 - 16:30	Arjen Jacobi	Nanofluidic systems for 4D structural biology

Program

Tuesday, 16 September 2025

16:30 – 18:00 **Poster talks**

Florestan Bilsing	Structural basis of Protein O-mannosylation by Pmt4
Kevin Janson	Novel sample delivery for small nanoparticles and biomolecules for cryo electron microscopy
Alexej Kedrov	Substrate-induced assembly and functional mechanism of the bacterial membrane protein insertase SecYEG-YidC
Yuan E Lee	Improved Cryo-EM Resolution of Enterococcus hirae V-ATPase: Structural Insights into the Full Complex
Agnes Moe	Molecular architecture and lipid transfer between the two mitochondrial membranes
Jan Michael Schuller	Dissecting the Wood-Ljungdahl Pathway - Molecular Basis of Acetogenesis
Carl von Hallerstein	Atomic-level membrane protein structure determination in vacuum using ES-IBD and cryo-EM
Céline Zheng-Gérard	Structural investigation of the 60 kDa potassium channel TASK-1 using cryo-EM

18:30 - 20:00 *HERAEUS DINNER*
(social event with cold & warm buffet with complimentary drinks)

20:00 – 21:00 **Poster session and poster prizes**

21:00 *Get together*

Program

Wednesday, 17 September 2025

07:45 - 09:00	<i>BREAKFAST</i>	
09:00 - 10:00	Philipp Sebastian Erdmann	Lift out! Towards a Biopsy at the Nanoscale
10:00 - 10:45	Cristina Paulino	A (male) Na⁺/H⁺ exchanger with potential...
10:45 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Bonnie Murphy	Establishing elemental mapping for cryopreserved complexes
11:45 – 12:30	Carsten Sachse	On the capabilities of scanning transmission electron microscopy methods for ice-embedded biological specimens
12:30 - 14:00	<i>LUNCH</i>	

End of the seminar and departure

For participants leaving on Thursday a self-service breakfast will be provided on Thursday morning.