

## Thursday May 3, 2018

Invitation: **Zdeněk Hostomský, IOCB Prague director**

Opening: **Jiří Vondrášek, IOCB Prague**

**Mikael Oliveberg, Stockholm University**

**Michele Vendruscolo, University of Cambridge**

### Session 1 (18:00 – 19:30)

Chair: Mikael Oliveberg

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|------------|---------------|---|
| <b>1.1</b> | 18:00 – 18:45 | <b>Mónika Fuxreiter (University of Debrecen, HU)</b><br>Fuzziness in protein assemblies – towards a stochastic paradigm                   |
| <b>1.2</b> | 18:45 – 19:30 | <b>Kosuke Fujishima (Tokyo Institute of Technology, JP)</b><br>Protein engineering and in vitro evolution studies for the origins of life |
|            | 19:30 – 21:00 | <b>Welcome drink, reception</b>   |

## Friday May 4, 2018

### Session 2 (9:00 – 12:30)

Chair: Jiri Vondrasek

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| <b>2.1</b> | 9:00 – 9:45   | <b>Harel Weinstein (Cornell, USA)</b><br>How “proteins at work” in the membrane employ allosteric mechanisms                 |
| <b>2.2</b> | 9:45 – 10:30  | <b>David Drew (Stockholm University, SE)</b><br>Establishing the Molecular Mechanism of Sodium/Proton Exchangers             |
|            | 10:30 – 11:00 | <b>Coffee Break</b>  |
| <b>2.3</b> | 11:00 – 11:45 | <b>Michele Vendruscolo (Cambridge University, UK)</b><br>Protein homeostasis dysregulation in Alzheimer’s disease            |
| <b>2.4</b> | 11:45 – 12:30 | <b>José Maria Valpuesta (Centro Nacional de Biotecnología, ES)</b><br>Hsp70: a master regulator in proteostasis ... and more |
|            | 12:30 – 14:00 | <b>Lunch</b>   |

### Session 3 (14:00 – 17:30)

Chair: Alessandro Borgia

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|------------|---------------|---|
| <b>3.1</b> | 14:00 – 14:45 | <b>Jens Danielsson (University of Stockholm, SE)</b><br>In-cell thermodynamics: modulation of protein stability and transient interactions in the cytosol |
| <b>3.2</b> | 14:45 – 15:30 | <b>Arnold Boersma (Groningen University, NL)</b><br>Designed proteins to probe the intracellular environment  |
|            | 15:30 – 16:00 | <b>Coffee Break</b>   |

# Scientific Program

- 3.3** 16:00 – 16:45 **Bojan Zagrovic (University of Vienna, AT)**  
RNA-protein interactions and the structure of the genetic code
- 3.4** 16:45 – 17:30 **Alan Jasanoff (MIT, USA)**  
Engineering magnetically active proteins for imaging the brain
- 17:30 – 18:30 **Dinner buffet**
- 18:30 – 19:30 **Sponsors block**  
**Lutz Ehrhardt (Beckman Coulter)**  
Analytical Ultracentrifugation on “proteins at work” From classical  
“in solution characterization” of proteins and their associations to  
2-Dimensional and Multiwavelength Sedimentation Analysis  
**Giuseppe Tortoriello (Thermo Fisher Scientific)**  
iBright imaging system
- 19:30 – 22:00 **Poster Session**

## Saturday May 5, 2018

### Session 4 (9:00 – 12:30)

Chair: Amnon Horovitz

- 4.1** 9:00 – 9:45 **Christine Orengo (University College London, UK)**  
How proteins evolve – CATH FunFam insights on functional innovation
- 4.2** 9:45 – 10:30 **Rob Finn (EMBL-EBI, UK)**  
Bioprospecting for novel proteins in metagenomics dataset – fact  
or fiction?
- 10:30 – 11:00 **Coffee Break**
- 4.3** 11:00 – 11:45 **José Onuchic (Rice, USA)**  
Exploring protein function: the convergence of structure based models  
and co-evolutionary information
- 4.4** 11:45 – 12:30 **Marek Jindra (Biology Center CAS, CZ)**  
The curious receptor for the “hormone of youth”
- 12:30 – 14:00 **Lunch**

### Session 5 (14:00 – 17:30)

Chair: Christine Orengo

- 5.1** 14:00 – 14:45 **Amnon Horovitz (Weizmann Institute, IL)**  
Chaperonin nano-machines: allostery and function
- 5.2** 14:45 – 15:30 **Gary Drobny (UW Seattle, USA)**  
Spectroscopic Studies of Protein Structure and Dynamics  
at Biomineral Interfaces
- 15:30 – 16:00 **Coffee Break**



- 5.3** 16:00 – 16:45 **Petter Lyngstaadas (University of Oslo, NO)**  
Dental enamel; protein templated biomineralization in a complex hierarchical biological system
- 5.4** 16:45 – 17:30 **Jan Procházka (IMG Prague, CZ)**  
Ameloblastin: too many roles of enamel specialized protein?
- 19:00 – 23:00 **Conference Dinner at Restaurant Vozovna Stromovka**

## Sunday May 6, 2018

### Session 6 (9:00 – 11:45)

Chair: Harel Weinstein

- 6.1** 9:00 – 9:45 **Alessandro Borgia (University of Zurich, CH)**  
A new paradigm for biomolecular interactions: ultrahigh-affinity complex of two intrinsically disordered proteins involved in chromatin remodeling
- 6.2** 9:45 – 10:30 **Gideon Schreiber (Weizmann Institute, IL)**  
How to proteins function within the crowded cellular milieu
- 10:30 – 11:00 **Coffee Break**
- 6.3** 11:00 – 11:45 **Magnus Wolf-Waltz (Umeå University, SE)**  
Positive and Negative Substrate Interference Supported by Coinciding Enzyme Residues



## List of posters

P1	Karel Berka	ChannelsDB – Database of Biomacromolecular Channels, Tunnels and Pores
P2	Jiri Cerny	Structural alphabets for conformational analysis of nucleic acids
P3	Dinesh Dhurvas Chandrasekaran	Towards molecular understanding of single-stranded +RNA viral life cycle by in vitro reconstitution
P4	Michal Dolezal	Myristoylation drives dimerization of matrix protein from mouse mammary tumor virus
P5	Valerio Guido Giaocbelli	Test of genetic code evolution hypotheses: Reverse evolution of specific target proteins by mRNA-display technique
P6	András Hatos	Improvements in disordered proteins annotation
P7	David Jakubec	3DPatch: fast sequence and structure conservation annotation in a web browser
P8	Kateřina Jarosilová	How to predict structure of fused protein chimeras correctly?
P9	Erika Kuřmová	A new inhibitor of c-Myc expression
P10	Michael Mares	Novel structural mechanism of allosteric regulation of aspartic peptidases via evolutionary conserved exosite
P11	Veronika Navrátilová	MOLEonline – Tool for Analysis of Biomacromolecular Tunnels and Pores
P12	Betül M. Oğın	Experimental verification of in silico predicted alternative protein binder to FOXO4 transcription factor
P13	Charlotte Skovgaard Sørensen	Intrinsically disordered protein linkers and effective concentrations
P14	Pavel Srb	Capturing dynamically interacting inhibitor by paramagnetic NMR spectroscopy
P15	Vjaceslav Tretjachenko	Into the wild: expression and characterization of random protein libraries
P16	Jiří Vymětal	Effect of phosphorylation on intrinsic conformational preferences of serine, threonine and tyrosine from a perspective of molecular modeling