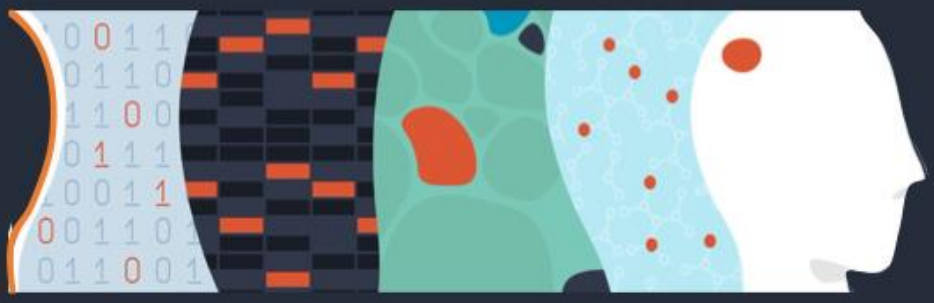
DQBM Retreat



WORKSHOP PROGRAMME

This booklet contains a short description of the workshops that you can sign up for. Participating in workshops is not mandatory, we are going to run a networking session (9:00-11:45) parallel to the workshops for those who are not attending workshops. There are limited places available for each workshop. Everyone can only sign up for one workshop. Workshop places are going to be assigned on a first-come first served basis. Please sign up for the workshop of your preference until 14th June using the following link:
https://forms.gle/4Z2i21m79f4Aqynh7

Workshop session 1: 9.00-10.15

Virtual Reality for Deep Learning

By Rami Al-Maskari (Menze Lab)

Deep Learning usually relies on annotated samples for training a model. In case your data is volumetric, shows novel behaviour or your biological model has not studied before in this context, it can be very hard to generate ground truth data for training and testing. This is where VR steps into the game: Here, you see your data as a whole and gain crucial spatial insights. From simple blob-like cell bodies to peripheral neurons spanning the whole body, you can annotate everything up to 15 times faster and analyze complex structures with ease!

Who is the workshop for?

- Biologists who work with volumetric datasets
- Deep Learning scientists looking for new annotated data
- People who never wore a VR headset but would really like to :wink:

What will be covered during the workshop?

- Basic principles of supervised learning
- Use cases of VR annotation
- Best practices of VR annotation
- Practical part - dive into VR yourself!

What to bring?

- Curiosity

Maximum number of participants:

- 16

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WORKSHOP PROGRAMME

Workshop session 2: 9.00-10.15

Introduction to microscopy

By Pierre De Rossi and Laura de Vos

It happened to all of us, we have a nice experiment finished and we want to image it, but which microscope should I use? At the ZMB alone, more than six imaging techniques are available with more than 36 different microscopes. Imaging techniques are evolving constantly, and the amount of imaging tools can be overwhelming. This workshop will not make you expert in microscopy, but we want to give you some tools in order to choose the best imaging technique for your scientific question.

Who is the workshop for?

- People planning to use imaging in their research
- No prior experience is required, in microscopy or image analysis
- People who are curious about new imaging techniques
- People who like beautiful and colorful pictures

What will be covered?

- Fundamentals of different imaging techniques
- Which one for what
- Type of data and analyses possible
- Pro and cons of each technique

What to bring?

- Your favorite microscope
- Your positive attitude

All the slides will be available, so you can take notes if you want, but we want this workshop to be interactive.

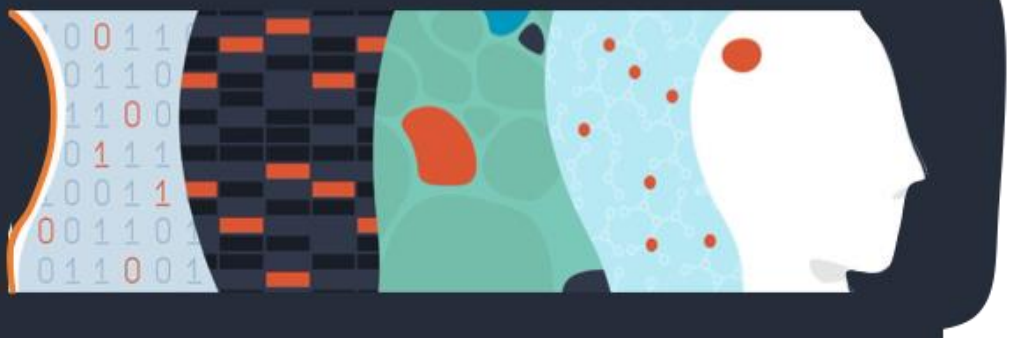
Maximum number of participants:

- 20

Note to participants: We are not expert in Physics nor Optics, and we can only speak from experience for most of the topics and to answer your questions. We welcome anyone who might have more experience or different takes to interact during the workshop, so everyone can benefit the most.

COFFEE BREAK
10.15-10.30

DQBM Retreat



WORKSHOP PROGRAMME

Workshop session 3: 10.30-11.45

Tips and tricks for data analysis in R

By Nils Eling

R is commonly used in Bioinformatics and Biostatistics. While it is a language that is easy to get started with, it is easy to run into complications. In this workshop, you will learn common pitfalls and recommendations for data analysis in R.

Who is the workshop for?

The workshop is aimed at beginners but **slight familiarity with R** is recommended.
An introduction to data analysis in R can be found on the DQBM intranet.
(https://uzh.sharepoint.com/:f:/r/sites/DQBMIntranet524/Shared%20Documents/General/All%20things%20computational/2020%20Introduction%20to%20Data%20Analysis/R?csf=1&web=1&e=hjXCdd).

What will be covered?

We will cover a wide range of topics including coding style, tidy data, efficient computations/parallelisation and an introduction to "object oriented" programming.

What to bring?

- your laptop
- make sure that you have R and RStudio installed

The scripts/package installation instructions will be distributed before the workshop.

Maximum number of participants:

- 20

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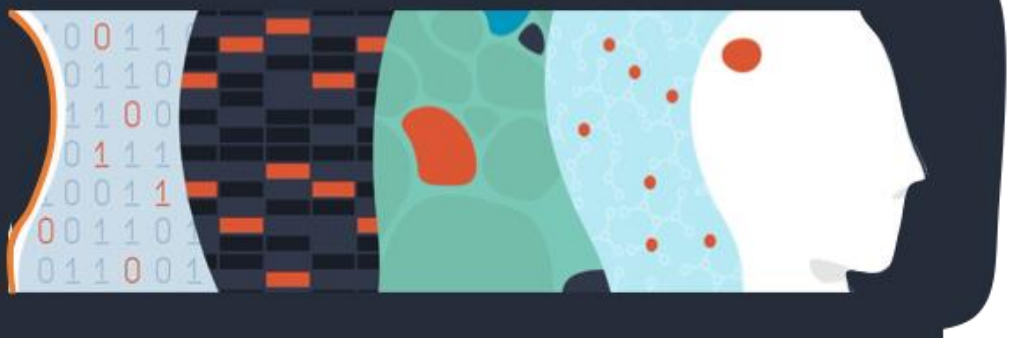

WORKSHOP PROGRAMME

Workshop session 4: 10.30-11.45

Introduction to the terminal for Biologists
By Zsolt Balázs

Have you ever wanted to try out some "simple" bioinformatics program that you found in some paper but were lost as to how to begin? Have you had several attempts at programming but were lacking the skills to apply your fledging programming skills to your data? After attending this workshop you will probably still not be ready tackle tougher issues such as these, but you will get an introduction to the using the terminal (maybe you think of it as command line) which is the entry threshold into doing Bioinformatics.

Who is the workshop for?

- people who have never or only rarely used the terminal but would like to learn it
- no programming experience is needed, but only those profit from the course who also want to do some kind of training (e.g. online-courses) into bioinformatics afterwards

What will be covered during the workshop?

How to navigate with the terminal on a UNIX system

- Basic UNIX commands
- How to read / search in and edit text files
- An example of applying these skills

What to bring?

- a laptop on which you can install software
- the charger of said laptop

Preinstallation of any software is not necessary if your laptop has a Windows 10, Windows 11, MacOS (any version) or Linux (any distribution) operating system.

Maximum number of participants:

- 12

Thank you for your interest.
We are looking forward to seeing you soon.