

# EASTBIO 2023 OMERO Workshop

The presentation and a PDF version of the workshop are available at <https://downloads.openmicroscopy.org/presentations/2023/Eastbio-extra>

## Software versions used for this workshop:

- OMERO: 5.6.6
- OMERO.web: 5.16.0
- omero-guides: 2021.11.09
- OMERO.insight: 5.8.0
- OMERO.insight-ij: 5.8.0
- OMERO.iviewer: 0.12.0
- OMERO.figure: 5.1.0
- OMERO.parade: 0.2.3
- OMERO.duplicate: 0.4.0
- OMERO R gateway: 0.4.8
- Bio-Formats: 6.5.1
- Fiji/ImageJ: 2.0.0-rc-69/1.52p
- Matlab R2019a
- QuPath 0.4.2
- omero-metadata: 0.5.0
- Ilastik 1.3.3 (pipeline), 1.4.0b5 (inside the docker)

## Summary

OMERO core concepts

- Data management - Metadata
- Viewer -3D Viewer
- Annotations

OMERO figure

- How to use figure
  - Images basic workflow
  - Scale Bars
  - ROIs

Publish data using OMERO

## Programme

Import (for your information only)

In this section we will cover the various import options such as the import with or without data transfer and synchronous vs. asynchronous.

### Desktop client install and import

For these 2 workflows, see

Video <https://www.youtube.com/watch?v=U5rH7ZmylAI&t=149s>

Guides:

<https://omero-guides.readthedocs.io/en/latest/upload/docs/import-desktop-client.html> and

<https://omero-guides.readthedocs.io/en/latest/upload/docs/import-desktop-client.html#import-for-another-user>

### Command line import, bulk import, in-place import

These import sections not covered in the workshop can be found at

<https://omero-guides.readthedocs.io/en/latest/upload/docs/import.html>

## OMERO core concepts

### Data management and cooperation

See:

Guide <https://omero-guides.readthedocs.io/en/latest/introduction/docs/data-management.html>

Short video <https://www.youtube.com/watch?v=v85YD4cORk4>

1. Change brightness and contrast (aka Rendering settings)
2. Find information in Original metadata

### Viewing images (OMERO.iviewer)

<https://omero-guides.readthedocs.io/en/latest/iviewer/docs/index.html>

1. Add a ROI in OMERO.iviewer manually and save it

### Annotate data and filter using annotations

See:

Guide: <https://omero-guides.readthedocs.io/en/latest/introduction/docs/annotate.html>

Short video <https://www.youtube.com/watch?v=kW9O1M1obKc>

1. Rate your best images with 5 stars
2. Attach a file to an image
3. Tag multiple images

## Analysis with Fiji

- Analysis with Fiji: Java
  - Fiji client side: manual Analysis via User Interface

For setup of the Fiji plugin see

<https://omero-guides.readthedocs.io/en/latest/fiji/docs/installation.html>

For the walkthrough in this workshop, see the four Fiji chapters

<https://omero-guides.readthedocs.io/en/latest/fiji/docs/installation.html>

[https://omero-guides.readthedocs.io/en/latest/fiji/docs/threshold\\_manual.html](https://omero-guides.readthedocs.io/en/latest/fiji/docs/threshold_manual.html)

## Search (for your information)

<https://omero-guides.readthedocs.io/en/latest/introduction/docs/search-omero.html>

## Export (for your information)

<https://omero-guides.readthedocs.io/en/latest/download/docs/index.html>

OMERO parade

## Data mining using OMERO.parade on Projects and Plates

See [https://omero-guides.readthedocs.io/en/latest/parade/docs/omero\\_parade.html](https://omero-guides.readthedocs.io/en/latest/parade/docs/omero_parade.html)

## OMERO figure

### Fast creation of publication figures using OMERO.figure

See [https://omero-guides.readthedocs.io/en/latest/figure/docs/omero\\_figure.html](https://omero-guides.readthedocs.io/en/latest/figure/docs/omero_figure.html)

See video <https://www.youtube.com/watch?v=mjINBUoGKRc>

Build a figure containing:

1. Images adjusted to a grid
2. Channels in black and white and overlay in color
3. Adjusted brightness and contrast
4. Load the ROI drawn in OMERO.iviewer
5. Annotation like arrow, scale bar, channel names...
6. A zoomed inset
7. Export the figure

## Publication

**Publication in OMERO is tantamount to moving data into a “Public” group.**

See <https://omero-guides.readthedocs.io/en/latest/introduction/docs/data-publication.html>

See

<https://omero-guides.readthedocs.io/en/latest/introduction/docs/data-management.html#move-data-between-groups-owners-of-data>

To create a link to a Project/Dataset/Image in OMERO.web, click on the Project/Dataset/Image in the left-hand side tree. Then, in the right-hand pane, General tab, click on the “chain” icon



and copy the link from there.

1. Share the link to the data with someone external to your organization