

Elite Study Program in Macromolecular Science

Module

M023 Summer School

of the Graduate School of Science (BIGSS) within the Elite-Network Bavaria

“Lead Structures of Cell Function”

July 24-27, 2011

Universität Bayreuth, Germany



Prof. Paul Rösch (Universität Bayreuth)

PD. Stephan Schwarzinger (Universität Bayreuth)

Summer term 2011

The module consists of two parts:

I. Participation at the Summer School Biological Networks in Health and Disease (July 24-27, 2011) Universität Bayreuth

BIGSS is an Elite graduate school on “Lead Structures of Cell Function” in which students from the Universities of Bayreuth, Würzburg and Erlangen participate. The students in the program have a diverse background in biochemistry, chemistry, medicine and physics. The member departments of BIGSS cover methods and projects along the path of drug development, including:

- ✓ target characterization and gene transcription and signal transduction
- ✓ proteins in viral and bacterial pathogens
- ✓ proteins in cancer cells
- ✓ X-ray crystallography
- ✓ NMR
- ✓ bioinformatics
- ✓ development of animal models
- ✓ pre-clinical research

The summer school is an annual meeting of the BIGSS students and their mentors. In different sessions (Protein Structure, Developmental Biology, Bioinformatics, Virology, Biomaterials and Chemical Biology) the PhD students will present their latest results of their work. Therefore, the summer school is a good way to come in contact with other PhD students and learn more about new techniques that are available at other universities. A second part of the Summer School are introductory lectures and associated practical/demonstration courses on techniques used for biomacromolecule research that are available at different departments at the Universität Bayreuth:

- ✓ NMR spectroscopy
- ✓ protein x-ray crystallography
- ✓ visiting the computer center
- ✓ single-molecule-spectroscopy
- ✓ confocal microscopy
- ✓ mechanical testing of protein fibers

II. Seminar on scientific topics covered by the conference

After the conference students should give a seminar dealing with a topic of the conference. In interdisciplinary groups of two persons, students will prepare the seminar together. The overall time of the seminar including a short discussion should not be longer than 30 minutes. Grades for this module will be based on the seminar presentation.

Further Information:

I. Registration

The conference is free for “Macromolecular Science” students. Students should register as soon as possible by writing an email to: Olivia Spiegelhauer

(Olivia.Spiegelhauer@uni-bayreuth.de) and
 (enb.macromolecularscience@uni-bayreuth.de).

Monika

Birkelbach

IV. Program “Strukturtag Bayreuth”

Time	Sunday 24.07.2011	Monday 25.07.2011	Tuesday 26.07.2011	Wednesday 27.07.2011
8:30-10:00		<i>Developmental Biology</i> Chair: Mahadevan Lakshminarasimhan Johannes Buheitel Franziska Fröb Melanie Küspert	<i>Virology</i> Chair: Berit Leo Katrin Zielke Barbara Zielke Sarah Jill de Jong	<i>Chemical Biology</i> Chair: Philipp Weiglmeier Martin Eberhardt Dietmar Weichert
10:-10:15		Coffee Break	Coffee Break	Coffee Break
10:15-10:45		<i>Introduction:</i> NMR-Spectroscopy	<i>Introduction:</i> Single-Molecule-Spectroscopy	Bayreuther Strukturtag
10:45-11:15		<i>Introduction:</i> Protein Crystallography	<i>Introduction:</i> Confocal Microscopy	
11:30-13:00		Lunch	Lunch	
13:00-14:00	Registration	<i>Introduction:</i> Bioinformatics	<i>Introduction:</i> Mechanical Properties of Protein Fibers	
14:00-17:00	<i>Protein Structure I</i> Chair: Johannes Buheitel Philipp Weiglmeier Daniel Schaal Berit Leo	<i>Practicals/ Demonstrations:</i> NMR-Spectroscopy Protein-Crystallography Tour Rechenzentrum Bayreuth	<i>Practicals/ Demonstrations:</i> Single-Molecule-Spectroscopy Confocal Microscopy Mechanical Testing of Protein fibers	
107:00-17:15	Coffee Break	Coffee Break	Coffee Break	
17:15-18:15	<i>Protein Structure II</i> Chair: Adrian Golser Mahadevan Lakshminarasimhan Giang Nguyen Paul Böhm	<i>Bioinformatics</i> Chair: Giang Nguyen Mikolaj Feliks Kristin Kaßler	<i>Biomaterials</i> Chair: Paul Böhm Adrian Golser Aniela Heidebrecht	
18:15-19:00	Dinner	Dinner	Dinner	