

Summer School of Molecular and Structural Biology

Teacher(s)	Pavel Plevka, Robert Vácha, Jiří Damborský, Zbyněk Prokop, David Bednář, Martin Marek, Stas Mazurenko, Tomasz Nodzyński, Martin Lysák, Jiří Fajkus		
Department/Faculty	CEITEC MU, Faculty of Science	Field/ Keywords	structural biology, imaging, protein characterization by mass spectrometry, X-ray crystallography, cryo-electron microscopy, and NMR spectroscopy methods
Academic Level	Bachelor;Master;PhD;		
Scholarship	CEITEC will consider (partial) waiver of tuition fees (350 – 400 EUR) to applicants that will explain a reasoning for such financial need in their motivation letter		
Contact for the course related matters:		Kateřina Ornerová katerina.ornerova@ceitec.muni.cz	

Course Description

The Summer school of Structural Biology is dedicated to students (primary at Master level, but others are welcome too) of biological and biochemistry sciences who are interested in modern approaches of experimental research and practical applications of recent findings in this field.

The lectures from the experts will cover many different topics of structural biology research from - virology, protein engineering, computer simulations, plant cell, and developmental biology as well as genomics, cytogenetics and proteomics. Participants will learn about structural biology, imaging, protein characterization by mass spectrometry, X-ray crystallography, cryo-electron microscopy, and NMR spectroscopy methods during a presentation by each of the Core Facility labs represented at the University Campus.

The Summer School will be held in the CEITEC MU (<https://muni.ceitec.cz/en/>) building A35, Room 211, and Core Facility labs covering different methodological approaches in structural biology.

Lecture Topics

Week 1 (11. – 15. 7. 2022) - Week of Research Groups

Pavel Plevka - <https://plevka.ceitec.cz/>

Robert Vácha - <https://vacha.ceitec.cz/>

Jiří Damborský, Zbyněk Prokop, David Bednář, Martin Marek, Stas Mazurenko

Tomasz Nodzyński - <https://www.ceitec.eu/developmental-and-cell-biology-of-plants/rg50>

Martin Lysák - <https://www.ceitec.eu/prof-martin-lysak-ph-d/u17374?page=publication>

Jiří Fajkus - <https://www.ceitec.eu/prof-jiri-fajkus/u45124?page=publication>

Week 2 (18. – 22. 7. 2022) - Week of Core Facilities

Proteomics

NMR methods for characterization of biomolecular structure, dynamics, and interactions

Genomics

Bioinformatics

Biomolecular interactions and crystallization

Cellim

Cryo-EM

X-ray

NanoBiotechnology

Mafil

Plant Sciences

Pre-Requisites

- Student's pre-requirements: students of biochemistry/biology/medicine are preferred, no other pre-requisites than enthusiasm and deep interest