

Canada BioImaging OMERO Workshop

Summary

Day 1

Import into OMERO

- Cover the various import options

OMERO core concepts

- **Data management - Metadata**

- Search

- Viewer -3D Viewer

OMERO figure

Taster of analysis: How to get analytical results from Fiji & OMERO

Use analytical results in **OMERO parade**

End of Day 1

Day 2

Analysis with 3rd party tools

- Analysis with **Fiji: manual**

- Analysis with **Fiji: scripting**

- Introducing the analysis environment & OMERO concepts

- Analysis in OMERO or IDR using **Cellpose**

Content

Import

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 shown in the workshop, see

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

Viewing images (OMERO.iviewer)

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

Annotate data and filter using annotations

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

Search

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

Viewing images (3D viewer: OMERO.FPBioimage)

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

Export

<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

Analysis

This part constitutes the core of the training and we will explore the different means OME provides to interact with image and non-image data and how to best integrate these into your workflows.

Analysis with Fiji

- Analysis with Fiji: Java
 - Fiji client side: manual Analysis via UI
 - Fiji client side: scripting: Groovy and Macro
 - Fiji: Analysis in the cloud: Java and Macro

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 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_scripting_macro_language.html

Analysis with CellPose

For the basic setup for Cellpose (but also StarDist and CellProfiler) OMERO bindings, either

- (easier, environment will be set up on the cloud) **Click on the Google Colab badge** in https://github.com/ome/EMBL-EBI-imaging-course-05-2023/blob/main/Day_4/setup.md and then select **notebooks/Cellpose.ipynb**
- (more rewarding, local setup) Follow the instructions in https://github.com/ome/EMBL-EBI-imaging-course-05-2023/blob/main/Day_4/setup.md

Analysis in R

See for R analysis

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

Server side analysis

- Analysis server side
 - How to write a Python script
 - How to upload the script to the server

Server-side scripts (python)

https://omero-guides.readthedocs.io/en/latest/scripts/docs/execute_scripts.html

For further information about how to write and manage server-side scripts see
<https://omero-guides.readthedocs.io/en/latest/scripts/docs/index.html>

Optional analysis (for you information only)

See for Python scripts (for your information only)

<https://omero-guides.readthedocs.io/en/latest/python/docs/simple-frap-example.html>

See for Java scripts (for your information only)

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