



## GENERAL INFORMATION

### VENUE

Technische Universität Berlin  
TIB 13B-B Lecture hall  
Gustav-Meyer-Allee 25  
13355 Berlin, Germany



### SCHEDULE

Beginning: Monday, 20 July 2015, 1 pm

End: Friday, 24 July 2015, 3 pm

### LANGUAGE

The course will be held in English.

### REGISTRATION

Please complete and return the enclosed form or contact:

DECHEMA-Forschungsinstitut  
Training department  
P.O. Box 17 03 52  
D-60077 Frankfurt am Main

Phone: +49 69 7564 253  
Fax: +49 69 7564 414  
Internet: [www.qbio-summerschool.de](http://www.qbio-summerschool.de)  
E-mail: [gruss@dechema.de](mailto:gruss@dechema.de)

### REGISTRATION FEE

PhD and other students: € 630.-

University: € 750.-

Industry: € 980.-

(incl. course materials, certificate of attendance, lunch, snacks, coffee breaks and VAT)

### DEADLINE

22 June 2015

## ACCOMMODATION

Holiday Inn Berlin-Mitte  
Hochstr. 2 - 3  
13357 Berlin, Germany  
Phone: +49 30 46003777  
E-mail: [reservation@hiberlin.de](mailto:reservation@hiberlin.de)  
Single room: € 64.50 per night (including breakfast)

Please contact the hotel directly to book a room by 30 June 2015 mentioning the code "SSQBIO 2015".

## SUMMER SCHOOL

20 - 24 July 2015  
Berlin / Germany

# Quantitative Biology: Current concepts and tools for strain development

[www.qbio-summerschool.de](http://www.qbio-summerschool.de)



## LECTURERS

### QUANTITATIVE BIOLOGY: CURRENT CONCEPTS AND TOOLS FOR STRAIN DEVELOPMENT

Modern biology and biotechnology follow the chemical, physical and engineering sciences by using quantitative mathematical models for the description of complex cellular behaviors. Concepts from molecular and systems biology, synthetic biology, process engineering, and economy will have to be combined for the development of efficient biotechnological processes. To enable biologists, biotechnologists, and biochemical engineers to pursue this interdisciplinary challenge, it is mandatory to strengthen both the mathematical skills of biologists and the engineers' knowledge of basic biological concepts and nomenclatures.

Thus, the Society for Chemical Engineering and Biotechnology DECHEMA (Frankfurt) and the Innovation Centre Technologies for Health and Food (Berlin) devised a summer school schedule that would allow participants to familiarize themselves with relevant biological concepts from systems and synthetic biology, with mathematical modeling strategies and appropriate technologies and software tools. The summer school addresses both biologists and engineers: Biologists will learn how engineering approaches can help them in planning, performing and evaluating experiments, whereas engineers get insight into state-of-the-art measurement techniques that feed their biological models.

The course consists of formal lectures, workshops and tutorials for hands-on experience with state-of-the-art tools.

The participants are encouraged to bring their laptop computers. They will be informed on the system requirements and provided with respective software to be installed on the laptop PC.

Prof. Dr. Mikael Andersen	DTU Copenhagen
Prof. Dr.-Ing. Lars Blank	RWTH Aachen University
Dr. Lei Mao	HTW Berlin
Dr. Jan Marienhagen	FZ Jülich
Prof. Dr.-Ing. Vera Meyer	TU Berlin
Prof. Dr. Elke Nevoigt	Jacobs University Bremen
Prof. Dr. Marco Oldiges	FZ Jülich
Dr. Arthur Ram	Leiden University
Dr.-Ing. Jochen Schmid	TU München
Prof. Dr. Wilfried Weber	University Freiburg
Dr. Matias Zurbriggen	University Freiburg



## PROGRAMME

### MONDAY, 20 JULY

- » Opening of the summer school (Vera Meyer)
- » Cell factory design and optimization – examples from bacterial and fungal production platforms (Elke Nevoigt, Jan Marienhagen, Vera Meyer)

### TUESDAY, 21 JULY

- » Transcriptomics and Proteomics – Principles, data handling and (joint) comparative profiling (Vera Meyer, Arthur Ram, Lei Mao)
- » Mathematical modelling for Systems Biology (Lei Mao)

### WEDNESDAY, 22 JULY

- » Synthetic Biology – From modular biologic devices to synthetic gene networks for microbial, plant and mammalian systems (Wilfried Weber, Matias Zurbriggen)

### THURSDAY, 23 JULY

- » Metabolomics – From stoichiometric models to metabolic flux analysis (Lars Blank, Marco Oldiges)

### FRIDAY, 24 JULY

- » Integrative bioinformatics for genome-scale multiple level network reconstruction (Mikael Andersen)
- » Microbial strain optimization in the context of bioeconomy (Jochen Schmid)
- » Feedback round and closing of the summer school (Vera Meyer)

### SOCIAL PROGRAMME / EVENINGS

Monday night, a get-together event is planned to facilitate the networking of the participants. There will be ample opportunity to familiarize oneself with the software of interest in the evenings.

(subject to modifications)

**Reply form**

(Fax-No.: +49 69 7564-414)

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**Registration** to the DECHEMA summer school 7158**QBio****"Quantitative Biology"** Berlin, 20-24 July 2015

Deadline for registration: 22 June 2015

**Participant**Ms  Mr  Title \_\_\_\_\_

Name \_\_\_\_\_ Surname \_\_\_\_\_

Company \_\_\_\_\_

Department \_\_\_\_\_

Street/POB \_\_\_\_\_

Code/Place \_\_\_\_\_

Phone/Fax \_\_\_\_\_ E-mail \_\_\_\_\_

Industry  University  PhD Student \* 

\* Please attach proof.

**Invoice address**

Company \_\_\_\_\_

Department \_\_\_\_\_

Street/POB \_\_\_\_\_

Code/Place \_\_\_\_\_

**Method of payment** bank transfer after receipt of invoice by credit card: Mastercard  Visa

Card number \_\_\_\_\_ Expiration date \_\_\_\_\_ / \_\_\_\_\_

The course fee amounts to € 980.- (industry), € 750.- (university), € 630.- (PhD students). If we receive a notice of withdrawal at least two weeks prior to the beginning of the course, the participation fee less 10% for administration expenses will be reimbursed. Thereafter, a reimbursement will not be possible.

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Place, date\_\_\_\_\_  
signature + company stamp