Macromolecular Machines in Biomedicine: Structure, Dynamics, and Evolution
A satellite meeting to the XXV IUCr Congress

August 13-14, 2021
Prague Conference Center, Czech Republic

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 the first X-ray structures of proteins. Detailed knowledge of 3D structures 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.

The 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 13-14, 2021, internationally-recognized experts will help celebrate the 50th Anniversary of the Protein Data Bank by sharing their perspectives at a two-day satellite meeting Macromolecular Machines in Biomedicine: Structure, Dynamics, and Evolution immediately 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.

Complete Information and Registration
bit.ly/3gVsxIT
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Meeting Program

Friday August 13, 2021; 08:30 - 20:00

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

Saturday, August 14, 2021; 09:00 - 13:00

09:00 - 09:45 Janos Hajdu (Uppsala University, Sweden; ELI Beamlines, Czech Republic) Towards Bioimaging with Femtosecond X-ray Pulses
09:45 - 10:15 Arwen Pearson (University of Hamburg, Hamburg, Germany) Time-resolved X-ray Crystallography
10:15 - 10:35 X-ray session: Talk to be selected from submitted abstracts #7
10:35 - 11:00 Coffee/Networking
11:00 - 11:30 Zdenek Lánský (Institute of Biotechnology, Czech Academy of Sciences, Prague, Czech Republic) Cell division: a new perspective on the involved forces
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/Acknowledgments

Complete Information: bit.ly/3gVsxIT