Canada BiImaging 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
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

Viewing images (OMERO.iviewer)

Annotate data and filter using annotations

Search

Viewing images (3D viewer: OMERO.FPBioimage)

Export

OMERO parade

Data mining using OMERO.parade on Projects and Plates

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
For the walkthrough in this workshop, see Fiji chapters

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
  and then select notebooks/Cellpose.ipynb
- (more rewarding, local setup) Follow the instructions in

Analysis in R

See for R analysis

Server side analysis

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

Server-side scripts (python)
For further information about how to write and manage server-side scripts see

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Optional analysis (for you information only)
See for Python scripts (for your information only)
See for Java scripts (for your information only)