XXI Discussions in Structural Molecular Biology
and
8th User Meeting of CIISB

20-22 March 2025

Programme

Thursday, March 20

12:00 - 14:00 Registration and accommodation, coffee

All talks are 20 minutes long unless indicated otherwise. All times are INCLUDING discussion.

14:30 **Opening of XXI Discussions and 8th User Meeting of CIISB** (*Jan Dohnálek)*
Remembering Vladimír Sklenář *(Lukáš Žídek)*

14:45 - 15:30 **Session I** *Chair person:* **Jan Dohnálek** *Lecture no. – page of abstract*

Valerie Siahaan Institute Curie, CNRS, Orsay, France	Tau proteins cooperatively assemble into cohesive envelopes that protect microtubules against severing enzymes (PhD Thesis Award 2024- winner's talk, 30 min) *L1 – 6*

15:30 - 16:00 *Coffee break*

16:00 - 18:00 **Session II** *Chair person:* **Lukáš Žídek**

Stefana Njemoga Institute of Neuroimmunology, Slovak Academy of Sciences	Sequence-based polymorphism of Tau protein amyloid fibrils (Student talk) *L2 – 7*
Martin Černý Masaryk University, CEITEC, Brno	RNA polymerase subunit delta - elusive player in bacterial transcription (Student talk) *L3 – 8*
Miroslav Kloz ELI Beamlines, Dolní Břežany	Photoactivation of Human Green Cone Opsin Studied by Stimulated Raman Spectroscopy: Initial Steps Toward Understanding the Early Events in Human Vision *L4 – 9*
Edward Curtis Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague	Development and application of catalytic DNA sensors *L5 – 10*
Jiří Zahradník First Faculty of Medicine, Charles University, Prague	Chlamydia Effector CT622/TaiP Complex with Autophagy Master Regulator ATG16L1 *L6 – 10*
Jakub Nowak NanoTemper Technologies Sp.	Beyond Monolith X- The principles of Spectral Shift (10 min) *L7 – 11*
Josef Uskoba BioTech a.s., Prague	Use of FIDA for rapid characterization of Liquid-Liquid Phase Separation (10 min) *L8 – 11*

18:00 Dinner

20:00 ***CIISB Executive committee***

Friday, March 21

7:30 - 9:00 *Breakfast*

9:00 - 10:30 **Session III** *Chair person:* **Vojtěch Spiwok**

Jan Dohnálek Institute of Biotechnology, Czech Academy of Sciences, Vestec	Can sequence-, structure- and sugar-nonspecific nucleases be harnessed? ***L9 – 13***
Jakub Bělíček Palacký University, Olomouc	Oligomerization as a Regulatory Mechanism in Plant Adenosine Kinase Activity (Student talk) ***L10 – 14***
Jana Horáčková Masaryk University, Faculty of Science, Brno	Shedding light on the secrets of NanoLuc, its mechanism, and allosteric behaviour (Student talk) ***L11 – 15***
Miroslav Peřina Palacký University, Olomouc	CDK2-based CDK7 mimic as a tool for structural analysis: Biochemical validation and crystal structure with SY5609 ***L12 – 16***
Paul Driver Molecular Dimensions, Cambridge	Crystallizing the Future: Unveiling New Innovations at Molecular Dimensions (10 min) ***L13 – 17***

10:30 - 11:00 *Coffee break and group photo*

11:00 - 12:10 **Session IV** *Chair person:* **Jana Škerlová**

Maša Janošev Institute of Physiology, Czech Academy of Sciences, Prague	Structural Mechanisms of Regulation of Human Nedd4-2 by 14-3-3η dimer and Calcium ions (Student talk) ***L14 – 18***
Martin Malý Medical Research Council, Cambridge	*Servalcat* and *MetalCoord*: New structure refinement strategies in *CCP4 and CCP-EM* ***L15 – 19***
Hynek Mácha ANAMET s.r.o., Prague	From characterization of proteins and their interactions to their determination in nanocarriers ***L16 – 20*** (10 min)

Poster flash talks, 2 minutes each

Ondřej Bulvas (Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague)
Dynamic Allosteric Regulation of Mycobacterial Inosine Monophosphate Dehydrogenase

Miroslava Alblová (Institute of Biotechnology, Czech Academy of Sciences, Vestec)
Protein Production Facility – DNA & Proteins for Your Research

Vladěna Bauerová (Institute of Neuroimmunology, Slovak Academy of Sciences, Bratislava)
The effect of the cardiac-associated mutations on the biophysical properties, fold and structure of the N-terminal domain of human ryanodine receptor 2

Mateo Seoane Blanco (Masaryk University, CEITEC, Brno)
PhiKZ baseplate structure

Yelyzaveta Pulnová (ELI Beamlines, Dolní Břežany)
Laser-driven plasma X-ray source at ELI Beamlines (Student poster)

Sahra Setenay Baran (Institute of Biotechnology, Czech Academy of Sciences, Vestec)
Improved validation and refinement of biomolecular structures (Student poster)

Jitka Vysloužilová (University of South Bohemia, Faculty of Science, České Budějovice)
Structure and Dynamic Properties of Porphyrin Aggregates in Solution (Student poster)

Martin Sitte (Masaryk University, Faculty of Science, Brno)
Functional characterisation of the luminous apparatus of the sea pen *Pennatula phosphorea* (Student poster)

Jayashri Bhosale (Charles University, Faculty of Science, Prague)
Structural insights into 14-3-3-mediated regulation of human ASK1 (Student poster)

12:30 *Lunch*

16:00 - 17:50 **Session V** *Chair person:* **Edward Curtis**

Vojtěch Spiwok University of Chemistry and Technology, Prague	Amino Acids in the Context of Protein Structure: What we Can Learn from Protein Large Language Models	*L17 – 21*
Hugo McGrath University of Chemistry and Technology, Prague	Gating of the ribosome exit tunnel (Student talk)	*L18 – 21*
Gowtham Nirmal Jonnalagadda University of South Bohemia, Faculty of Science, České Budějovice	Long-Range Electron Transfer in Protein-Metal Junctions (Student talk)	*L19 – 22*
Jakub Hrubý Ecole Polytechnique Federale de Lausanne	High-resolution Liquid Cells for Time-resolved Cryo-EM (Student talk)	*L20 – 23*
Klára Kohoutová Charles University, Faculty of Science, Prague	Structural Basis of the 14-3-3/Cyclin Y-mediated Regulation of CDK16 (Student talk)	*L21 – 24*
Stanislav Kukla Merck Life Science, Prague	Seeing is believing: Proximity ligation assay (10 min)	*L22 – 25*

18:00 - 19:00 **General Assembly of the Czech Society for Structural Biology**

The meeting will be held in the Czech and/or Slovak languages

1. Volba zapisovatele
2. Schválení programu
3. Volby Rady ČSSB na období 2025-2030
4. Volba Kontrolní komise ČSSB na období 2025-2030
5. Výroční zpráva Rady ČSSB o činnosti a hospodaření
6. Zpráva revizní komise
7. Schválení výroční zprávy Rady ČSSB o činnosti a hospodaření
8. Revize členské základny
9. Infrastruktury se vztahem ke strukturní biologii, přístupy, financování, vývoj Instructu a jiných
10. Různé

19:00 - 20:00 *Dinner*

20:00 - 22:00 **Poster session,** (CSSB Council meeting)

Saturday, March 22

7:30 - 9:00 *Breakfast*

9:00 - 10:20 **Session VI** *Chair person*: **Jiří Pavlíček**

Gabriel Demo Masaryk University, CEITEC, Brno	Cryo-EM analysis of *E. coli* ribosome recovery mechanism in the absence of the 30S maturation factor RimM	*L23 – 26*
Jiří Nováček Masaryk University, CEITEC, Brno	Snapshots of the glucose metabolism studied by electron cryo-microscopy *in vitro* and *in situ*	*L24 – 26*
Michaela Novotná Institute of Microbiology, Czech Academy of Sciences, Prague	CLINCELIN: A redesigned lincosamide combats ribosome resistance modification through enhanced binding and structural flexibility (Student talk)	*L25 – 27*
Jana Škerlová Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague	Structure of botulinum-like toxins	*L26 – 27*

10:20 - 10:50 *Coffee break*

10:50 - 11:50 **Session VII** *Chair person:* **Michaela Wimmerová**

Ladislav Bumba Institute of Microbiology, Czech Academy of Sciences, Prague	*In situ* visualization of the *Bordetella* filamentous hemagglutinin by cryo-electron tomography	*L27 – 29*
Alastair Gardiner Institute of Microbiology, Czech Academy of Sciences, Prague	Two solutions for efficient light-harvesting in phototrophic *Gemmatimonadota*	*L28 – 29*
Pavel Plevka Masaryk University, CEITEC, Brno	Cell entry and genome delivery of enteroviruses	*L29 – 30*

11:50 - 12:20 **Evaluation of student presentations, prizes, concluding remarks**

12:30 *Lunch & departure*