

# Fantastic bioimage repositories and where to find them

Towards FAIR bioimaging

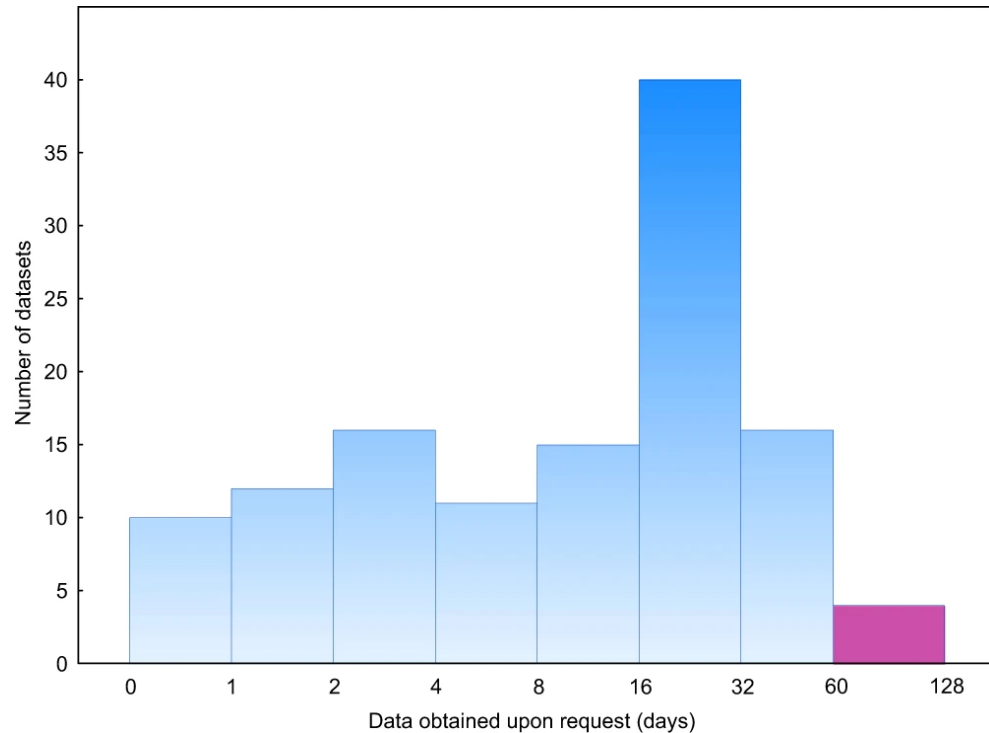
Trainers: Christian Schmidt, Tom Boissonnet, Michele Bortolomeazzi, **Ksenia Krooß**

Data Steward

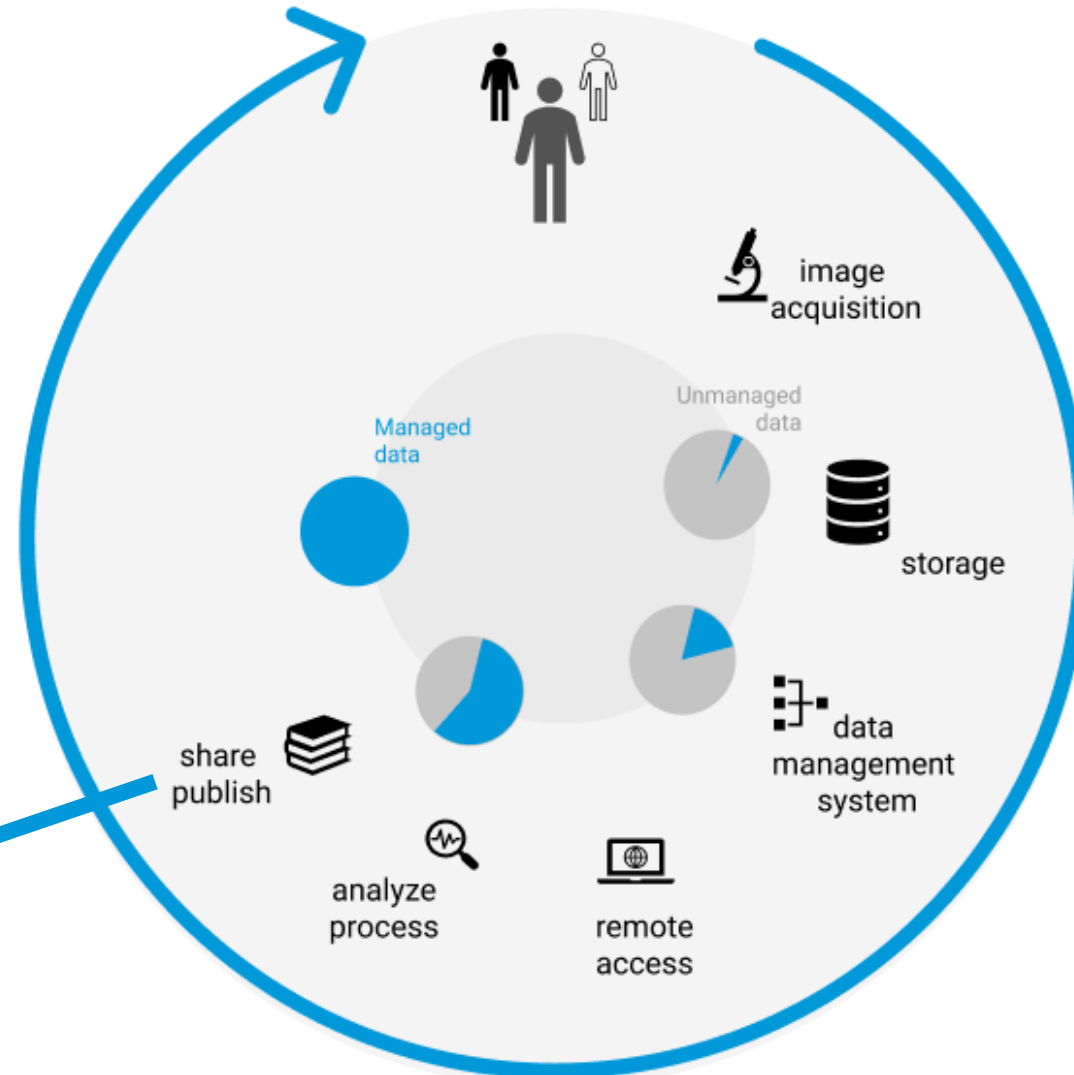
Center for Advanced Imaging (CAi), Heinrich-Heine-Universität Düsseldorf

[ksenia.krooss@hhu.de](mailto:ksenia.krooss@hhu.de)

# Bioimage lifecycle



Data available upon request.  
But is it?

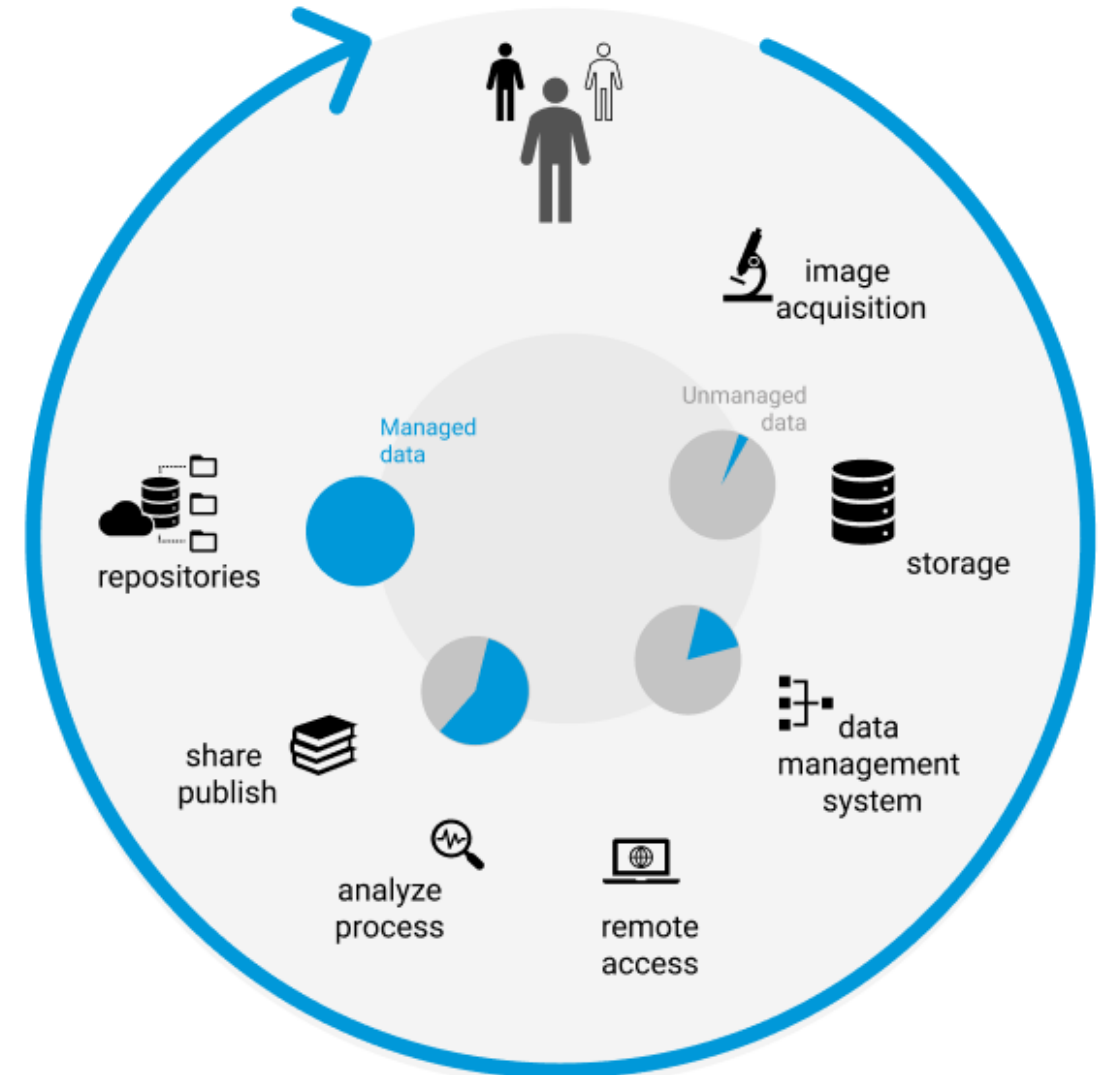


# What are repositories?

Digital storage space for data (and metadata) with the goal of

- preserving the data
- making data findable
- making data accessible

➤ Paper publication and data deposition to a suitable repository should go hand in hand

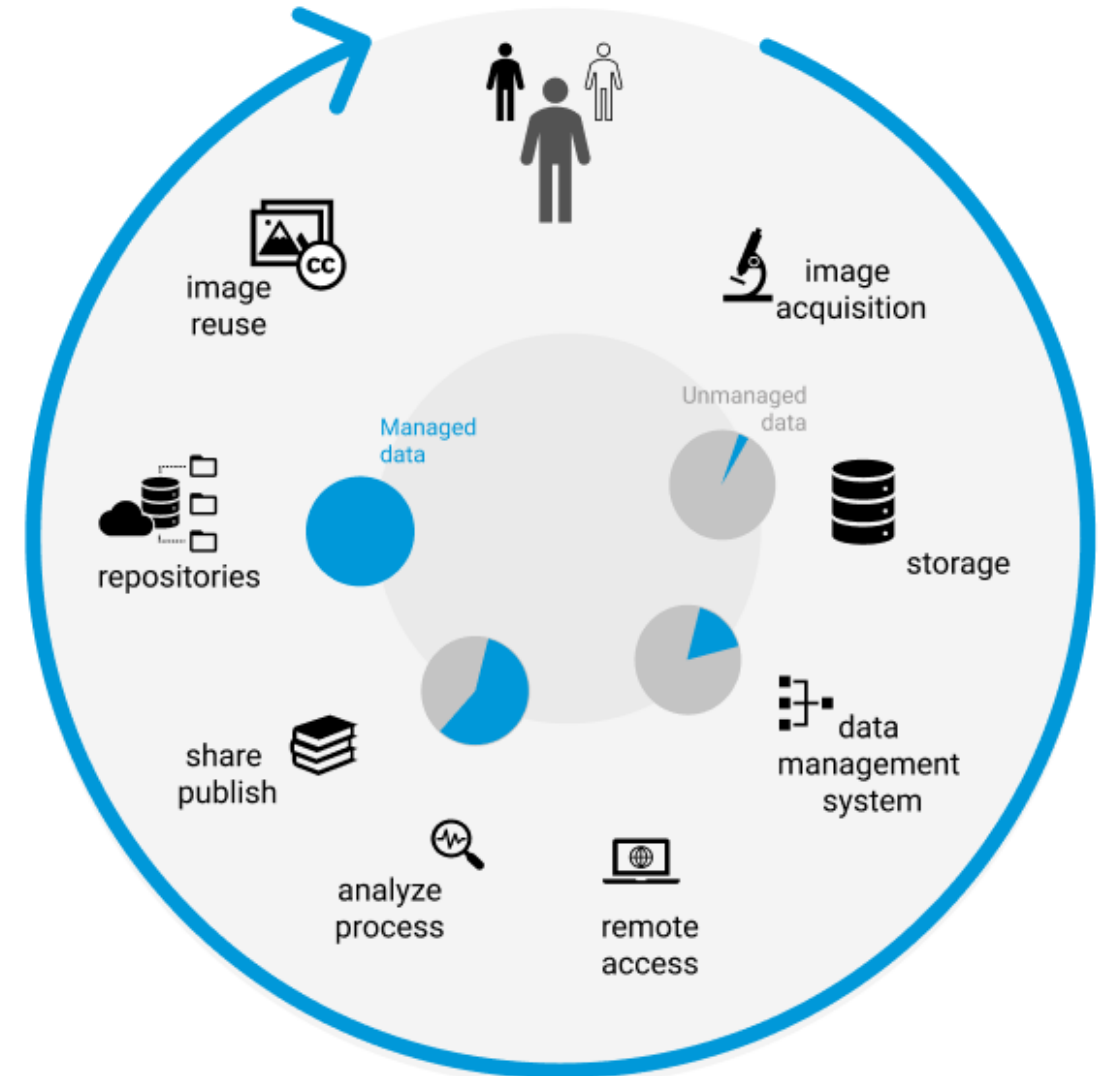


# Why using repositories?

Depositing data on a repository will

- help understand your results
- be accessible to other researchers
- increase trust in your (published) findings
- help reproduce your results
- save resources
- enable reuse of data

➤ makes your data FAIR (findable, accessible, interoperable, reusable)



# Finding a suitable repository

Why can't I use a personal website to share my data?

Repositories have to comply with some general criteria (from Practical Guide to the International Alignment of Research Data Management), such as

- persistent identifiers for data
- metadata
- access and licenses regulations
- data preservation

# Finding a suitable repository

How to judge whether a repository complies with these criteria?

You can use these repository registries:

- re3data.org - Registry of Research Data Repositories

<https://www.re3data.org/>

 re3data.org

- FAIRsharing.org - Standards, Databases, Policies

<https://fairsharing.org/>

 FAIRsharing.org  
standards, databases, policies

- OpenAIRE - Explore

<https://explore.openaire.eu/>

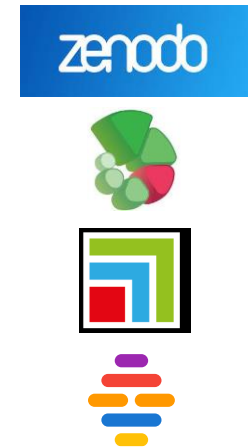
 OpenAIRE | EXPLORE

# Finding a suitable repository

Which repository fits to my data?

You have to decide, do you want to use a

- generic repository, e.g. Zenodo
- discipline-specific or domain-specific repository, e.g. EMPIAR
- archive-type data repository, e.g. BioImage Archive
- added-value databases, e.g. IDR

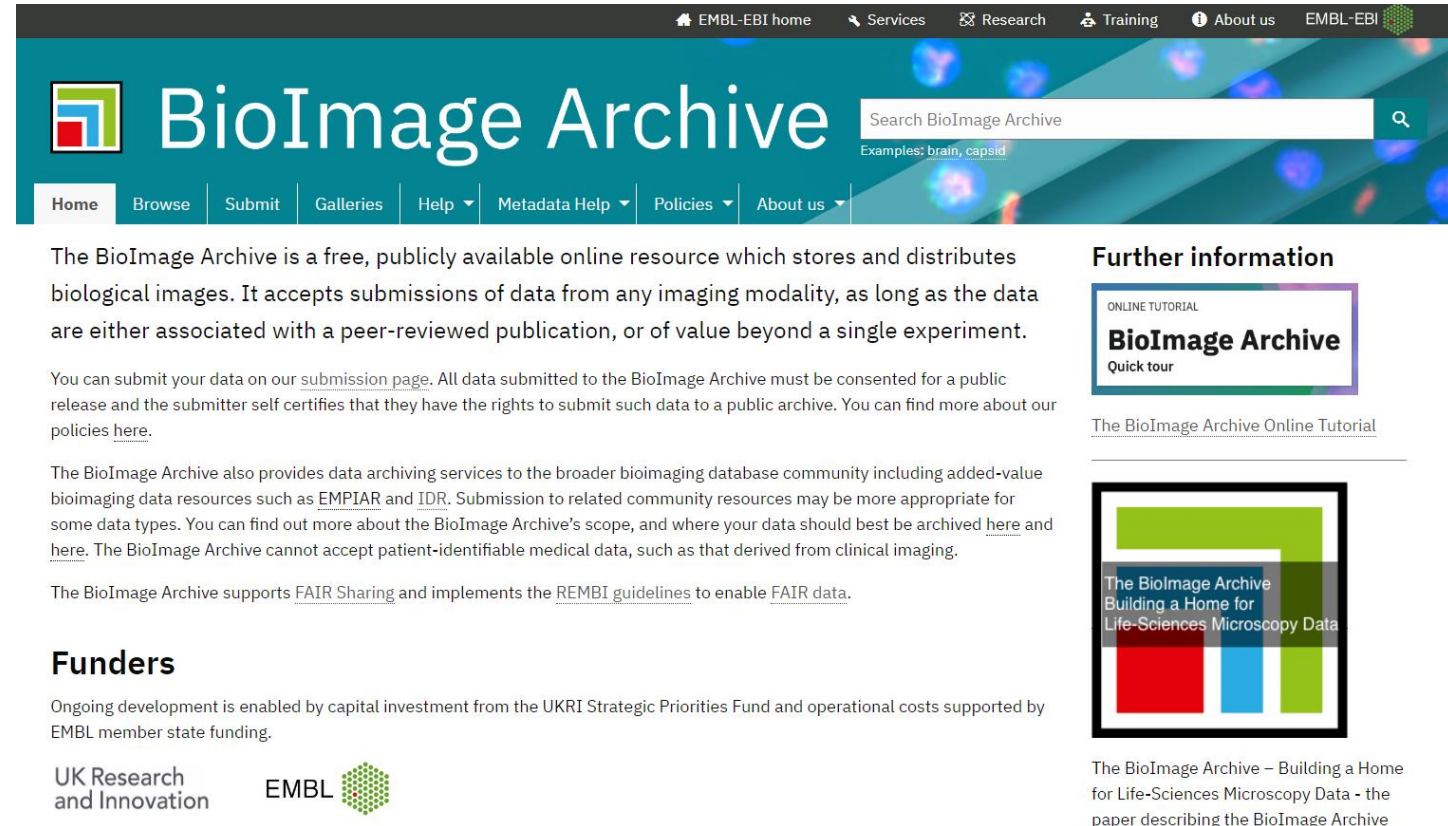


➤ Community-developed checklists for publishing images and image analyses, Schmied et al. (2023), Nat Methods



## Archive-type image data repository

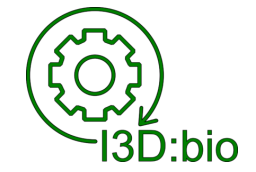
- in November 2023 100 TB data was deposited
- implemented at the European Molecular Biology Laboratory – European Bioinformatics Institute (EMBL-EBI) at Hinxton, UK
- BIA accepts bioimaging data in general
- Minimal mandatory metadata requirements, based on REMBI



The screenshot shows the BioImage Archive website. The header includes navigation links: EMBL-EBI home, Services, Research, Training, About us, and EMBL-EBI. The main banner features the BioImage Archive logo and a search bar with the text "Search BioImage Archive" and examples "brain, capsid". Below the banner is a navigation menu with links: Home, Browse, Submit, Galleries, Help, Metadata Help, Policies, and About us. The main content area contains several paragraphs of text describing the archive's mission, submission process, and data archiving services. It also mentions funding from the UKRI Strategic Priorities Fund and EMBL member state funding. On the right side, there is a "Further information" section with a link to an "ONLINE TUTORIAL" and a "Quick tour". Below this is a link to "The BioImage Archive Online Tutorial". At the bottom right, there is a logo for "The BioImage Archive Building a Home for Life-Sciences Microscopy Data" and a link to "The BioImage Archive – Building a Home for Life-Sciences Microscopy Data - the paper describing the BioImage Archive".

<https://www.ebi.ac.uk/bioimage-archive/>





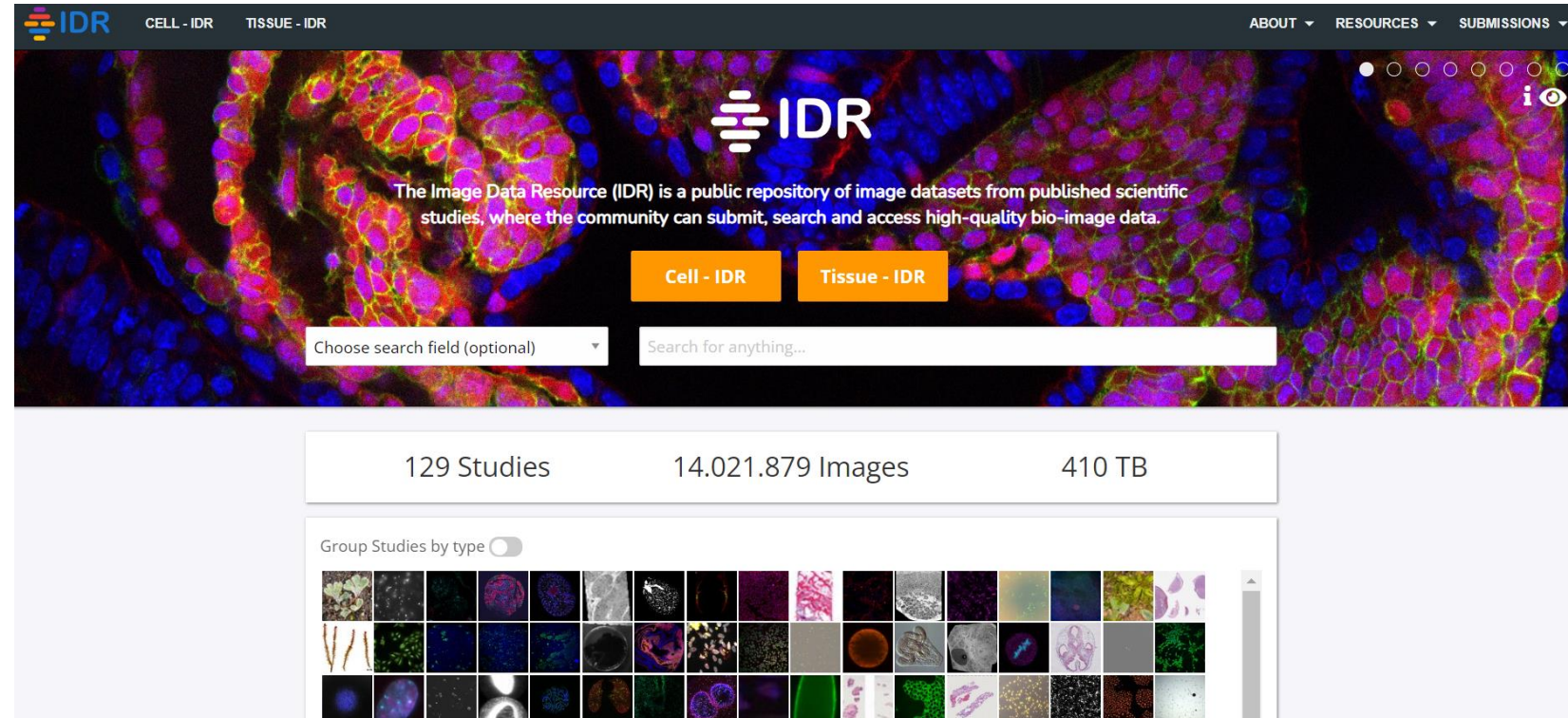
# BioImage Archive (BIA)



<https://www.ebi.ac.uk/biostudies/bioimages/studies/S-BIAD1241>

added-value database

- developed as a collaboration of the EMBL-EBI at Hinxton, UK, and the Open Microscopy Environment consortium (OME) at University of Dundee
- curated datasets that will be valuable to broad scientific audience, cell- and tissue-centric
- Moderate mandatory metadata requirements





<https://idr.openmicroscopy.org/webclient/?show=screen-2051>

Contact: help request form <https://nfdi4bioimage.de/help-desk> or email [helpdesk@nfdi4biomage.de](mailto:helpdesk@nfdi4biomage.de)

## 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





# Acknowledgments



All-hands Meeting NFDI4BIOIMAGE, 23.10.2023, Düsseldorf

NFDI4BIOIMAGE Project Office

Christian Schmidt

[office@nfdi4bioimage.de](mailto:office@nfdi4bioimage.de)

NFDI4BIOIMAGE Help Desk and Data Stewardship Team

[helpdesk@nfdi4bioimage.de](mailto:helpdesk@nfdi4bioimage.de)

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

<https://nfdi4bioimage.de/about-us/data-stewardship-team/>

I3D:bio

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



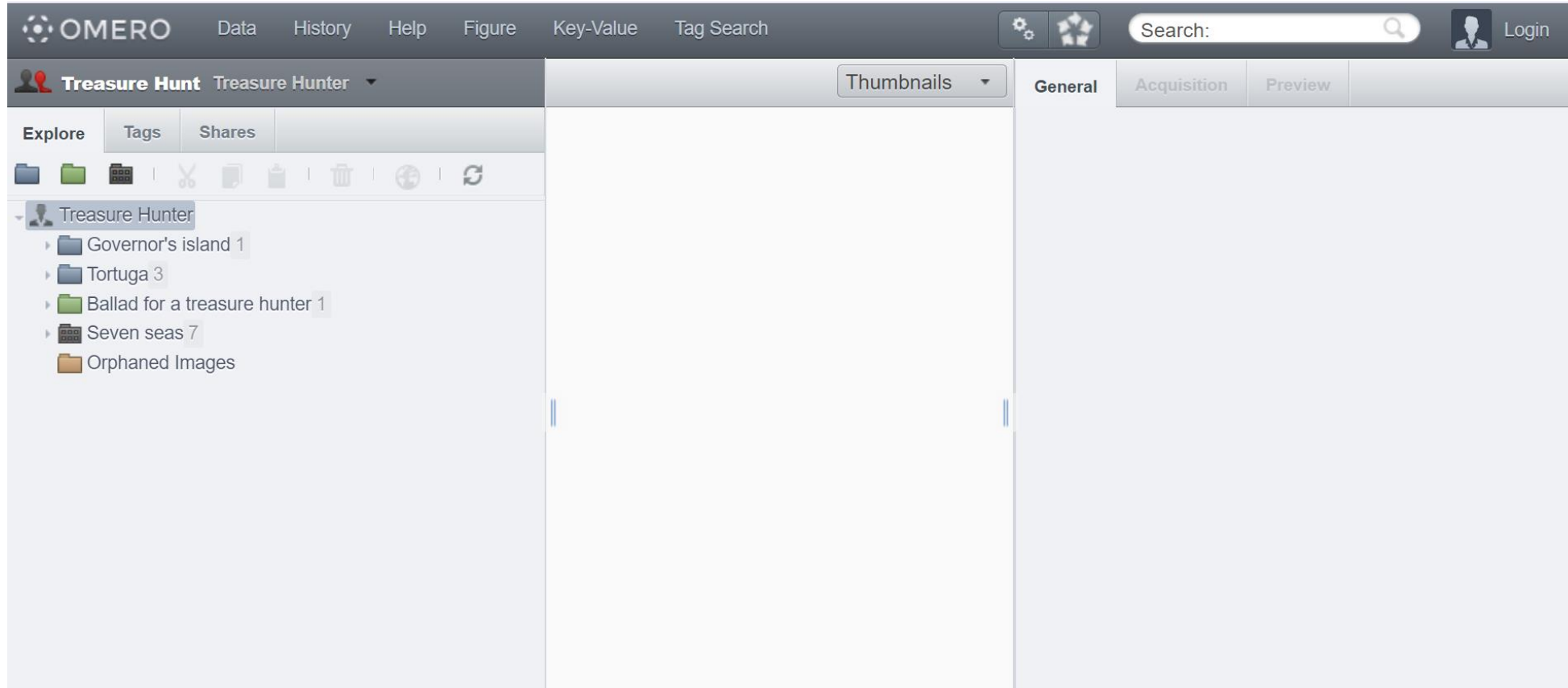
NFDI4BIOIMAGE partners

I3D:bio partners

GerBI-GMB community

The NFDI4BIOIMAGE consortium comprises legally independent partners and does not act autonomously towards third parties. The authors represent the contributions from their respective affiliated institutions and work together for the project.

# And now – OMERO treasure hunt



<https://omero-training.gerbi-gmb.de/webclient/>

