



NFDI4  
BIOIMAGE

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# NFDI4BIOIMAGE

## A consortium of the National Research Data Infrastructure (NFDI)

Research Data Management for Microscopy and Image Analysis

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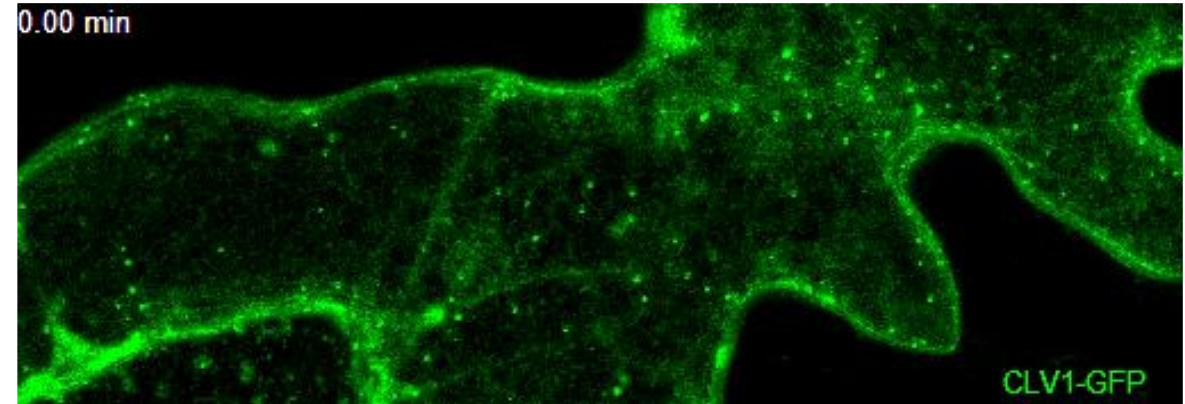


10/04/24

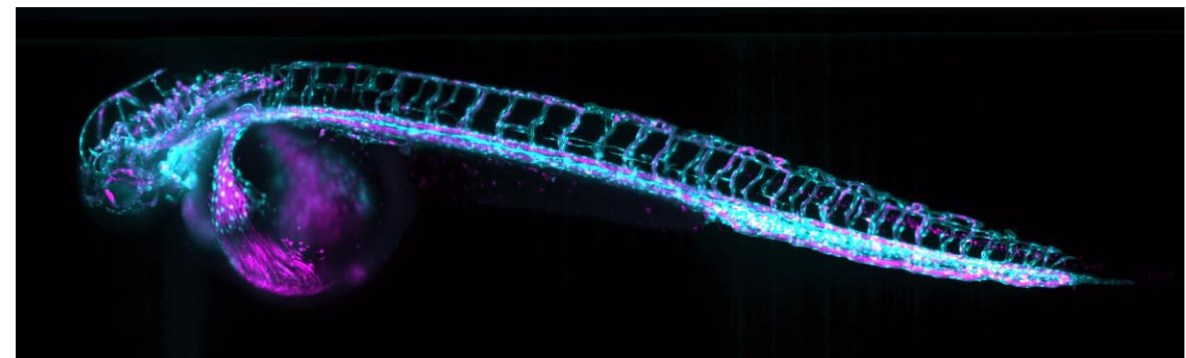
# The bioimage data type

Microscopy data is (often):

- high-dimensional (X, Y, Z, Channel, Time, ...)
- saved in proprietary file formats
- of large file size  
(often in GB-, sometimes in TB-range)
- produced with complex experimental setups
- used for quantitative analysis → derived data
- ... i.e. cumbersome to handle, store, and share?



*Courtesy of: Y. Stahl, S. Weidtkamp-Peters, HHU Düsseldorf*

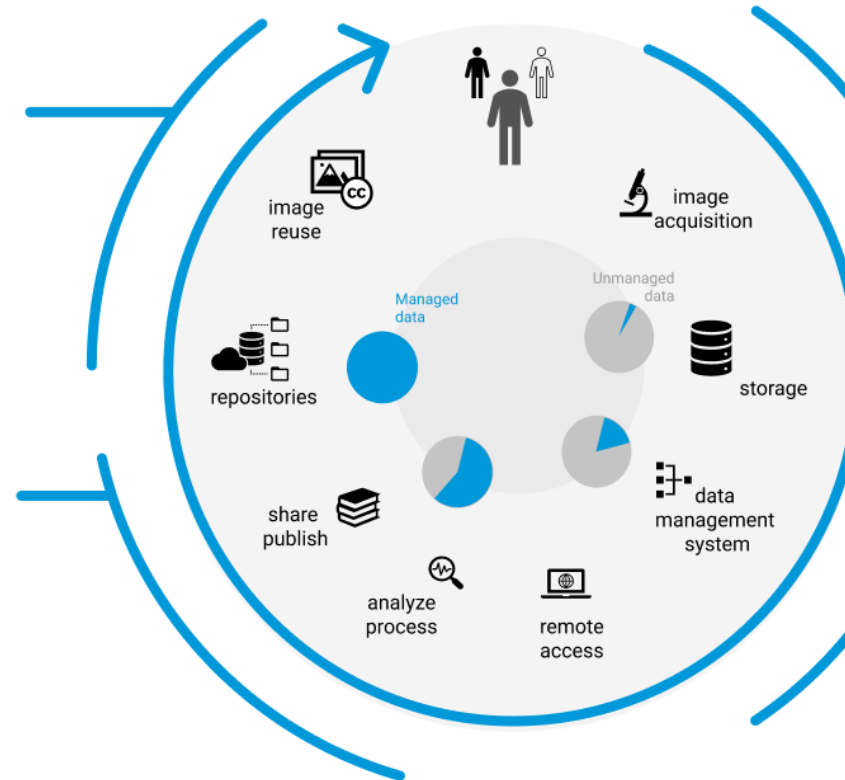


*Courtesy of: Jan Huisken, University of Göttingen*

# NFDI4BIOIMAGE Objectives

**Objective 4**  
**Capacitate** researchers  
for FAIR image data  
management

**Objective 3**  
Maximize the reach  
of **reproducible** image  
analysis workflows  
in the community



**Objective 1**  
Champion the  
**standardization**  
of the „bioimage  
data“ type

**Objective 2**  
Provide scalable  
**infrastructure**  
for FAIR image data

*Not in scope:* Medical, clinical, and preclinical imaging (MRT, PET, ultrasound, etc.)

# The consortium NFDI4BIOIMAGE



- 11 co-applicant institutions (6 Task Areas)  
Lead institution: Heinrich Heine University Düsseldorf  
Speaker: Prof. Dr. Stefanie Weidtkamp-Peters
- IT IT infrastructure (*storage & playground: @Uni Münster & @Uni Freiburg*)  
*But not: a central data archive for all bioimaging data*
- 12 participating institutions
- ★ **data stewards (DaSts) & research software engineers**
- community use cases

Community-oriented services (implemented or planned)

- Help Desk for use community support
- Training portfolio
- Bioimage RDM playground infrastructure
- Supporting reproducible image analysis

# NFDI4BIOIMAGE Help Desk



Research Data Management for Microscopy and Biolmage Analysis



Startseite > About us > Data Stewardship Team

- Goals and Task Areas +
- Consortium members +
- Project Office
- Data Stewardship Team** -
- Mohsen Ahmadi
- Vanessa Fuchs
- Riccardo Massei
- Maximilian Müller
- Jens Wendt
- Cornelia Wetzker
- Partners

## The NFDI4BIOIMAGE Data Stewardship Team

Get to know our task force for community support!

Our consortium offers support for bioimaging data management within the scientific community. No matter what your field of research is, we're here to support handling data acquired with microscopes. To do so, NFDI4BIOIMAGE has formed a Data Stewardship Team addressing your needs - from the community for the community.

To contact our Data Stewards Team for support in bioimaging data management, please use the Help Desk.

Who are the Data Stewards (DaSts)?

All NFDI4BIOIMAGE Data Stewards are scientists from different research fields with a focus on bioimaging. Within NFDI4BIOIMAGE, they work in different Task Areas and bundle their knowledge and expertise as the DaSt team. Thus, the DaSt team can offer community support for a wide range of cases. If required, our DaSt team will help finding additional contact partners (e.g., in other NFDI consortia). Here, we introduce the team:

THE DATA STEWARDS TEAM OF NFDI4BIOIMAGE

**Mohsen Ahmadi**  
Background: Biochemistry & Microscopy  
Affiliation: INP Greifswald

**Vanessa Fuchs**  
Background: Plant Sciences  
Affiliation: Heinrich-Heine University  
Düsseldorf

**Riccardo Massei**  
Background: Environmental Sciences and  
Toxicology  
Affiliation: Helmholtz Center f. Env. Res.  
(UFZ), Leipzig

**Maximilian Müller**  
Background: Ecotoxicology  
Affiliation: University of Konstanz

**Jens Wendt**  
Background: Electrical Eng./Information  
Tech. & Biomedical Eng.  
Affiliation: University of Münster

**Cornelia Wetzker**  
Background: Molecular Biology,  
Immunology, Zoology  
Affiliation: Dresden Technical University

## The NFDI4BIOIMAGE Community Help Desk

Receive support from our Data Stewardship Team

The NFDI4BIOIMAGE Help Desk is the point of contact for researchers and research-associated staff working with bioimaging data to request for support with bioimaging data management. Our team of **Data Stewards** will review your request and contact you within a couple of days. We will discuss with you and our network which could be the optimal way to support you.

Help Desk support can mean supporting you in several ways:

- Pointing to relevant resources and solutions you might not have been aware of yet
- Helping to moderate help requests within the broader community (e.g., image.sc)
- Discussing and supporting a local solution for your case
- Integrating you as a **Community Use Case** partner within NFDI4BIOIMAGE's work.

Here, you can read more about the Help Desk Concept.

Use the form below to contact us! We are looking forward to your message.

### NFDI4BIOIMAGE Help Desk

HELP REQUEST FORM

Your name\*

Your e-mail address\*

### Kontakt

The NFDI4BIOIMAGE Data Stewardship Team is headed by:

Dr. Vanessa Fuchs  
Heinrich-Heine University Düsseldorf

Dr. Maximilian Müller  
University of Konstanz

For support requests, please use the Help Desk entry mask.  
If you wish to establish a non-support request contact with the team, please reach out via email.

E-Mail schreiben ✉

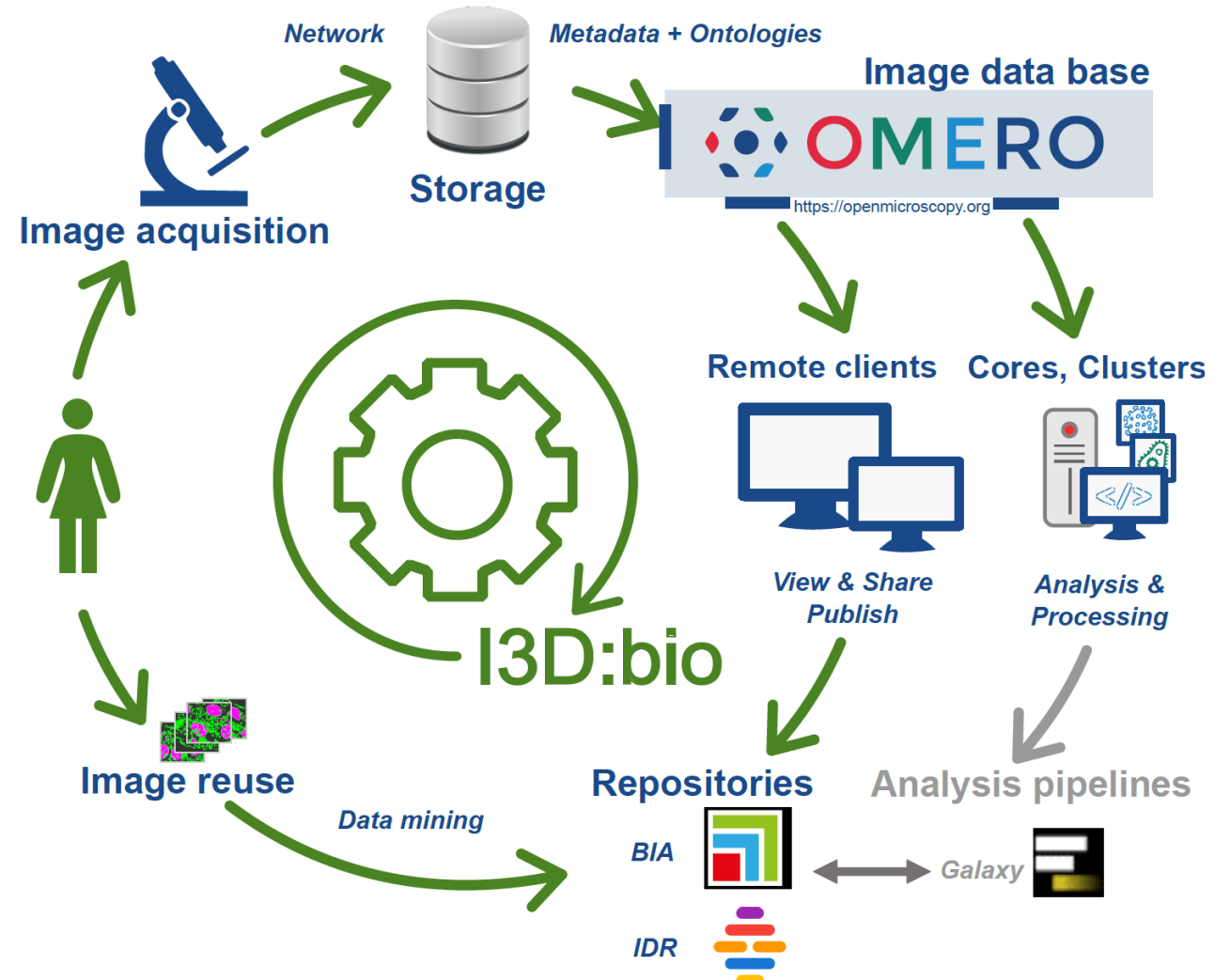
<https://nfdi4bioimage.de>



# I3D:bio – OMERO-centered RDM project

## Information Infrastructure for BioImage Data (I3D:bio)

- **DFG-funded:** 1st phase: 2022-2024
- **Partners:** HHU Düsseldorf, Uni Osnabrück, Uni Freiburg, DKFZ Heidelberg
- **Goal:** Implement new OMERO instances at universities and research institutions in Germany, and provide training for OMERO users



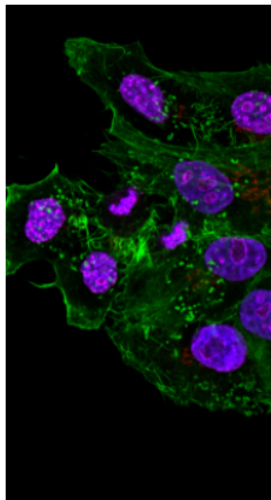


## I3D:bio – Information Infrastructure for BioImage Data

A Microscopy Research Data Management Resource

- ABOUT I3D:bio ▾
- About Bioimaging Data ▾
- Teaching Material & Events ▾
- Guides & Resources ▾
- Help Desk & Contact

Welcome to I3D:bio



- Data Life Cycle
- Microscopy File Formats
- Bioimaging Metadata
- Data Management Platforms
- Image Data Repositories
- Bioimage Analysis

management resource for bioimaging with a focus on light microscopy

resource to aid with...

and teaching about microscopy research data management?

ing your microscopy research data?

sharing and archiving your images?

our image data with experimental protocols and analysis results?

up microscopy reasearch data management at your institute or facility?

use I3D:bio project pages and contact us for questions and support.

# Contact

NFDI4BIOIMAGE Project Office  
Kathy Schmitz & Christian Schmidt  
[office@nfdi4bioimage.de](mailto:office@nfdi4bioimage.de)

NFDI4BIOIMAGE Help Desk  
Data Stewardship Team

<https://nfdi4bioimage.de/help-desk>

I3D:bio Help Desk

<https://gerbi-gmb.de/i3dbio/i3dbio-help-contact/>

# Acknowledgments

- NFDI4BIOIMAGE partners
- I3D:bio partners
- DFG

- Collaboration partners
- GerBI-GMB community



# NFDI4BIOIMAGE Training Portfolio

## **A Training Portfolio is being established in the consortium**

- FAIR data life cycle as applied to bioimaging
- DMPs for microscopy data
- How to publish bioimaging data sets
- Bioimage data repositories
- Microscopy file formats: OME.zarr as a cloud-ready file format for large N-dimensional arrays
- OMERO as a research data management platform
- Metadata curation and annotation tools for bioimage data
- Reproducible image analysis workflows
- Tools for reproducible image analysis (e.g., Galaxy, Fiji, JiPipe, etc.)
- Roll-out of NFDI4BIOIMAGE deliverables