In situ Structural Biology: From Cryo-EM to Integrative Modelling - Virtual

EMBO WORKSHOP

EMBL Courses and Conferences during the Coronavirus pandemic

With the onsite programme paused, many of our events are now being offered in virtual formats.

Registration is open as usual for many events, with back-up plans in place to move further courses and conferences online as necessary. Registration fees for any events affected by the COVID-19 disruption are fully refundable.

More information for participants of events at EMBL Heidelberg can be found here.

Programme

Got something to say? Tweet it! #EMBOStructBio

- The virtual conference includes live-streamed invited speaker talks with live Q&A sessions after each talk as well as meet the speaker sessions.
- **All digital poster presenters are encouraged to upload a recorded flash talk with their digital poster and to schedule video calls during poster session times.**
- Information on the live stream and access to the discussion platform and digital posters will be provided 1 week before the start of the event.

The following times are used in the programme below:

— Central European Time (CET): eg. Berlin, Amsterdam, Paris

To find out the equivalent time zone in your location, enter Berlin, the CET programme time
and your city into the Time Zone Converter.

Day 1 - Sunday 6 December 2020

Time	Speaker
15:00-15:10 (CET) 09:00-09:10 (EST)	**Opening remarks**
15:10-16:40 (CET) 09:10-10:40 (EST)	**Virtual Session 1 - Imaging across scales** Chair: Martin Beck - Max Planck Institute of Biophysics, Germany
15:10-15:40 (CET) 09:10-09:40 (EST)	**Fluorescence based in situ structural biology with residue precision** Edward A. Lemke - IMB, JGU and EMBL Heidelberg, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:40-16:10 (CET) 09:40-10:10 (EST)	**Superresolution microscopy for structural cell biology** Jonas Ries - EMBL Heidelberg, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
16:10-16:40 (CET) 10:10-10:40 (EST)	**From ion transport to mineral assembly and deposition in bone** Lia Addadi - Weizmann Institute of Science, Israel *AVAILABLE ON DEMAND AFTER LIVE STREAM*
16:40-16:45 (CET) 10:40-10:45 (EST)	**Break**

Time	Speaker
16:45-17:30 (CET) 10:45-11:30 (EST)	**Panel discussion: Structural in situ biology of SARS-CoV-2** Chair: Martin Beck Max Planck Institute of Biophysics, Germany Panelists: Gerhard Hummer, Max Planck Institute of Biophysics, Germany Andrea Graziadei, TU Berlin, Germany Luiza Mendonca, University of Oxford, United Kingdom Jadson Santos, University of São Paulo, Brazil Léonie Strömich, Imperial College London, United Kingdom Sophie Winter, University Hospital Heidelberg, Germany Georg Wolff, LUMC, The Netherlands
17:30-17:45 (CET) 11:30-11:45 (EST)	**Break**
17:45-18:30 (CET) 11:45-12:30 (EST)	**Keynote lecture:** **Structural biology *in situ* or the power of seeing the whole picture** Wolfgang Baumeister - Max Planck Institute of Biochemistry, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
18:30-19:00 (CET) 12:30-13:00 (EST)	**Meet the speakers (E. Lemke, J. Ries, L. Addadi, W. Baumeister) in individual zoom rooms**
19:00-20:00 (CET) 13:00-14:00 (EST)	**Virtual Poster Session 1 (all posters)** **including live chats, recorded flash talks from poster presenters and discussion channels on Slack**
	End of day 1 - Continued access to digital posters, networking and discussion platform

Day 2 - Monday 7 December 2020

Time	Speaker
13:00-13:20 (CET) 07:00-07:20 (EST)	Industry session (optional) - further details are available on Slack
13:20-13:30 (CET) 07:20-07:30 (EST)	Break

13:30-15:00 (CET) 07:30-09:00 (EST)	**Virtual Session 2 - Structural analysis *in situ*** Chair: Julia Mahamid - EMBL Heidelberg, Germany
13:30-14:00 (CET) 07:30-08:00 (EST)	**Towards a mechanistic understanding of motile and primary cilia with CLEM and cryo-electron tomography** Gaia Pigino - Max Planck Institute of Molecular Cell Biology and Genetics, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:00-14:30 (CET) 08:00-08:30 (EST)	**Structure of the complete, membrane-assembled COPII coat reveals a complex interaction network** Giulia Zanetti - Birkbeck, University of London, UK *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:30-15:00 (CET) 08:30-09:00 (EST)	**Elucidating dynamic landscape of SARS-COV-2 spike *in situ*** Beata Turonova - EMBL Heidelberg, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:00-15:05 (CET) 09:00-09:05 (EST)	**Transition over to Meet the speakers from Virtual Session 2**
15:05-15:30 (CET) 09:05-09:30 (EST)	**Meet the speakers (G. Pigino, G. Zanetti, B. Turonova) in individual zoom rooms**
15:30-16:30 (CET) 09:30-10:30 (EST)	**Virtual Poster Session 2 (all posters)** **including live chats, recorded flash talks from poster presenters and discussion channels on Slack**
16:30-16:45 (CET) 10:30-10:45 (EST)	**Break**
16:45-18:40 (CET) 10:45-12:40 (EST)	**Virtual Session 3 - Molecular sociology** Chair: Julia Mahamid - EMBL Heidelberg, Germany
16:45-17:15 (CET) 10:45-11:15 (EST)	***In situ* structural studies of prokaryotic cell surface molecules** Tanmay Bharat - University of Oxford, UK *AVAILABLE ON DEMAND AFTER LIVE STREAM*

17:15-17:45 (CET) 11:15-11:45 (EST)	**How membrane architectures contribute to cellular functions** Wanda Kukulski - MRC Laboratory of Molecular Biology, UK
17:45-18:15 (CET) 11:45-12:15 (EST)	**Cell-cell interactions studied by cryo-electron tomography** Martin Pilhofer - ETH Zürich, Switzerland
18:15-18:45 (CET) 12:15-12:45 (EST)	**The in situ structure of Parkinson's disease-linked LRRK2** Elizabeth Villa - University of California, San Diego, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
18:45-18:50 (CET) 12:45-12:50 (EST)	**Transition over to Meet the speakers from Virtual Session 3**
18:50-19:20 (CET) 12:50-13:20 (EST)	**Meet the speakers (T. Bharat, W. Kukulski, M. Pilhofer, E. Villa) in individual zoom rooms**
19:20-20:30 (CET) 13:20-14:30 (EST)	Live Jazz **and Virtual Bar Mixer (grab a drink/fruit juice and meet repeatedly in randomly mixed groups for 10 min each time) (Login details available on Slack)**
	End of day 2 - Continued access to digital posters, networking and discussion platform

Day 3 - Tuesday 8 December 2020

Time	Speaker
13:00-13:30 (CET) 07:00-07:30 (EST)	**Meet the following editors in individual zoom rooms (Login details available on Slack)** Arunima Singh, Springer Nature, United States of America Christine Mieck, SpringerNature/NatureCommunications, Germany Marina Ostankovitch, Wiley, Germany Mishtu Dey, Structure, Cell Press, United States of America Nicole Neuman, Cell, United States of America Sadaf Shadan, Nature, United Kingdom Anke Sparmann, Nature Structural & Molecular Biology, Germany

13:30-15:00 (CET) 07:30-09:00 (EST)	**Virtual Session 4 - Biophysical analysis in cells** Chair: Martin Beck - Max Planck Institute of Biophysics, Germany
13:30-14:00 (CET) 07:30-08:00 (EST)	**Proteomes in 3D: *in situ* protein structural states as a readout for proteome functional alterations** Paola Picotti - ETH Zürich, Switzerland *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:00-14:30 (CET) 08:00-08:30 (EST)	**Biophysical proteomics for understanding molecular biology** Mikhail Savitski - EMBL Heidelberg, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:30-15:00 (CET) 08:30-09:00 (EST)	**In cell integrative structural biology by crosslinking mass spectrometry and cryo-electron tomography** Juri Rappsilber - TU Berlin, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:00-15:05 (CET) 09:00-09:05 (EST)	**Transition over to Meet the speakers from Virtual Session 4**
15:05-15:30 (CET) 09:05-09:30 (EST)	**Meet the speakers (M. Savitski, P. Picotti, J. Rappsilber) in individual zoom rooms**
15:30-15:40 (CET) 09:30-09:40 (EST)	**Break**
15:40-17:10 (CET) 09:40-11:10 (EST)	**Virtual Session 5 - Integrative modelling** Chair: Jan Kosinski - EMBL Hamburg, Germany
15:40-16:10 (CET) 09:40-10:10 (EST)	**Putting it all together: From experiment and simulation to structure and dynamics** Gerhard Hummer - Max Planck Institute of Biophysics, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
16:10-16:40 (CET) 10:10-10:40 (EST)	**Integrative modeling of biomolecular assembly structures** Andrej Sali - University of California, San Francisco, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*

16:40-17:10 (CET) 10:40-11:10 (EST)	Modeling molecular cell biology David S. Goodsell - Scripps Research, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
17:10-17:20 (CET) 11:10-11:20 (EST)	Break
17:20-18:05 (CET) 11:20-12:05 (EST)	Keynote lecture: Simulating the minimal cell: Integration of cryo-electron tomography, genomic information, theory and hybrid computational methodologies Zaida (Zan) Ann Luthey-Schulten - University of Illinois at Urbana-Champaign, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
18:05-18:15 (CET) 12:05-12:15 (EST)	Closing remarks and poster prizes
18:15-18:45 (CET) 12:15-12:45 (EST)	Meet the speakers (G. Hummer, A. Sali, D. Goodsell, Z. Luthey-Schulten) in individual zoom rooms
	End of day 3 - Continued access to digital posters, networking and discussion platform until 22 December 2020