Universität Konstanz

Autumn School Chemical Biology: Programme Overview

Sunday, 24 September 2017

Time	Programme	Location/Room
19:00	Welcome Reception	Restaurant Stromeyer - Die Bleiche, Bleicherstrasse 8

Monday, 25 September 2017

Time	Programme	Location/Room
8:00-9:00	Registration	V1001, Building V, Level 10
	Bioconjugation Chemistry	
9:00	Andreas Marx Bioconjugation of Biopolymers, Bioorthogonal Chemistry This talk will highlight and introduce the most important approaches for biorthogonal chemistry covering a large variety of chemistries.	V1001
10:20	Coffee Break	Foyer, Level V10
10:40	Thomas Böttcher Affinity Probes & Labeling Strategies – From Concepts to Applications This talk will focus on the application of bioconjugation chemistry for proteomic labeling strategies and protein profiling with chemical probes. Active site-directed probes targeting enzyme activities in complex proteomes have become an important tools for chemical biology. Hereby also various techniques for the cellular target profiling of small molecules will be discussed.	V1001
12:00-13:30	Lunch	Dining hall, Building K, Level K7
	Combinatorial and High Throughput Technologies	
13:30	Thomas U. Mayer Small Molecule Screening The talk will provide an overview of the spectrum of small molecule screening ranging from in vitro protein-based screens to high-content screens in cells. We will highlight the pros and cons of the different screening strategies and discuss optimal screening conditions using examples of screens performed in the in-house screening facility. A particular focus will be on the challenge of target identification and specificity analyses of identified compounds. If desired, we will have a tour of the screening center.	V1001

15:00	Coffee Break	Foyer, Level V10
15:30	Andreas Marx Combinatorial Protein Design: Screening and Selection This talk will highlight and introduce the most important approaches for evolving improved or new protein functions. Thereby, several screening and selection strategies will be covered.	V1001
19:00	Joint Dinner	Constanzer Wirtshaus, Spanierstrasse 3

Tuesday, 26 September 2017

Time	Programme	Location/Room
	Computational Life Science	
9:00	Kay Diederichs X-Ray Structure Analysis Knowledge of the structures of macromolecules is a prerequisite for understanding their functions and interactions. The talk will present important aspects of the theory and application of X-ray crystallography, the method that contributes about 90% of the macromolecular structures known today.	V1001
9:50	Coffee Break	Foyer, Level V10
10:05	Christine Peter Biomolecular Simulation The talk will provide an introduction into classical molecular dynamics simulations. Such simulations provide a molecular view on biological systems and processes, they can be used to analyse the interplay of different types of relevant interactions, and they serve as a basis for a microscopic mechanistic interpretation of processes such as folding, binding, or aggregation.	V1001
10:55	Coffee Break	Foyer, Level V10
11:10	Michael Berthold Advanced (Life Science) Data Analysis The talk will provide an overview of classic and modern techniques for the analysis of various types of data: molecular databases, images, sequences, and mass spectrometry data. We will show how to process and integrate this type of data using the open source platform KNIME using extensions such as RDKit (chem informatics), SeqAn (NGS), FIJI (images), and OpenMS (mass spec).	V1001
12:00-13:00	Lunch	Dining hall, Building K, Level K7

	Optical Spectoscopy in Life Science	
13:00	Karin Hauser IR-Spectroscopy The course will focus on IR-spectroscopy to study structure, function and dynamics of biomolecules ranging from small peptides to membrane proteins. Practical information (sample forms, sample preparation), various methods (FTIR, ATR, IR-laser spectroscopy) and aspects of data acquisition and analysis will be presented. Examples to study protein reaction mechanisms with time-resolved IR-spectroscopy will be given.	V1001
14:20	Coffee Break	Foyer, Level V10
14:40	Andreas Zumbusch Fluorescence Techniques This part will cover fluorescence techniques. After a short introduction to fluorescence spectroscopy, examples for application of fluorescence detection especially in the microscopy of biological samples will be given.	V1001
17:30	Guided City Tour	Meeting point: Old Harbour Clock, Hafenstraße 6
19:00	Joint Dinner	Tamaras Weinstube, Zollernstrasse 6-8

27 - 29 September 2017

Attendance of the International Symposium on Bioorganic Chemistry (ISBOC-11) held together with the Konstanz Symposium Chemical Biology.