

Konstanz Research  
School Chemical Biology

**Course  
Programme  
2016**







### **How many courses do I have to take?**

4 courses within the first 3 years of your thesis are compulsory. Of these courses, at least 2 have to cover the area “Scientific courses”, one has to cover the area “Transferable skills & Management courses”, and one is free of choice. In addition, the course “Good Scientific Practice“ is compulsory within the first 6 months of your thesis.

### **Areas**

SC – Scientific courses

TM – Transferable skills & Management courses

### **Which courses shall I take?**

This depends on your educational background and your research interests and should be discussed with your thesis committee.

Help and advice: Concerning the Scientific courses please ask your thesis committee members; concerning the Transferable skills & Management courses you are invited to ask the KoRS-CB management.

### **How to register?**

Please enrol by using the link at the end of each course description on the website:

– [chembiol.uni-konstanz.de](https://chembiol.uni-konstanz.de) → Training

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## **Gene Expression & Protein Purification Strategies**

27 January 2016, 10:00–15:00 h

This one day course will treat the following topics within a half-day session per lecturer respectively:

- Introduction into recombinant gene expression
- Diverse expression systems (Bacteria, yeast, Baculo virus)
- Cloning strategies
- Tagging and affinity purification of recombinant proteins

### **Lecturer**

Elke Deuerling, Stefan Kreft,  
Thomas Mayer, Martin Möckel

### **Course Area**

SC

### **Participants**

max. 24

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## **Scientific Presenting**

11–12 February 2016, 9:00–17:00 h

Do you want to have more confidence and impact in your presentations? Do you want to relax and enjoy presenting your research to your team, in department meetings and at conferences? This workshop uses a mix of practical exercises, discussion and video feedback to help you get your message across with confidence and clarity. The workshop is highly appreciated by PhD students in the first phase of their studies.

- Assess your own presentation strengths and weaknesses
- Develop a critical awareness of effective presentation style to give and receive constructive feedback
- Build on and practice the English language of presentation
- Learn strategies for dealing with unexpected or difficult situations
- Design and use PowerPoint slides more effectively
- Develop confidence and enjoyment in public speaking

### **Lecturer**

Millie Baker

### **Course Area**

TM

### **Participants**

max. 10

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## **Project Management** **(with GPM Certification)**

16–17 Feb + 9–10 Mar 2016, 9:00–17:00 h

In companies with a developed project culture, knowledge and experience of project management methods is essential. This project management training makes you familiar with professional project management in research. It demonstrates how to run a scientific project in industry or a research institution, and shows the initial steps how to become project manager and project leader. After all, the training offers the possibility to get a certificate executed by the GPM (member of the International Project Management Association IPMA). The examination will follow approx. one week after the second part of the course.

The course is addressed mainly to PhD students in the second half of their thesis, who want to learn more about project management and/or who want to improve their application forms with an internationally recognized certificate.

### **Lecturer**

Karen Dittmann

### **Course Area**

TM

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Advanced Bioimaging**

7– 8 March 2016, 9:00 –18:00 h

This two day course will introduce the following topics by lectures, demonstrations, and practical microscope sessions employing diverse biological samples:

- Fluorescence correlation spectroscopy (FCS)
- Fluorescence resonance energy transfer (FRET)
- Fluorescence lifetime imaging (FLIM)
- Non-linear microscopy

### **Lecturer**

Andreas Zumbusch , Martin Winterhalder, Franziska Doll, Annette Buntz, Britta Kerndl

### **Course Area**

SC

### **Participants**

max. 9

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## **Leadership for Future Leaders**

15 –16 March 2016, 9:00 –17:00 h

This two day module provides a general insight into actual leadership tools. The theoretical aspects of leadership are combined with case studies. The course helps avoiding typical mistakes in leadership situations and gives you an overview on situations, instruments and personal factors to successfully lead co-workers.

Your questions are highly appreciated and will enhance the course. The course is recommended in the second phase of your studies.

### **Lecturer**

Andreas Ploch

### **Course Area**

TM

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Career Orientation and Application Training**

17–18 March 2016, 9:00–17:00 h

This workshop helps to find the personal motivation for the future career and shows different options, so called career paths. The first step is to find “the right company”, the second step is to get “the right job”. Important questions are: What exactly is my motivation? Where are my strengths and weaknesses? What “plan” do I have for my career?

Following this, the job application training helps from the very first steps of an application process: How do I write a “good” application, a “good” CV? What is important in an interview session? What to do in an assessment-centre? Online application tools and questionnaires are also subject of this course.

### **Lecturer**

Andreas Ploch

### **Course Area**

TM

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## **Data Analysis**

6 – 8 April 2016, 9:00 – 17:00 h

The Data Analysis workshop focuses on data handling and implementing statistics in R using relevant examples from the life sciences. R, an open-source cross-platform software tool, has quickly become a standard tool for data analysis in many scientific disciplines. Using plenty of hands-on exercises, you will learn about different data structures and functions in R, how to manage and ask specific questions of your data, and use the results of statistical tests. R-specific functions for easy data manipulation and reproducible research will also be introduced.

Participants should be comfortable with computing and be familiar with basic biostatistics. Previous programming experience is not necessary. Participants are asked to bring in their own data sets and computers for practical work.

### **Lecturer**

Rick Scavetta

### **Course Area**

TM

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Flow Cytometry and Cell Sorting**

13 –15 July 2016, 9:00–17:00 h

This course will provide theoretical and practical information on flow cytometry and fluorescence activated cell sorting and can be attended by students with no previous experience in flow cytometry. However, the students should have a strong interest in flow cytometry and preferably, the technique should be applicable in their respective scientific projects. In the mornings, the participants will learn about the principles of flow cytometry, the property of fluorophores, and possible applications. The Cellquest™ and FACSDiva™ software as well as FACSCalibur, LSRII, LSRFortessa and FACS Aria instruments will be introduced. In the afternoons, every participant will perform experiments in the laboratory.

### **Lecturer**

Stefanie Bürger, Florian Rohrbach, Uwe Speck,  
Karsten Strauß

### **Course Area**

SC

### **Participants**

max. 9

### **Registration**

via e-mail (incl. a statement of motivation)  
to chembiol@uni.kn

In cooperation with



## Practical Screening Data Analysis

14–15 July 2016, 9:00–17:00 h

We will introduce KNIME, an open source data analytics framework together with extensions that allow to process screening data, such as activity information or cell assay images. The course consists of lectures with extensive hands-on sessions. After successful attendance participants should be able to use KNIME to process and analyse their own data independently.

The course is designed as a “hands-on” course. Participants are therefore encouraged to bring their own data.

### Lecturer

Michael Berthold

### Course Area

SC

### Participants

max. 12

### Registration

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## **Information Literacy**

18 –19 July 2016, 9:00 –12:00 h

How to perform research in literature databases? What to consider when formulating the query? How to improve literature research and what options are offered by the library of the University of Konstanz?

This course will teach the fundamental concepts and skills. It is addressed to life scientists who want to improve their document searching strategies in literature databases.

### **Lecturer**

Monika May

### **Course Area**

SC

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)



## How to Publish in Peer-Reviewed Journals

20 – 22 July 2016, 9:00 – 18:00 h

This course provides a hands-on approach to writing a paper for an international peer-reviewed journal. It introduces you to all steps involved in successfully preparing, writing, editing, and submitting your paper. In numerous exercises, you draft individual sections of your manuscript, and you are given concrete advice on how to overcome the various hurdles involved in the writing and [peer-review](#) process. You receive answers to your individual questions and get clear instructions on how to complete and submit your manuscript after the course. For this course, participants should be in the process of preparing, writing or revising a manuscript to be submitted to an international peer-reviewed journal.

### Lecturer

Gunther Tress

### Course Area

TM

### Participants

max. 12

### Registration

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Bioimaging**

20 – 22 July 2016 , 9:00 – 18:00 h

This three day course will cover the following themes by lectures, demonstrations, and hands-on:

- Wild-field fluorescence imaging
- Laser scan confocal microscopy (Point scanning and spinning disk)
- Total-internal-reflection microscopy (TIRF)
- Image analysis

A basic knowledge of microscopy techniques is of advantage but not a prerequisite.

### **Lecturer**

Elisa May, Daniela Rothöhler

### **Course Area**

SC

### **Participants**

max. 9

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

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## **Intercultural Communication**

21–22 September 2016, 9:00–18:00 h

You will present your results at international conferences?  
You are aiming at international networking partners?  
This two day practice- and applications-oriented workshop is designed to enable doctoral students to develop key skills in accurately identifying and dealing with typical scenarios in cross-cultural academic work interaction. Drawing on authentic complex case studies, it provides a balance of conceptual frame-working and structure to create step-by-step diagnostic tools to define culture-appropriate strategies. The workshop is highly recommended for both German and international students, preferably in the first phase of their PhD studies.

### **Lecturer**

Alexia Petersen

### **Course Area**

TM

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Proteomics**

23, 26, 27 September 2016, 9:00–17:00 h

This three day course comprises morning lectures and hands-on experiences in the afternoon, hereby treating the following topics:

- General intro (proteomics workflow, mass spectrometers, ESI-/MALDI-ionisation, mass analyzers)
- ESI-MS and MALDI-MS practice
- Sample preparation – theory and practice
- LC-MS and fragmentation techniques – theory and practice
- Special applications (SILAC, ICAT, protein quantification)

This course is addressed to students who want to learn basics and applications of mass spectrometry of proteins and protein mixtures

### **Lecturer**

Andreas Marquardt

### **Course Area**

SC

### **Participants**

max. 10

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Protein Folding**

5 – 6 October 2016, 9:00 – 17:00 h

This two day course provides theoretical and practical insights into protein folding. The sessions will cover the following topics:

- Protein folding problem
- Energy landscape theory
- Unfolding/refolding of proteins
- Chevron plot analysis
- Monitoring protein folding of a model protein directly in the lab
- Fluorescence stopped-flow spectroscopy
- Kinetic vs. equilibrium studies

This course is recommended to students with a PhD project in structural biology or biophysics or an interest or cooperation intent in biophysical and/or kinetical research questions.

### **Lecturer**

Michael Kovermann

### **Course Area**

SC

### **Participants**

max. 12

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Determination of Macromolecular Structures**

10–12 October 2016, 9:00–17:00 h

This course will provide theoretical and practical information on structure determination of biomacromolecules by X-ray crystallography and NMR spectroscopy. The sessions will cover the following topics:

- Diffraction theory
- Structure solution methods
- How to judge structural information
- Practical X-ray structure solution and model building
- NMR building blocks for data acquisition
- Structure calculation using NMR restraints

This course is recommended to students with a PhD project in structural biology or an interest or cooperation intent in structural-biological research questions.

### **Lecturer**

Kay Diederichs, Michael Kovermann

### **Course Area**

SC

### **Participants**

max. 15

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **MATLAB**

### Online

MATLAB is a high-level language and interactive environment for numerical computation, visualisation, and programming. Using MATLAB, you can analyse data, develop algorithms, and create models and applications. The “self-paced” online courses are available for 90 days and cover the topics to the same extent than an on-site training. Since there will be no course confirmation the online courses cannot be considered as equal to the graduate school’s courses.

3 self-paced training-courses are available:

- Basics
- Programming
- Data Processing and Visualisation

### **Dates**

1 February – 30 April

1 August – 31 October

### **Software Download**

– [rz.uni-konstanz.de](http://rz.uni-konstanz.de)

### **Registration**

– [chembiol.uni-konstanz.de](http://chembiol.uni-konstanz.de)

## **Good Scientific Practice**

### Online

How should research results be documented? What is the right way to cite? How does one handle image sources? This course provides a review of additional topics regarding doctoral work: how to wisely plan and organize the research project and which legal aspects, such as in labour law or copyright law, are relevant for doctoral students.

Within five modules comprehensive is provided. The course will be completed by a test to check the knowledge gained. At the end, you will receive a certificate.

This course is obligatory for every KoRS-CB fellow who started after 1 January 2016 and will not be considered as equal to one of the four obligatory courses (see page 4). You will receive your licence key unasked within the first months. Additionally, interested KoRS-CB students can take the course voluntarily.

### **Registration**

via e-mail to [chembiol@uni-konstanz.de](mailto:chembiol@uni-konstanz.de)

## Further workshops and training

Questions regarding cost takeover by KoRS-CB as well as equivalence to the KoRS-CB course programme please address to the KoRS-CB office.

Academic Staff Development

– [asd.uni-konstanz.de](https://www.asd.uni-konstanz.de)

Career Service

– [career-service.uni-konstanz.de](https://www.career-service.uni-konstanz.de)

Research Support Office

– [forschungssupport.uni-konstanz.de](https://www.forschungssupport.uni-konstanz.de)

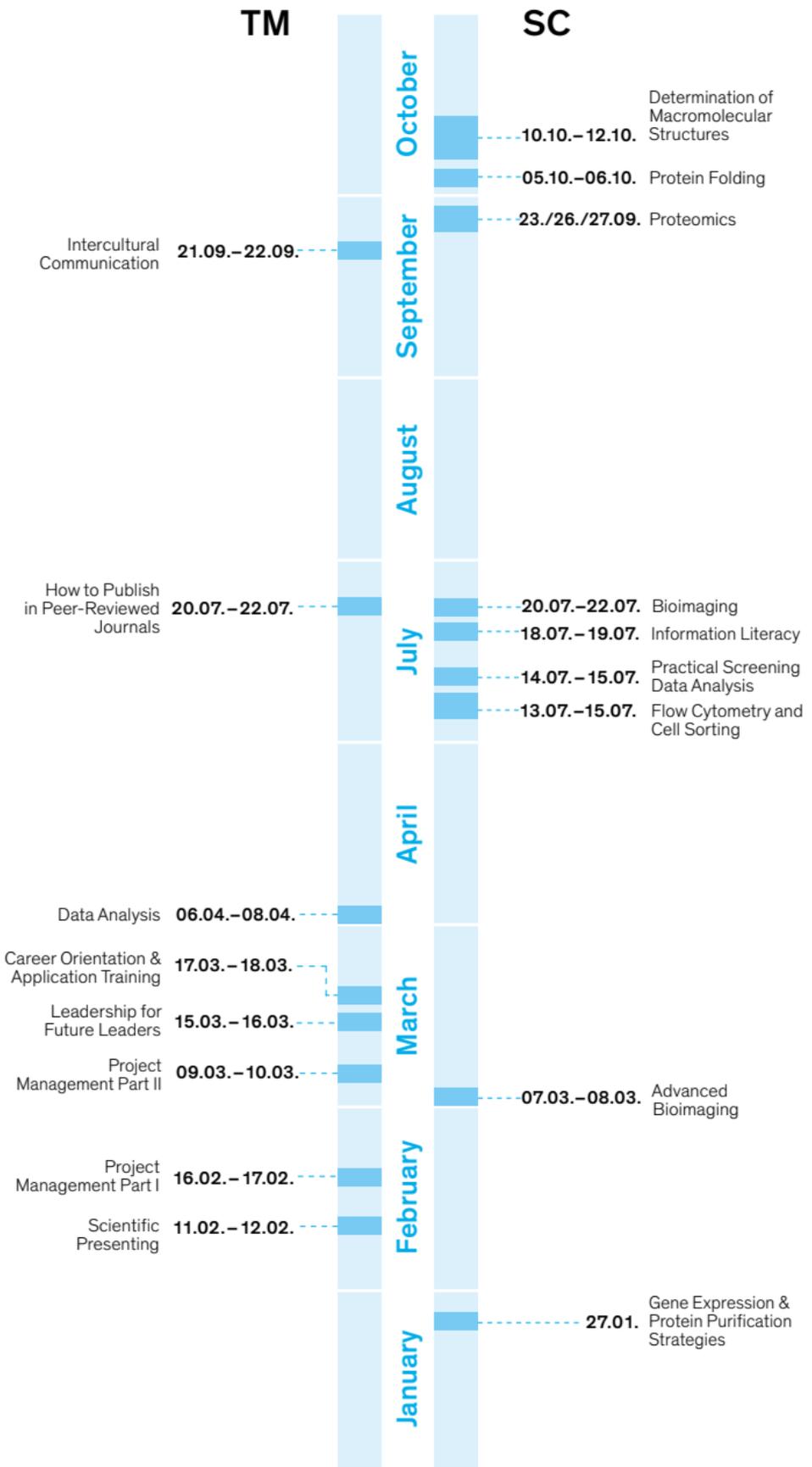
Hochschul Didaktik Zentrum der Universitäten

Baden-Württemberg

– [hochschuldidaktik.uni-konstanz.de](https://www.hochschuldidaktik.uni-konstanz.de)

MuT – Mentoring und Training

– [lakog.uni-stuttgart.de](https://www.lakog.uni-stuttgart.de)







## **Contact**

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