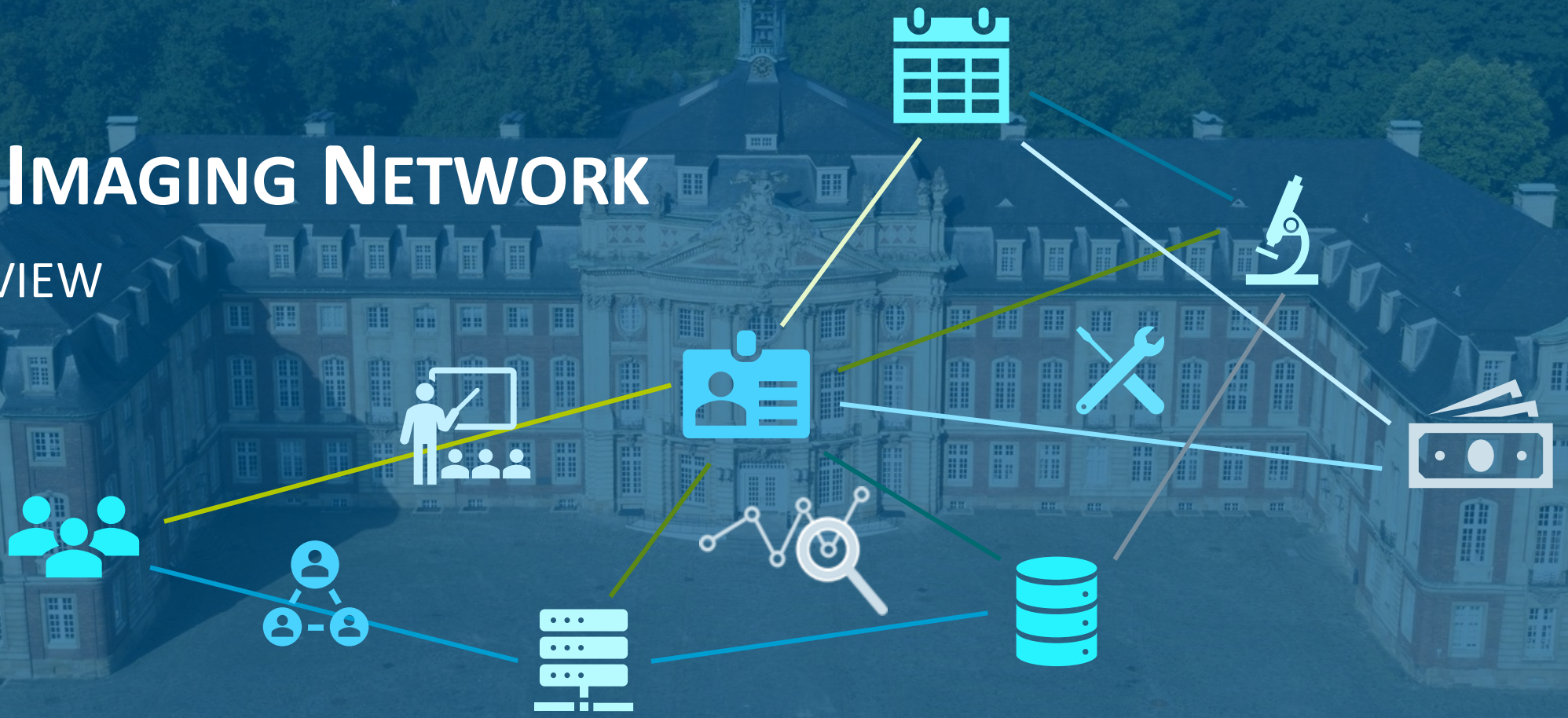
Universität Münster

Cells in Motion Interfaculty Centre

Münster Imaging Network

Münster Imaging Network

Service Overview



living.knowledge

TEAM

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Application specialist /
Image Analysis /
RDM

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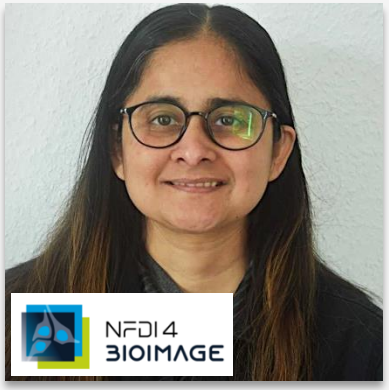

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Münster Imaging Network – Service Overview

Microscope Booking

> 80 Groups / > 700 Users

Microscopes

> 55 Microscopes

Data Storage & OMERO

Free data storage, Cloud integrated, > 50TB managed data

The HIVE & JupyterHub

Analysis Server

Additional Services

Seminar series, Analysis courses, Project discussions..

Our website:
go.uni-muenster.de/imagingnetwork

Learn about microscopes, image analysis and computing resources: **Confluence Wiki**

Need help? **Support via Mattermost**

imaging@uni-muenster.de

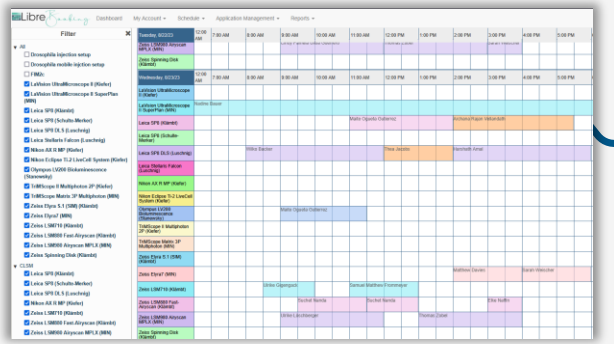
Reach our **Team**

Microscope Booking

Microscopes within the Münster Imaging Network can be independently booked via the Central Booking Schedule

> 80 Groups / > 700 Users

> 60 Microscopes



45.000 h booked in 2024

Bookings by external users are reviewed twice a year by the Münster Imaging Network

Working Groups are structured in three sections: Admins, Main and External Users

Microscopy usage funding is available for both listed and individually operated microscopes.

Refer to the Münster Imaging Network and state the following DFG registration number: RI_00497
Need more info? ⇨ Funding Advice

Central Booking Schedule:
booking-imaging.uni-muenster.de

Check these documents before booking:
Guidelines and **Fees**

Want to know how to create a booking?
Visit the **Wiki**

More questions regarding booking?
Visit the **FAQ**

Group Management

For each working group with own microscopes, **three different subgroups** are created in the booking system:

1. **Admin Group**
   - Users with administrative rights
   - Unpersonal accounts for admin tasks

Admins are the contact persons for the Münster Imaging Network

2. **Main Group**
   - All users of your group
   - Admins can add users to this group

Every user must be in and can only belong to **one** Main Group

3. **External Group / External users**
   → **Users who get accounted!**

Users who are in a **different** Main group but still want to use your microscope

Funding

Microscopes booked via the Central Booking Schedule are eligible for usage funding, including those operated by individual working groups.

Imaging costs are additional funds and do not belong to other consumable funds.

For Applications:
Please refer to the **Münster Imaging Network** and state the following DFG registration number: **RI_00497**

Example:
*The proposed project requires extensive imaging work, which will be performed on microscopes run by the **Münster Imaging Network (DFG Research Infrastructure RI_00497)**.*
The scientists working on the project will use several TIRF microscopes with 300 h/year. Given the cost of 20 €/h for a TIRF system this amounts to 6000 €. We request half of the costs with 3000 €/year.

MICROSCOPES

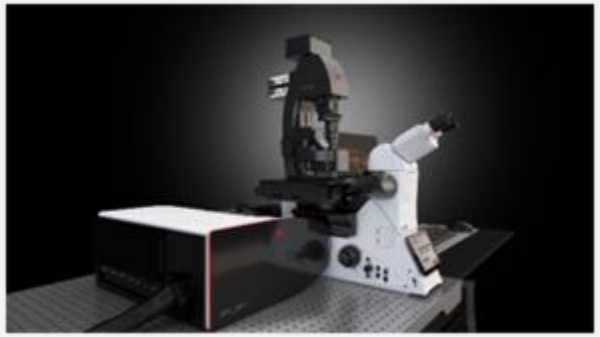
A list of all microscopes available for booking through the MÜNSTER IMAGING NETWORK can be found at the following links:

- All microscopes sorted by location and technique
- All microscopes with detailed configuration and features in a searchable list
- In the section *Microscope Booking* you will find information on how to add a microscope to the MIN and how to apply for funds for usage!

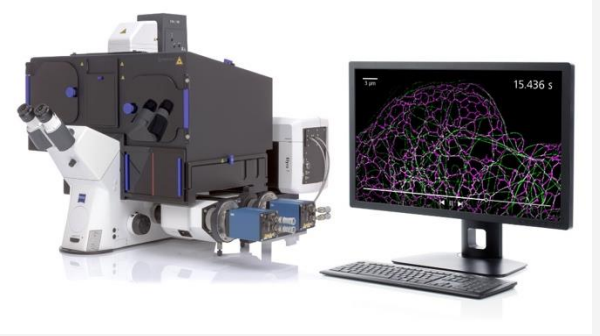
Over **60** different microscopes are available within the **MÜNSTER IMAGING NETWORK**

Techiques:
TIRF – FLIM – FRAP – FRET – DCV
HCS – Lightsheet – SMLM
Spinnig Disc – SIM
2-Photon – Super-Resolution
..and many more!

Zeiss LSM980 Fast AiryScan2



Leica Stellaris 8 Falcon



Zeiss ELYRA 7

.. and many more!

DATA STORAGE & OMERO

The **MÜNSTER IMAGING NETWORK** provides three different storage solutions in cooperation with the University IT. All services are **free of charge**.

OMERO

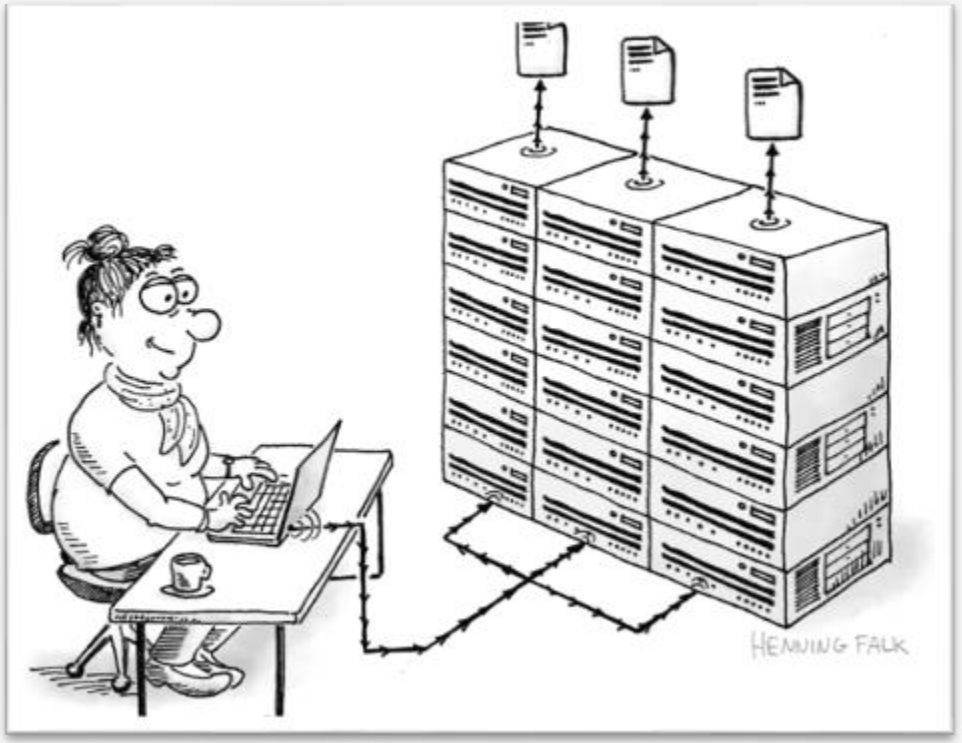
OMERO is a platform for **long-term storage** of microscopy data, offering various **other useful functions**. It supports FAIR principles and complies with DFG data handling guidelines.

The HIVE

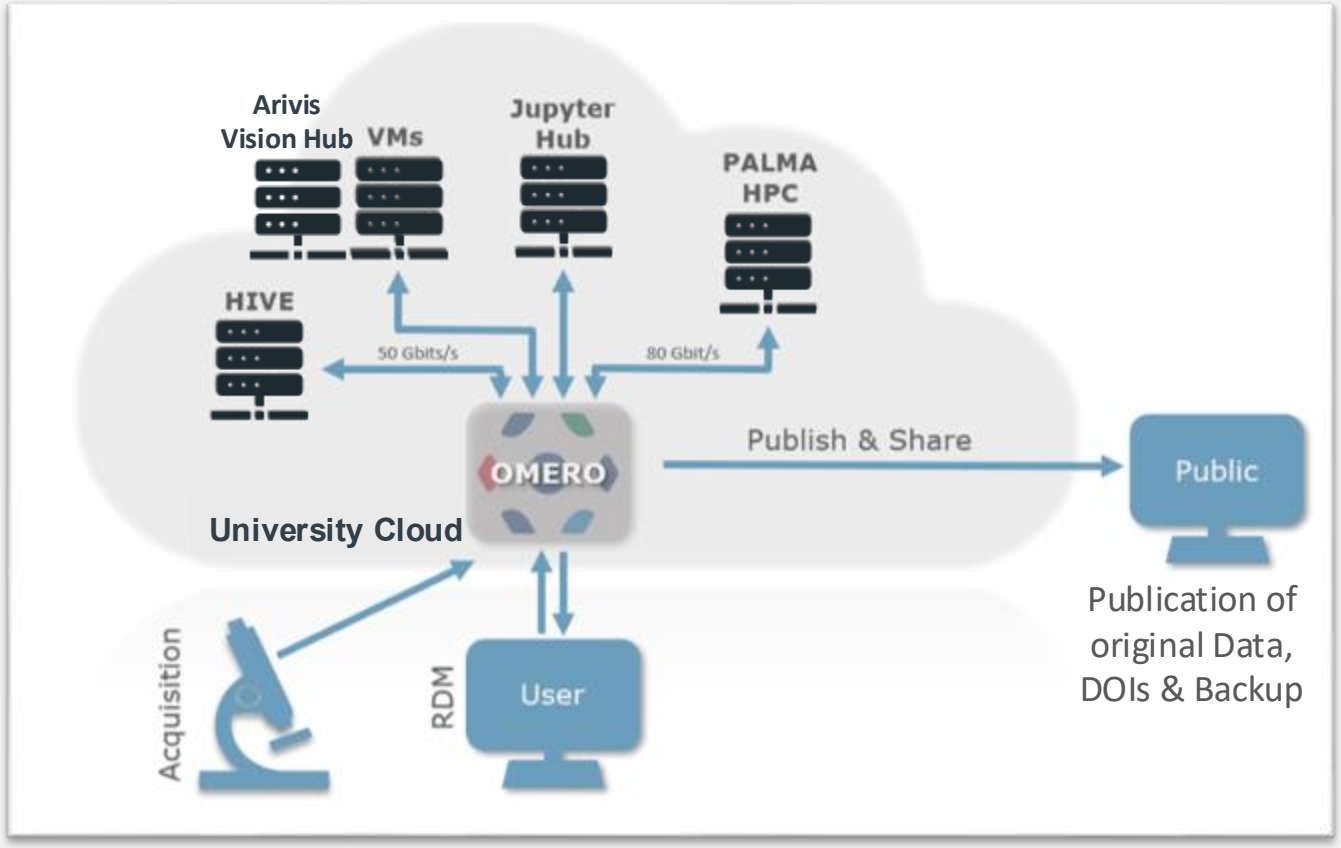
The HIVE is the **analysis server** of the MÜNSTER IMAGING NETWORK for temporary data storage during analysis and fast access. It is **not** meant for long-term storage or backup.

Storage in the University Cloud

The University IT provides cloud storage. The MÜNSTER IMAGING NETWORK can help set up a network drive for your group.



OMERO - INFRASTRUCTURE



OMERO is **fully integrated** into the University Cloud, allowing direct use of your data across cloud services — **no copying or duplication** needed!

- Login to the OMERO Webserver
- More info: OMERO
- Subscribe to the OMERO Mattermost channel
- Learn more: The HIVE
- Learn how to apply for University cloud storage: Network drive of the University IT (Wiki)

Need help with storage or OMERO?
Contact us!

OMERO Mattermost channel

OMERO – Tools & Functions

OMERO provides various useful functions:

- Unique image ID for each image (link to images from PowerPoint, ELNs etc.)
- OMERO.figure: fast and easy figure creation
- OMERO.parade: inspect measurements of your data
- OMERO.Openlink: create download links to share your data
- Tag Search/Key-Value Pairs: add Metadata to your images
- OMERO interacts with Fiji / Matlab / R / Python…
- Publishing with DOIs (in progress)

OMERO at Münster Imaging Network

70 Groups
1000 Users
50 TB of Data
Active Directory / LDAP Server in OpenStack

THE HIVE

High-end analysis server based on Windows Server 2019

Available to all users via remote desktop – also from home via VPN

Centrally connected to the University Cloud
☞ **extra fast connection** to your data in the University Cloud and OMERO

Specifications:

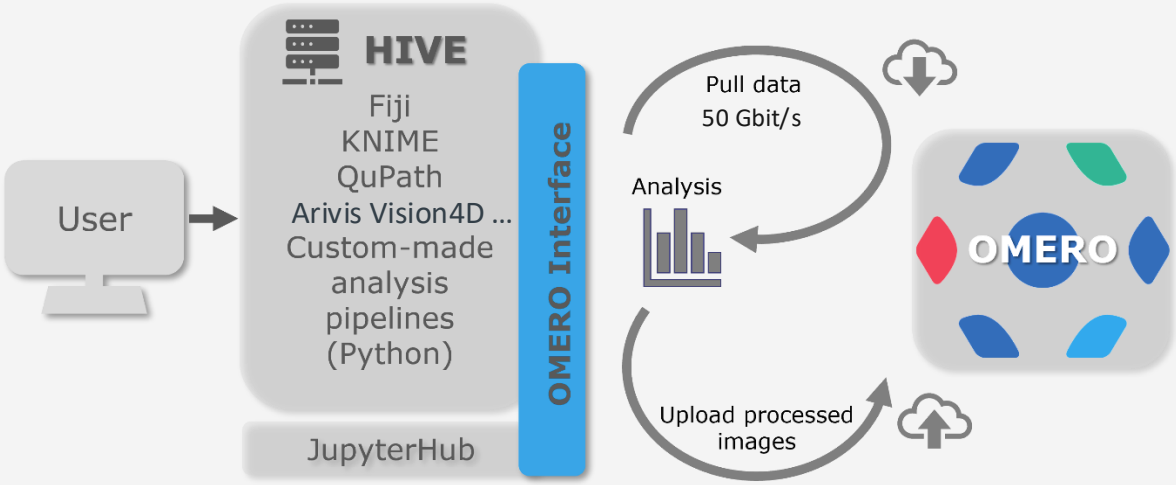
CPU:	**256 Cores** (AMD EPYC 7702)
RAM:	**1024 GB**
GPU:	**Quattro RTX 8000 42GB**
Storage:	**12 TB SSD RAID**
	2 TB M2 SSD with 3200MB/s
OS:	Windows Server 2019

Software:
Fiji / ImageJ / CellProfiler / ilastik / Knime / Zen / LASX / Huygens Professional / Deep Learning Tools / Python / Arivis Vision4D / …

Learn more about the HIVE in our Wiki

More questions?
Visit the HIVE FAQ or the Software Wiki

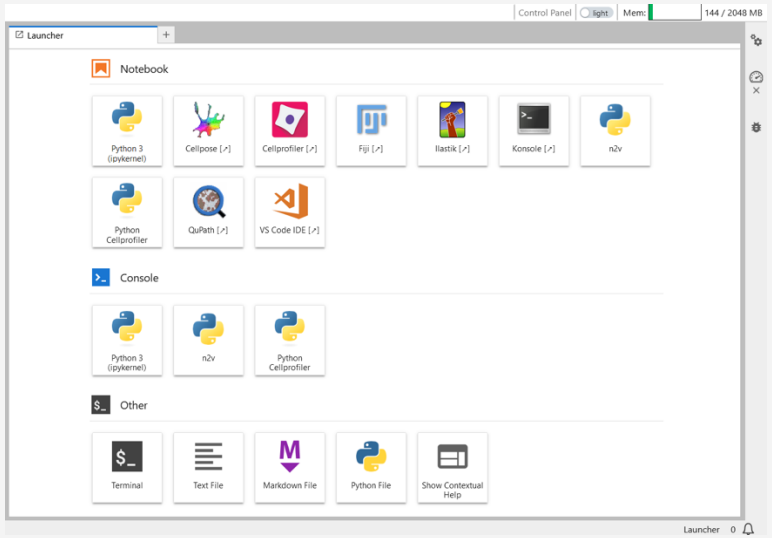
..or contact us Mattermost



jupyterhub

jupyterhub.uni-muenster.de

enables access to a shared, pre-configured environment for data analysis and programming directly in your browser – no installation required



vCPU

2.0 - 16.0

The lower value is the amount of guaranteed CPU resources. The upper value specifies the CPU limit. Please be considerate.

Memory

8 GiB - 16 GiB

The lower value is the amount of guaranteed memory. The upper value specifies the memory limit. Please be considerate.

vGPU (experimental)

NVIDIA A40, 12GB RAM, Compute 8.6

Select your graphics device depending on your demands. Tesla M10 is primarily used for data visualization. Tesla T4 is primarily used for CUDA. A40 is primarily used for high performance CUDA.

Notebook Image

○	**eScience** Python, R, C++, MatLab, Mathematica, SageMath, Octave, Voreen, ParaView	v3.3.0
○	**Software Development** Python, C++, Go, Rust	v3.3.0
◉	**Bioimage Analysis** Python environment for Image Analysis, CellProfiler, Cellpose, Fiji, Ilastik, QuPath	latest
○	**Custom Notebook Image** You can specify any image to be loaded by JupyterHub. Images run under user "jovyan" with user id 1000. Due to security reasons: (1) You have no access to the /palma or /cloud directories from custom images. (2) Your home directory is different from normal images and cannot be accessed externally. (3) vGPUs are not supported.	

Additional Services

Image analysis courses

- Basics of Image Analysis
- Macro programming for Fiji/ImageJ
- Advanced Image Analysis (ilastik, Cellprofiler, Huygens DCV, Imaris…)

Individual support for your project

We offer expert support in image analysis, project discussions, and method development. Feel free to approach us for tailored assistance with your individual projects.

Microscopy seminar series

10 lectures about microscopy – basics to advanced techniques like FRAP, FLIM, Super-Resolution and more

Ready for publication? We support you!

- upload and provide raw data
- convert data into suitable formats
- enrich metadata
- include funding IDs and other project-specific details
- guidance with publishing datasets in public repositories (IDR, BIA, OMERO)

Maintenance Support

System documentation for admins within the Wiki