



# Macromolecular Machines in Biomedicine: Structure, Dynamics, and Evolution

a satellite meeting to the XXV IUCr Congress

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Dates: August 21-22, 2020

Venue: Prague Conference Center (PCC), Prague, Czech Republic  
the place where the XXV IUCr Congress will be held

Structural biology has been continuously transformed during the past six decades by wave-upon-wave of new instrumentation and more powerful cyber infrastructure following the advent of macromolecular crystallography and publication of the first X-ray structures of proteins. Detailed knowledge of 3D structures (shapes) of biomolecules, how they move and change shape, how they have evolved, and how they function in nature has become essential for understanding critical areas of science. Macromolecular structure data impacts basic and applied research on health and disease of humans, animals, and plants; production of food and energy; and other research pertaining to global prosperity and environmental sustainability. Structure data are also important to biopharmaceutical companies, contributing significantly to the discovery of new drugs, materials, and devices. Today, powerful pulsed X-ray facilities, cryogenic electron microscopes, and emerging integrative methods for structure determination are accelerating biomedical research with functional insights into ever more complex biological systems.

On August 21-22, 2020, internationally-recognized experts will share their perspectives at a two-day satellite meeting "Macromolecular Machines in Biomedicine: Structure, Dynamics, and Evolution" preceding the 25th International Union of Crystallography Congress. In addition to plenary lectures and invited talks, the meeting will feature a poster session and short talks selected from submitted abstracts.



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## Friday August 21<sup>st</sup> 2020, 08:30 - 20:00

Day One. Venue: Prague Conference Center, PCC

08:30 - 09:30	Registration	
09:30 - 09:45	Welcome and introduction to the conference by the organizers	
09:45 - 10:30	<b>Andrej Sali</b> (University of California San Francisco, USA)	<b>Integrative Structure Determination and Validation</b>
10:30 - 11:00	<b>Ilme Schlichting</b> (Max Planck Institut, Heidelberg, Germany)	<b>Time-resolved X-ray Crystallography</b>
11:00 - 11:30	Coffee/Networking and Poster Hanging	
11:30 - 11:50	Time-resolved X-ray session: Talk selected from abstracts #1	
11:50 - 12:10	Time-resolved X-ray session: Talk selected from abstracts #2	
12:10 - 12:30	Time-resolved X-ray session: Talk selected from abstracts #3	
12:30 - 14:30	Lunch/Networking and Poster Viewing	
14:30 - 15:15	<b>Wah Chiu</b> (Stanford University, USA)	<b>Visualizing Conformational Heterogeneity with Cryo-Electron Microscopy</b>
15:15 - 15:45	<b>Rui Zhao</b> (University of Colorado Health Sciences Center, USA)	<b>Structure and Dynamics of the RNA Spliceosome</b>
15:45 - 16:15	Coffee/Networking and Poster Viewing	
16:15 - 16:45	<b>Fei Xu</b> (iHuman, ShanghaiTech University, China)	<b>Allosteric Regulation of G-protein Coupled Receptors</b>
16:45 - 17:05	Cryo-EM session: Talk selected from abstracts #4	
17:05 - 17:25	Cryo-EM session: Talk selected from abstracts #5	
17:25 - 17:45	Cryo-EM session: Talk selected from abstracts #6	
17:45 - 20:00	Poster Viewing and Dinner	



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## Saturday, August 22<sup>nd</sup> 2020, 09:00 - 14:00

Day Two. Venue: Prague Conference Center, PCC

09:00 - 09:45 **Janos Hajdu** (Uppsala University, Sweden) **Towards Bioimaging with Femtosecond X-ray Pulses**

09:45 - 10:15 **Arwen Pearson** (University of Hamburg, Germany) **Time-resolved X-ray Crystallography**

10:15 - 10:35 X-ray session: Talk selected from abstracts #7

10:35 - 11:00 Coffee/Networking

11:00 - 11:30 **TBA**

**RNA Bioinformatics**

11:30 - 12:00 **Frank Alber** (University of California, Los Angeles, USA)

**Structure and Dynamics of the Eukaryotic Nucleus**

12:00 - 12:45 **Christine Orengo** (University College London, UK)

**Evolution of macromolecular machines**

12:45 - 13:00 Closing Remarks/Acknowledgements



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