

LCI 2024 OMERO Workshop

The presentation and a PDF version of the workshop are available at https://downloads.openmicroscopy.org/presentations/2024/Karolinska_LCI/

Software versions used for this workshop:

- OMERO: 5.6.8
- OMERO.web: 5.22.1
- omero-guides: 2021.11.09
- OMERO.insight: 5.8.3
- OMERO.insight-ij: 5.8.3
- OMERO.iviewer: 0.13.0
- OMERO.figure: 6.0.1
- OMERO.parade: 0.2.3
- OMERO.duplicate: 0.4.0
- Bio-Formats: 6.14.0
- Fiji/ImageJ: 2.0.0-rc-69/1.52p

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=U5rH7ZmyIAI&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>

******Assignment tasks cues for****:**

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>

******Assignment tasks cues for****:**

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>

******Assignment tasks cues for****:**

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

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

OMERO figure

Fast creation of publication figures using OMERO.figure

See https://omero-guides.readthedocs.io/en/latest/figure/docs/omero_figure.html

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

****** Assignment tasks cues for****:**

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. Figure resized to 300dpi
8. 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.

******Assignment tasks cues for****:**

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