Chemical Biology 2020 - 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

Registered participants for the virtual conference will receive final details, including links to virtual platforms, on Thursday 27 August. The link to the live stream will be sent on Wednesday 2 September.

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- The virtual conference includes live-streamed invited speaker talks with live Q&A sessions after each talk (20 min talk plus 5 min Q&A).
- All selected short talks (10 min each) will be pre-recorded with Q&A in individual zoom rooms (see programme).
- All digital poster presenters are encouraged to upload a recorded flash talk (1-2 min)

with their digital poster and to schedule a video call during poster session times.

— Access to the recorded talks will be available for registered participants until 1 week after the start of the event.

The following times are used in the programme below:

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

— Eastern Daylight Time (EDT): eg. New York, Quebec

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

Day 1 - Thursday 3 September 2020

Time	Speaker
13:30-13:40 (CEST) 07:30-07:40 (EDT)	Opening remarks by Kai Johnsson
13:40-15:25 (CEST) 07:40-09:25 (EDT)	Virtual Session 1 Chair: Claire Deo
13:40-14:05 (CEST) 07:40-08:05 (EDT)	Design and implementation of de novo biosynthetic cascades Sabine L. Flitsch, The University of Manchester, UK *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:05-14:30 (CEST) 08:05-08:30 (EDT)	Harnessing the chemistry of plants Sarah E. O'Connor, Max Planck Institute for Chemical Ecology, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:30-14:35 (CEST) 08:30-08:35 (EDT)	Break (to setup and switch to the next set of live talks)
14:35-15:00 (CEST) 08:35-09:00 (EDT)	Regulation of cGAS-STING immunity Andrea Ablasser, Ecole Polytechnique Fédérale de Lausanne, Switzerland

Time	Speaker
15:00-15:25 (CEST) 09:00-09:25 (EDT)	**Fluorescent peptide biosensors for probing protein kinases: Original tools for cancer diagnostics, therapeutics and drug discovery** May C. Morris, Institut des Biomolécules Max Mousseron, University Montpellier, France *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:25-15:55 (CEST) 09:25-09:55 (EDT)	**Meet the following short talk speakers in individual zoom rooms (login details available on slack):** **Dynamic equilibrium of the aurora A kinase activation loop revealed by single-molecule spectroscopy** Charlotte Dodson, University of Bath, UK **Proteome-wide mapping of covalently ligandable sites for novel antibiotics** Stephan Hacker, TU Munich, Germany **Doxorubicin-decorated attenuated Listeria monocytogenes (Dox-Lmat): a new chemo-immunotherapeutic "Smart Pill"** Irene Lepori, Institute of Clinical Physiology, Italy **Micellar Brønsted acid-mediated synthesis of DNA-tagged heterocycles** Mateja Klika Skopic, TU Dortmund, Germany **The CDK inhibitor CR8 acts as a molecular glue degrader that depletes cyclin K** Zuzanna Kozicka, FMI for Biomedical Research, Switzerland **Inspiration from fluorination** William Pomerantz, University of Minnesota, USA **Avoid the trap: Targeting PARP1 beyond human malignancy** Yonghao Yu, UT Southwestern Medical Center, USA **heliX - A next generation modular biosensor for interaction and conformation analysis (Sponsored)** Guido Uhlenbrock, Dynamic Biosensors, Germany
15:55-16:40 (CEST) 09:55-10:40 (EDT)	**Virtual Poster Session 1 (odd numbers)** **including live chats and recorded flash talks**
16:40-18:20 (CEST) 10:40-12:20 (EDT)	**Virtual Session 2** **Chair: Maja Köhn**
16:40-17:25 (CEST) 10:40-11:25 (EDT)	**Keynote lecture:** **Pseudo Natural Products – Chemical evolution of natural product structure** Herbert Waldmann, Max Planck Institute of Molecular Physiology, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*

Time	Speaker
17:25-17:30 (CEST) 11:25-11:30 (EDT)	Break (to setup and switch to the next set of live talks)
17:30-17:55 (CEST) 11:30-11:55 (EDT)	VIP tags: Observing proteins by fluorescence and electron microscopy Kimberly Beatty, Oregon Health & Science University, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
17:55-18:20 (CEST) 11:55-12:20 (EDT)	Chemical biology of celiac disease Chaitan Khosla, Stanford University, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
18:20-18:50 (CEST) 12:20-12:50 (EDT)	Meet the speakers from Session 2 (H. Waldmann, K. Beatty, C. Khosla) and A. Ablasser in individual zoom rooms Meet the editors (M. Dey - *Cell Chemical Biology*, K. Johnsson - ACS Chemical Biology, M. Köhn - *Chemical Science,* R. Ragg - *ChemBioChem,* C. Schultz - *Chemical Science*) in individual zoom rooms
18:50-19:20 (CEST) 12:50-13:20 (EDT)	AND IN PARALLEL Career fireside chat hosted by Rachel Coulthard-Graf, EMBL Heidelberg Panelists (sharing their career advice with PhD/postdoc participants): Sascha Hoogendoorn, University of Geneva André Nadler, Max Planck Institute of Molecular Cell and Biology and Genetics

Digital posters and pre-recorded short talks (10 min each) as well as discussion channels will be available for registered participants throughout the whole virtual conference.

Day 2 - Friday 4 September 2020

Time	Speaker
12:40-13:10 (CEST) 06:40-07:10 (EDT)	Meet the editors (M. Bratovič - *Nature Communications*, J. Moore - *Chemical Science*, J. Unsay - *Chemistry - A European Journal*, M. Vleugel - *Nature Protocols)* in individual zoom rooms

13:10-13:40 (CEST) 07:10-07:40 (EDT)	**Meet the speakers from Session 1** (S. Flitsch, S. O'Connor, M. Morris) **in individual zoom rooms**
13:40-15:45 (CEST) 07:40-09:45 (EDT)	**Virtual Session 3** **Chair: Kai Johnsson**
13:40-14:25 (CEST) 07:40-08:25 (EDT)	**Keynote lecture:** **Designing bio-inspired materials for ultrasensitive biosensing and regenerative medicine** Molly Stevens, Imperial College London, UK
14:25-14:50 (CEST) 08:25-08:50 (EDT)	**Translational antibody modifications** Gonçalo Bernardes, University of Cambridge, UK
14:50-14:55 (CEST) 08:50-08:55 (EDT)	**Break (to setup and switch to the next set of live talks)**
14:55-15:20 (CEST) 08:55-09:20 (EDT)	**The second dimension of the genetic code** Thomas Carell, Ludwig-Maximilians-Universität München, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:20-15:45 (CEST) 09:20-09:45 (EDT)	**Synthetic genetics: Beyond DNA and RNA** Philipp Holliger, MRC Laboratory of Molecular Biology, UK *AVAILABLE ON DEMAND AFTER LIVE STREAM*

15:45-16:15 (CEST) 09:45-10:15 (EDT)	Meet the following short talk speakers in individual zoom rooms (login details available on slack): **Phospho-triester/triesterase based chemical-genetic tools for cell specific nascent proteome profiling and calcium imaging** Kesava Phaneendra Cherukuri, Weizmann Institute of Science, Israel **Dissecting the sequence determinants for dephosphorylation by the catalytic subunits of phosphatases PP1 and PP2A** Bernhard Hoermann & Thomas Kokot, University of Freiburg, Germany **Phosphatidic acid phosphatase hops and scoots along the membrane phospholipid bilayer** Joanna Kwiatek, Rutgers University, USA **Optoproteomics enables subcellular proteomic mapping** Jung-Chi Liao, Academia Sinica, Taiwan **Quantitative kinetic analysis of cellular signaling events in single cells** André Nadler, Max Planck Institute of Molecular Cell Biology and Genetics, Germany **Environmentally sensitive color-shifting fluorophores for bioimaging** Lu Wang, Max Planck Institute for Medical Research, Germany **Lehmann Photosensitive tyrosine analogues unravel site-dependent phosphorylation in TrkA initiated MAPK:ERK signaling** Shixin Ye, INSERM, France
16:15-17:00 (CEST) 10:15-11:00 (EDT)	Virtual Poster Session 2 (even numbers) including live chats and recorded flash talks
17:00-18:40 (CEST) 11:00-12:40 (EDT)	Virtual Session 4 Chair: Carsten Schultz
17:00-17:45 (CEST) 11:00-11:45 (EDT)	Keynote lecture: **Transition metal signaling and metalloallostery: Bioinorganic chemistry beyond active sites** Christopher J. Chang, University of California, Berkeley, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
17:45-17:50 (CEST) 11:45-11:50 (EDT)	Break (to setup and switch to the next set of live talks)
17:50-18:15 (CEST) 11:50-12:15 (EDT)	**Expanding the genetic code - Protein chemistry in living systems** Kathrin Lang, Technical University of Munich, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*

18:15-18:40 (CEST) 12:15-12:40 (EDT)	**Ideal protein labeling in cells using genetic code expansion** Ryan A. Mehl, Oregon State University, USA *AVAILABLE ON DEMAND AFTER LIVE STREAM*
18:40-19:10 (CEST) 12:40-13:10 (EDT)	**Meet the speakers from Session 4** (C. Chang, K. Lang, R. Mehl) and M. Stevens **in individual zoom rooms**
19:10-20:00 (CEST) 13:10-14:00 (EDT)	**Virtual Bar Mixer (Meet in randomly mixed groups for 15 minutes - repeated four times) - optional**

Digital posters and pre-recorded short talks (10 min each) as well as discussion channels will be available for registered participants throughout the whole virtual conference.

Day 3 - Saturday 5 September 2020

Time	Speaker
13:10-13:40 (CEST) 07:10-07:40 (EDT)	**Meet the speakers from Session 3** (G. Bernardes, T. Carell, P. Holliger) **in individual zoom rooms**
13:40- 15:25 (CEST) 07:40-09:25 (EDT)	**Virtual Session 5** **Chair: Kai Johnsson**
13:40-14:05 (CEST) 07:40-08:05 (EDT)	**Spontaneously blinking fluorophores for live-cell super-resolution imaging** Mako Kamiya, The University of Tokyo, Japan *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:05-14:30 (CEST) 08:05-08:30 (EDT)	**Hybrid fluorescent reporters for biological imaging** Claire Deo, EMBL Heidelberg, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
14:30-14:35 (CEST) 08:30-08:35 (EDT)	**Break (to setup and switch to the next set of live talks)**

14:35-15:00 (CEST) 08:35-09:00 (EDT)	**A chemical toolbox for labeling, visualizing and manipulating biological function** Johannes Broichhagen, Max Planck Institute for Medical Research, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*
15:00-15:25 (CEST) 09:00-09:25 (EDT)	**Going viral** Donald Hilvert, ETH Zürich, Switzerland
15:25-15:55 (CEST) 09:25-09:55 (EDT)	**Meet the following short talk speakers in individual zoom rooms (login details available in slack):** **O-GlcNAcylation of small heat shock proteins enhances their anti-amyloid chaperone activity** Aaron John Balana, University of Southern California, USA **Turning nanobodies on and off** Helen Farrants, Janelia Research Campus, USA **In-situ rewiring of receptors and cellular logistics by light** Maria Florencia Sánchez, Goethe University Frankfurt, Germany **Optogenetic engineering to dissect the molecular choreography of cell signaling** Guolin Ma, Texas A&M University, USA **Photochromic ligands for in vivo modulation of adrenergic neurotransmission** Davia Prischich, Institute for Bioengineering of Catalonia (IBEC), Spain **Photoswitchable reagents for controlling the microtubule cytoskeleton** Oliver Thorn-Seshold, LMU Munich, Germany **Rational design of photochromic analogs of tricyclic drugs** Rosalba Sortino, Institute for Bioengineering of Catalonia (IBEC), Spain
15:55-16:40 (CEST) 09:55-10:40 (EDT)	**Virtual Poster Session 3 (all numbers) including live chats and recorded flash talks**
16:40-17:30 (CEST) 10:40-11:30 (EDT)	**Virtual Session 6 Chair: Claire Deo**
16:40-17:05 (CEST) 10:40-11:05 (EDT)	**Fixing carbon dioxide fixation: Drop-by-drop towards a synthetic chloroplast** Tobias J. Erb, Max Planck Institute for Terrestrial Microbiology, Germany *AVAILABLE ON DEMAND AFTER LIVE STREAM*

17:05-17:30 (CEST) 11:05-11:30 (EDT)	Converting interactions into actions Nicolas Winssinger, University of Geneva, Switzerland
17:30-17:40 (CEST) 11:30-11:40 (EDT)	**Closing remarks by Maja Köhn**
17:40-18:10 (CEST) 11:40-12:10 (EDT)	**Meet the speakers from Sessions 5 and 6 in individual zoom rooms** (C. Deo, J. Broichhagen, D. Hilvert, T. Erb, N. Winssinger)
	Digital posters and pre-recorded short talks (10 min each) as well as discussion channels will be available for registered participants until 11 September.