

Workshop New Approaches in Infection Biology

October 23rd- Professor Dr. Dandekar

Bioinformatics

Location: Seminar room of biochemistry B108/109

You find that easily, if you start in the main hall or Foyer of the Biocentre of the University of Würzburg

http://www.biozentrum2.uni-wuerzburg.de/en/solala/contact/how_to_get_to_biocenter/

If you have the lecture theatres A101 (big one) and A102 (medium one) in your back, you just turn right, go up the stairs to biochemistry and follow the signs (“workshop, new approaches in infection biology), then you reach the seminar room in B-section of the building, room B108/109.

Begin: 9:00

Equipment: notebooks – these are provided (CIP pool and our seminar room is already used by courses, e.g. F2 Bioinformatics and scientific training for the biology teacher students)

Introduction: *Systems biology of infection – bioinformatical approaches*
Prof. Thomas Dandekar 9:00-10:00

Part I Genome analysis and annotation 10-11:00
Prof. Thomas Dandekar (basics and challenges of sequence analysis;
Annotation and pathway alignment; Comparative genomics)

Part II Databanks and Ressources 11-12:30
Dr. Chunguang Liang (Protecs database
EcoliHub / MetaCyc, COGs etc.)

Lunch break 12:30-13:30

Part III Modelling metabolic networks 13:30-15:00
Astrid Fiesemann (how to do elementary mode analysis;
simple examples on Staphylococci from own research)

Coffee break 15:00-15:30

Part IV Signalling in infectious biology 15:30-17:00
Dr. Muhammad Naseem (using Squad, gene expression data, semi-quantitative
models)

Part V Current trends in systems biology in infectious biology
Prof. Thomas Dandekar 17:00-18:00
(we will show and discuss current trends in systems biology with a focus on
computer-based approaches, what they can and what they can not elucidate)

Workshop New Approaches in Infection Biology

October 24th- Dr. Susanne Kramer

Trypanosomes

Location: Seminar room of biochemistry, B108/109

Begin: 9:00

The African trypanosome: a killer and a survival genius

This course will introduce you to the unusual biology of the African trypanosome.

You will explore three features that largely contribute to the parasites pathogenity (antigenic variation, antibody clearance, resistance to the trypanolytic factor) in teams and you will present your results in a rather non-conventional way (by pantomine).

9:00-9:45 Introduction lecture to Trypanosomes

9:45-10:30 Movie (African sleeping sickness)

10:30-11:00 Coffee break

11:00-12:30 Reading time / research time for pantomine

12:30-13:30 lunch break

13:30-14:30 Current Research in Würzburg trypanosome labs: PhD students report

14:30-16:30 Team discussions, preparing the pantomine (Coffee break in between)

16:30-17:30 Pantomine

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October 25th- Dr. Martin Fraunholz

Staphylococci

Location: Lecture Seminar room of biochemistry, B108/109

Lab Department of Microbiology, Room C235

- Introduction
 - Phagosomal escape of *Staphylococcus aureus*
 - Principles of Confocal Laser Scanning Microscopy
- Image analysis of fluorescent micrographs and other imaging data using ImageJ/Fiji
 - images: visualization and manipulation (Background subtraction, Brightness & Contrast)
 - particle counting
 - multi-dimensional images
 - Images stacks and stack manipulation (Aligning stacks slices, measuring intensities over time)
 - Image Montages
- Experimental part: Phagosomal escape of *S. aureus* (on a Leica TCS SP5, Room C235; smaller groups)

Students can bring their own laptops and do image analysis with their own data as well.

Workshop New Approaches in In

October 26th- PD Dr. P

Plasmodia

Lifecycle stages, Screening, Ther

MeetingPoint:

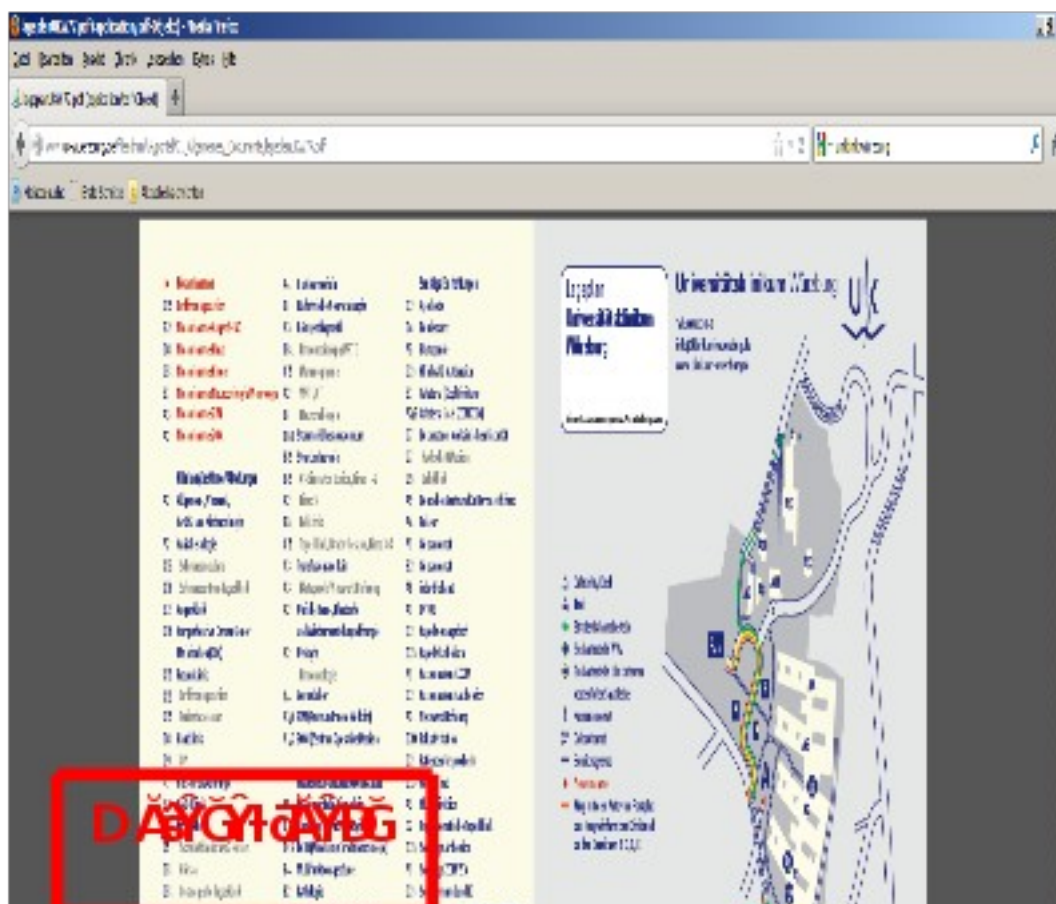
Research Center for Infectious Diseases / Zentrum für Infektionsforschung

First Floor: Seminar room D15.01.002-004

Josef-Schneider-Str. 2 / Building D15

97080 Würzburg

Tel.: 0931-3182133



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Material:

If you own one, please bring your own lab coat!

Timeschedule:

9:00-10:00	PD Dr. G. Pradel: Introduction on Malaria
10:00-10:30	Dr. Matthias Scheuermayer: Overview and description of lab assignm
10:35-11:05 11:10-11:50	Lab work: Rotation in groups of 5 throu station approximately 30 minutes)
11:50-13:00	Lunch break
13:00-13:30 13:35-14:05 14:10-14:40	Lab work: Rotation in groups of 5 throu station approximately 30 minutes)
15:00-15:30	Concluding remarks

Topics:

Station 1: PD Dr. Gabriele Pradel

Confocal laser scanning microscopy: Imaging targets of transmission blocking vaccines.

Station 2: Ludmilla Sologub

Giemsa staining: Identifying *P. falciparum* blood stages in blood smears.

Station 3: Dr. Matthias Scheuermayer

Insectary: Dissecting *Anopheles stephensi* mosquitoes.

Station 4: Selina Kern

Malstat assay: Screening drugs in the *P. falciparum* blood stages.

Station 5: Andreas von Bohl

Exflagellation inhibition assay: Evaluating the effect of drugs on gametogenesis.