

International Symposium on Cryo-EM – past and future challenges

Celebrating the Nobel Prize in Chemistry 2017

Arrhenius Laboratory, Stockholm University, December 9, 2017

Visualizing the structures of biological molecular machines is an absolute requirement in order to understand their mechanism. Cryo-EM is a key method for this visualization, and due to the recent technical developments it can provide refined atomic structures even for structure-based drug design. The symposium coincides with the Nobel Prize that has been awarded for the development of the cryo-EM and will present the methodological progress as well as the applications to central biological questions. It brings together world-leading experts, Swedish researchers, and industrial scientists to discuss ideas for further advancement in this exciting and rapidly evolving field.

The symposium is free of charge but requires registration via symposium website:

<http://www.mmk.su.se/cryo-em-symposium>. All researchers are welcome to take active part and contribute with posters. Deadline for registration: November 20, 2017

The Nobel Lectures given by this year's Nobel Laureates in Physics and Chemistry will be held 9.00-14.00, December 8, Aula Magna, Stockholm University, which are open to public.

The Nobel Prize Award Ceremony will be held on December 10.

- 09.00 – 09.10 Welcome and introduction – Sven Hovmöller, Stockholm University
09.10 – 09.45 Nigel Unwin, MRC Laboratory of Molecular Biology, UK
The structural basis of fast synaptic transmission explored by cryo-EM
09.45 – 10.20 Marin van Heel, Leiden University and LNNano, Campinas Brazil
TBA
10.20 – 10.40 Shintaro Aibara, SciLifeLab/Stockholm University, Sweden
From pharmaceutical compounds to ribosomes
10.40 – 11:00 *Coffee break*
11.00 – 11.35 Chris Russo, MRC Laboratory of Molecular Biology, UK
Determining and avoiding some of the physical limits in electron cryomicroscopy
11.35 – 12.10 Christian Spahn, Charité-Universitätsmedizin, Germany
The ribosome - a paradigm for a macromolecular machine
12.10 – 12.30 Bjorn Forsberg, SciLifeLab/Stockholm University, Sweden
Current and future processing paradigms in cryo-EM
12.30 – 14.00 *Lunch and poster session, Arrhenius Laboratory*
14.00 – 14.35 Yoshinori Fujiyoshi, Nagoya University, Japan
Structure-Guided Drug Development by CryoEM
14.35 – 15.10 Peijun Zhang, University of Oxford and eBIC, Diamond Light Source, UK
Structural Basis of HIV Capsid Assembly, Maturation and Host Cell Interactions
15:10 – 15:30 Janna Bigalke, AstraZeneca Pharmaceuticals, Möndal, Sweden
The secret to cell regeneration: structural basis for RET activation by Neurturin
15.30 – 15.50 *Coffee break*
15:50 – 16:15 Hongwei Wang, Tsinghua University, China
New opportunities that the phase plate brings to Cryo-EM
16:15 – 16:40 Dan Shi, Howard Hughes Medical Institute, USA
MicroED – a new application of electron crystallography in structural biology
16:40 – 17:00 Hongyi Xu, Stockholm University, Sweden
Electron crystallography for studying protein structures
17.00 – 17:15 *Concluding remarks*



Organisers:

Alexey Amunts (SciLifeLab/SU)
Erik Lindahl (SciLifeLab/SU & KTH)
Hans Hebert (KTH & KI)
Sven Hovmöller, Hongyi Xu, Xiaodong Zou (SU)
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