

Registration

Deadline for registration: May 28th 2019

eva.huber@tum.de

Participation is free of charge but limited to 30 persons.

Organization

Eva M. Huber is a habilitation candidate at the Technical University of Munich and member of the Young Scholars' Program of the Bavarian Academy of Sciences and Humanities since 2017.

jungeskolleg.badw.de

BAVARIAN ACADEMY OF SCIENCES AND HUMANITIES

Alfons-Goppel-Straße 11 (Residenz)

80539 München

Sitzungssäle, first floor

Phone +49 89 23031-0, www.badw.de

Directions

U3/U6, U4/U5 Odeonsplatz

Tram 19 Nationaltheater

No car park available

BAdW

Structural Biology of Proteins

WORKSHOP

11/6/19

8.45 A.M. – 17.00 P.M.

**Junges
Kolleg**



Bayerische
Akademie der Wissenschaften

Program

- 8.45 Uhr **Reception**
DR. E. M. HUBER
(Technical University of Munich)
- Session 1: X-ray crystallography**
- 9.00 Uhr **Crystallization and diffraction data collection**
DR. A. BRACHER (Max Planck Institute of Biochemistry, Martinsried)
- 9.30 Uhr **The phase problem in X-ray crystallography**
DR. E. M. HUBER
(Technical University of Munich)
- 10.00 Uhr **Refinement, validation and ligand building**
DR. J. KÖHNKE (Helmholtz Institute for Pharmaceutical Research, Saarbrücken)
- 10.30 Uhr **Coffee break**
- Session 2: SAXS**
- 11.00 Uhr **Biological SAXS**
DR. M. GRÄWERT (EMBL, Hamburg)
- Session 3: NMR and homology modeling**
- 11.30 Uhr **Solution-state NMR for probing structure and dynamics of proteins**
PROF. DR. F. HAGN (Technical University of Munich and Helmholtz Zentrum München)
- 12.00 Uhr **Combining X-ray crystallography, NMR and homology modeling**
DR. S. WIESNER (University of Regensburg)
- 12.30 Uhr **Lunch**

Structural Biology of Proteins

Structural biology serves to decipher the molecular architecture of biomolecules, especially of proteins. Knowledge about the structure of proteins is essential for understanding how they fulfill their biological function and how disease-associated modifications affect their functioning. To visualize the atomic details of proteins, researchers apply sophisticated methods that examine a vast number of identical molecules at the same time. This workshop will cover the most popular techniques of structural biology, X-ray crystallography, cryo-electron microscopy, nuclear magnetic resonance spectroscopy and small angle X-ray scattering. Advantages and limitations as well as latest developments will be discussed. The course primarily addresses (PhD) students and postdocs.

Session 4: Cryo-electron microscopy

- 14.00 Uhr **Single particle reconstruction**
PROF. DR. P. WENDLER
(University of Potsdam)
- 14.30 Uhr **Cryo-electron tomography**
PROF. DR. J. PLITZKO
(Max Planck Institute for Biochemistry, Martinsried)

Session 5: Visualization and analysis of protein structures

- 15.00 Uhr **Programs and online-Tools**
DR. S. SCHNEIDER
(Technical University of Munich)

- 15.30 Uhr **Coffee break**
- Key note lecture**

- 16.00 Uhr **The century of vision: Protein structures in basic science and pharma research**
PROF. DR. R. HUBER (Max Planck Institute of Biochemistry, Martinsried)