OMERO: overview & update

April 2014

Will Moore & Douglas Russell

The Open Microscopy Environment

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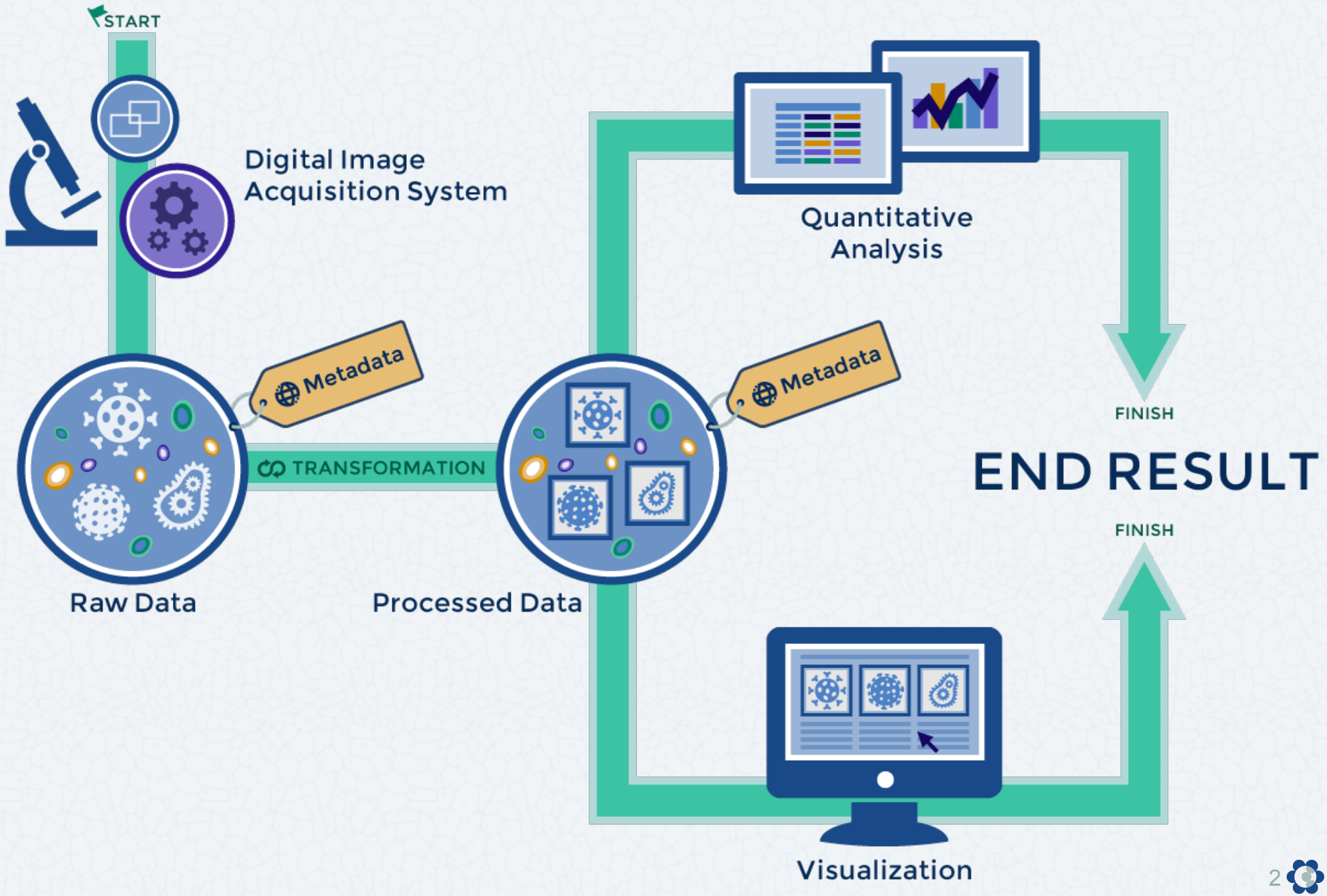
College of Life Sciences
University of Dundee
Dundee, Scotland, UK

Seattle, WA, USA
Dundee, UK

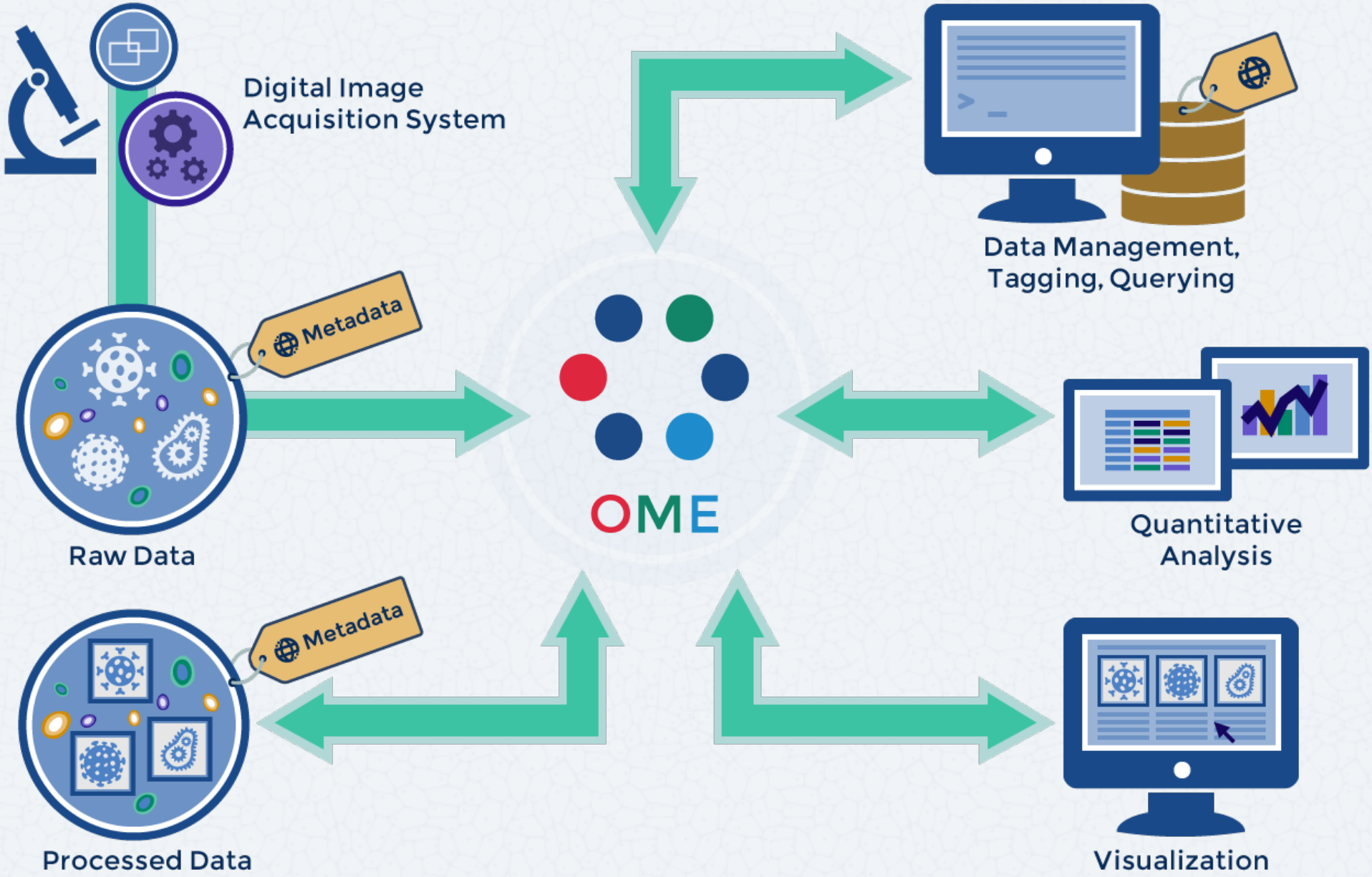
OMERO: overview & update

- About OME
- OMERO overview
- Using OMERO
  - Import, Organising, Sharing, Analysis, Export
- What's New?
  - OMERO 5, OMERO.webtagging, OMERO.figure

Following the Data…

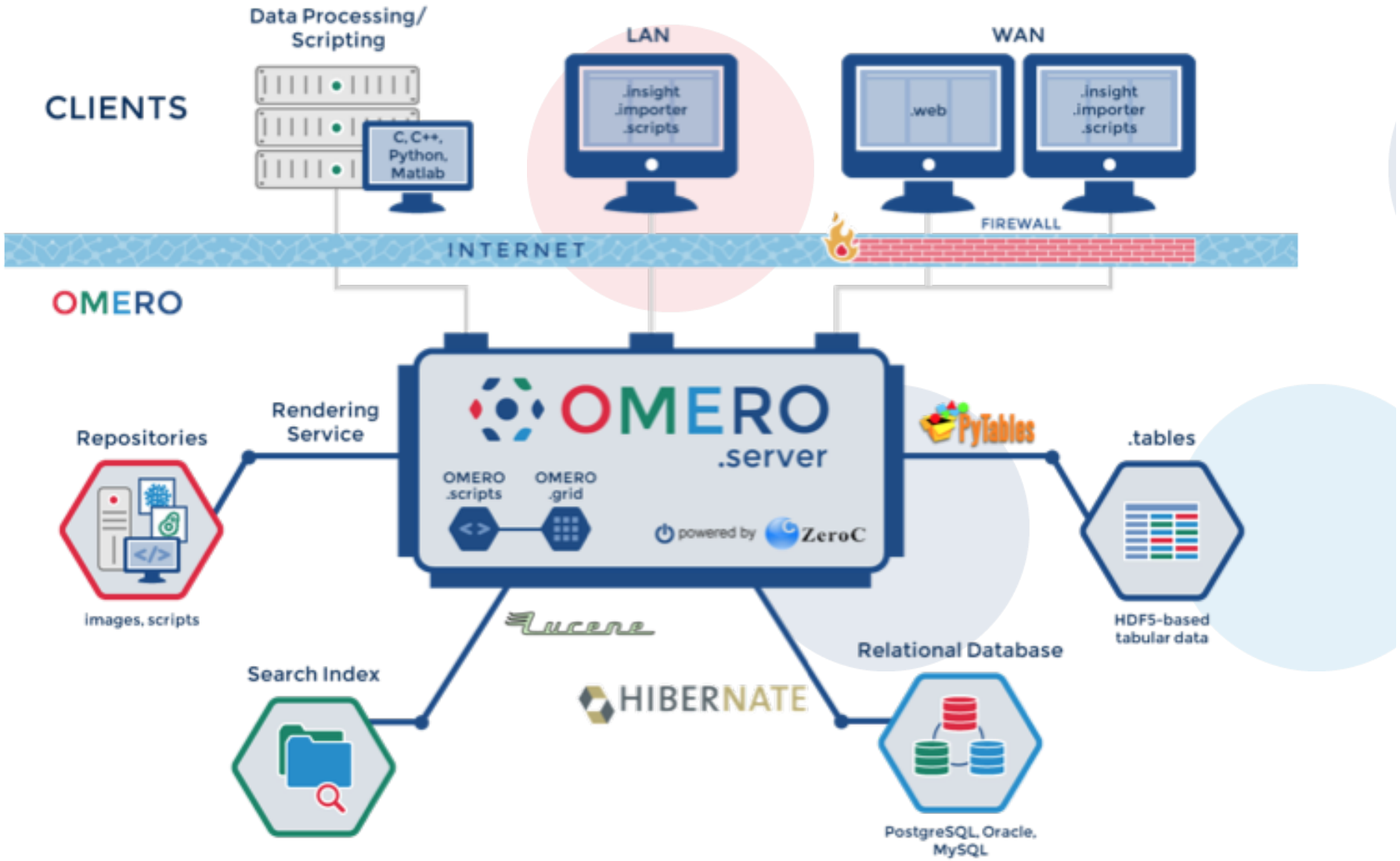


…Towards Image Informatics



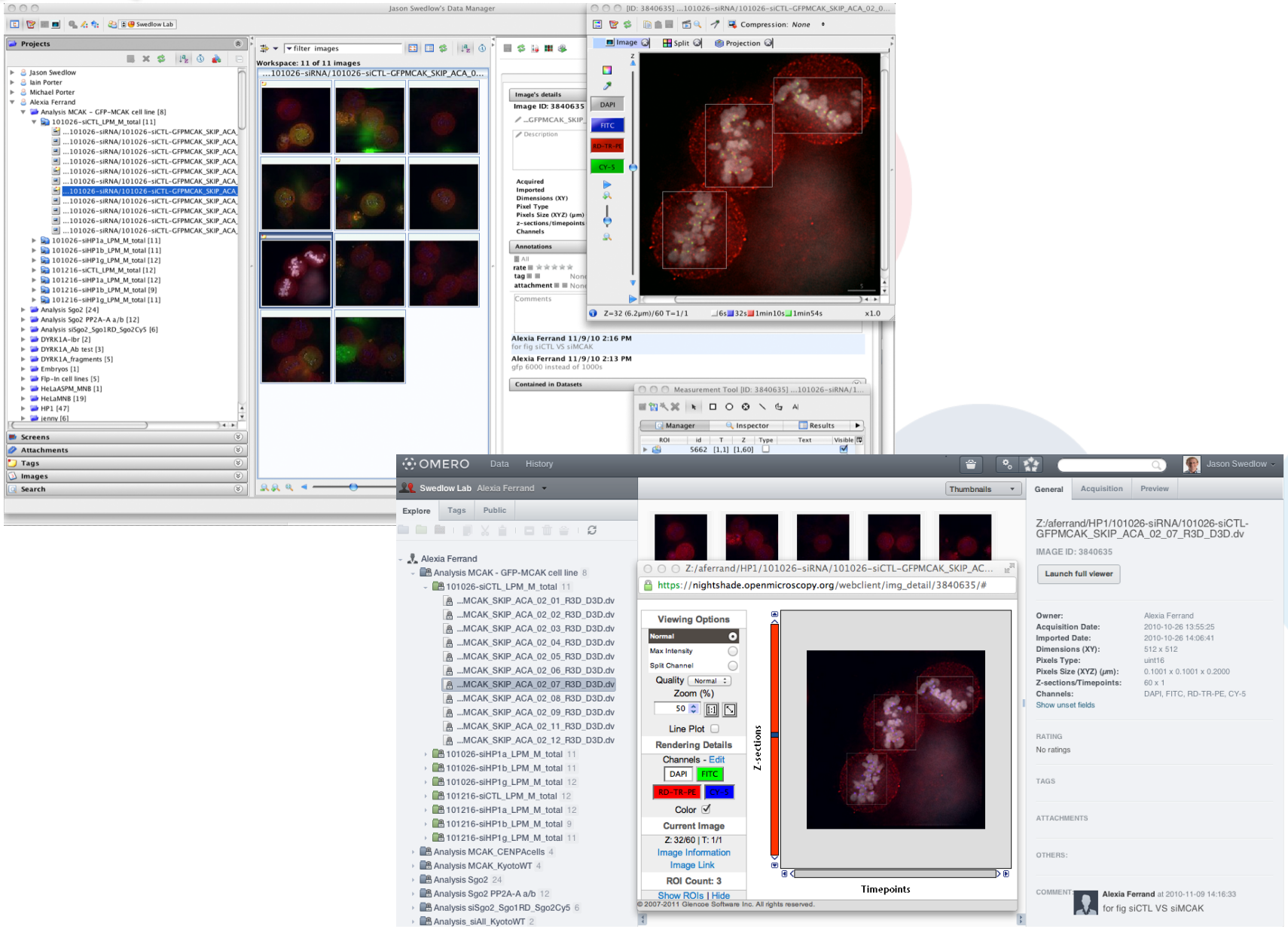
WHAT IS OMERO?

OMERO:
Open Data Management Platform



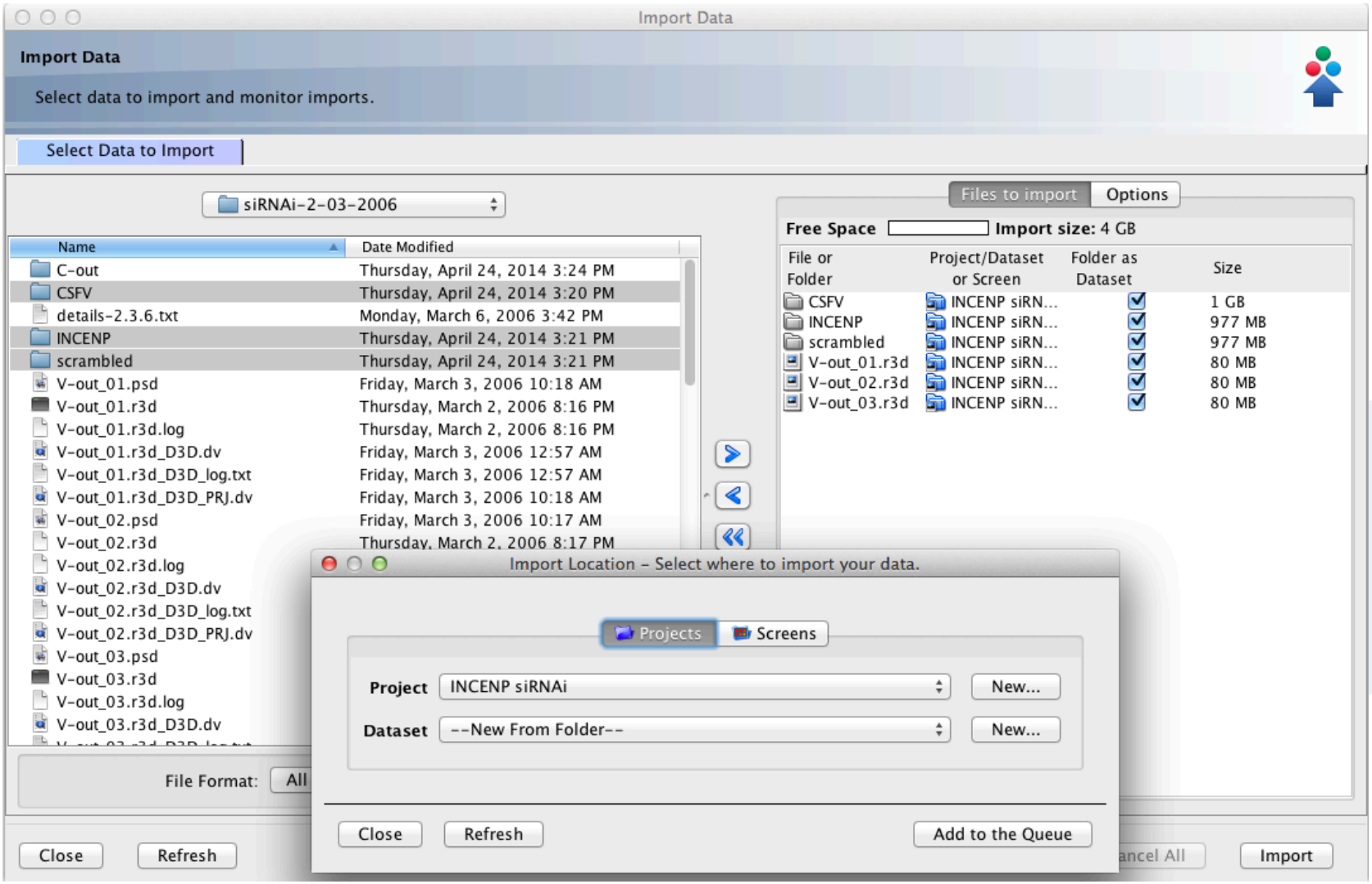
Allan et al, 2012, Nature Methods

OMERO: Desktop and Web clients

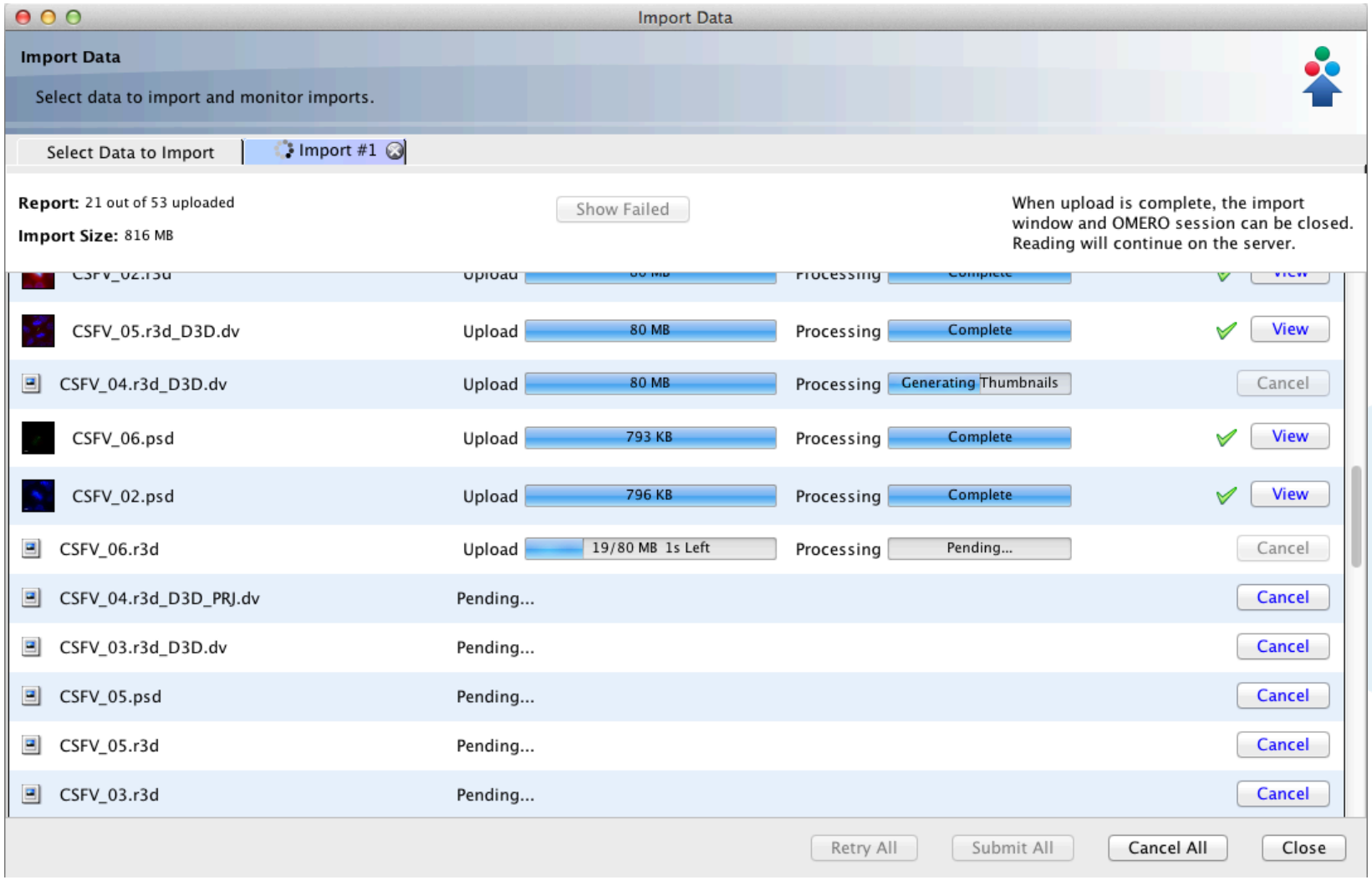


OMERO WORKFLOW

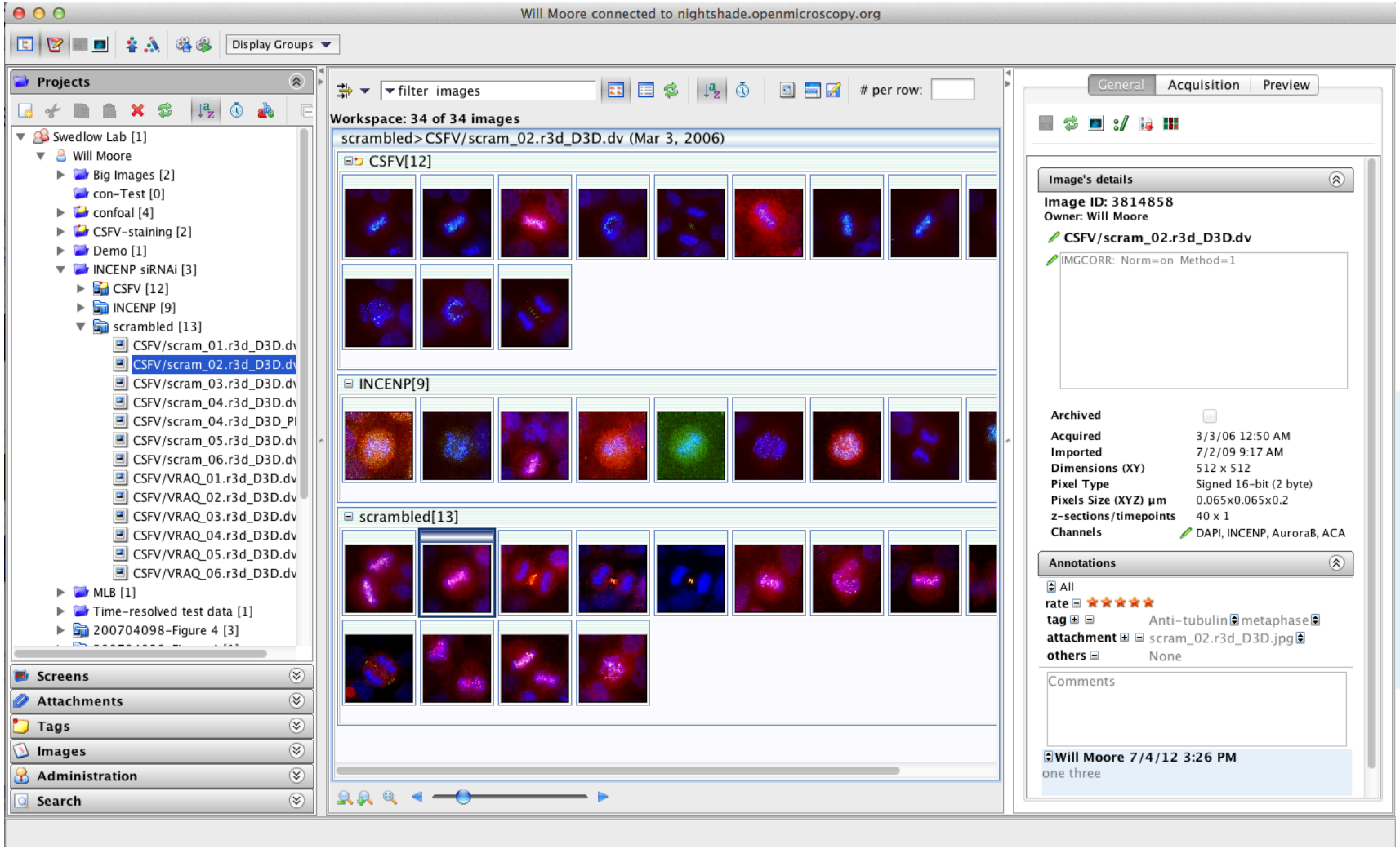
OMERO: Import-1



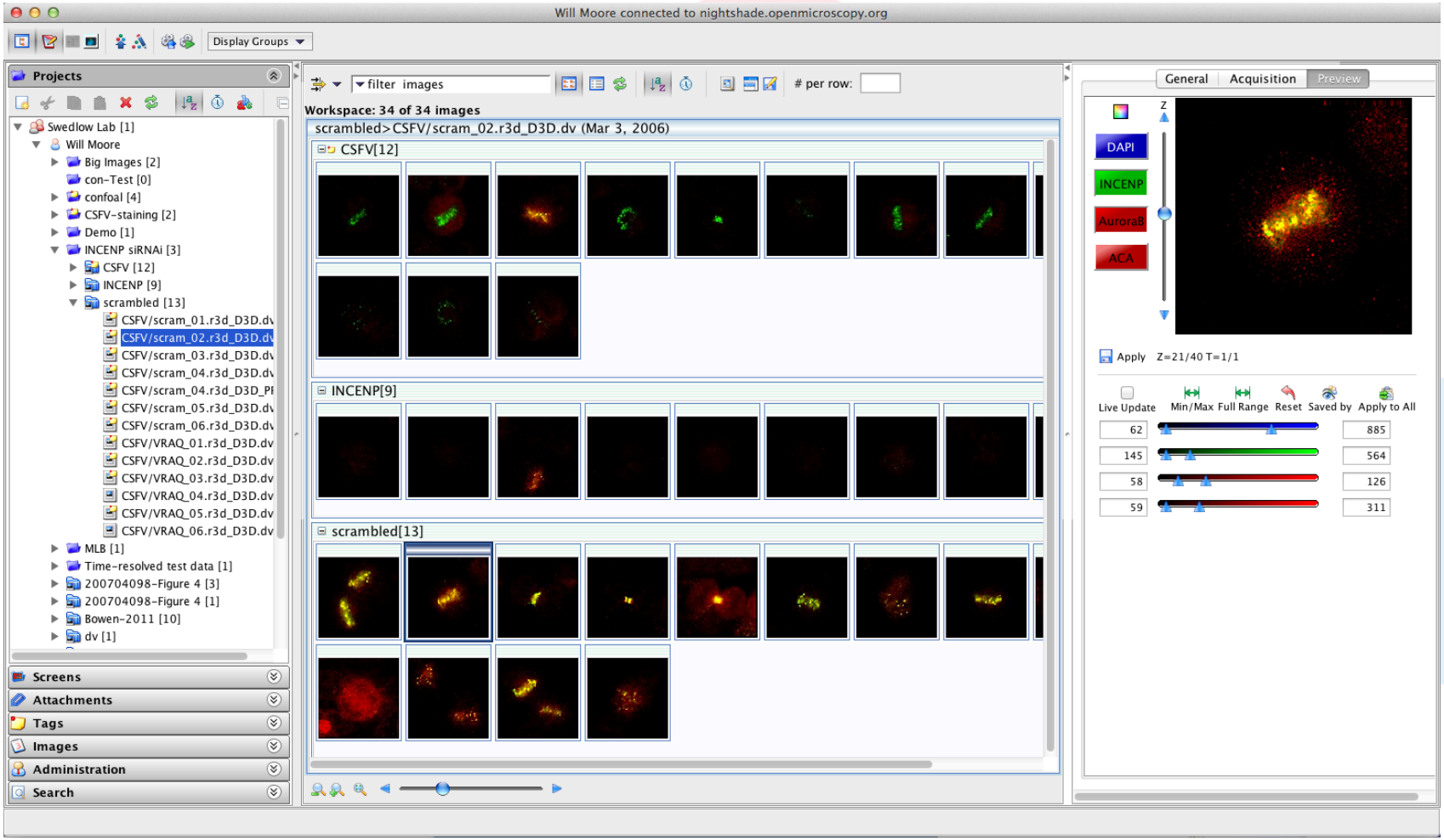
OMERO: Import-2



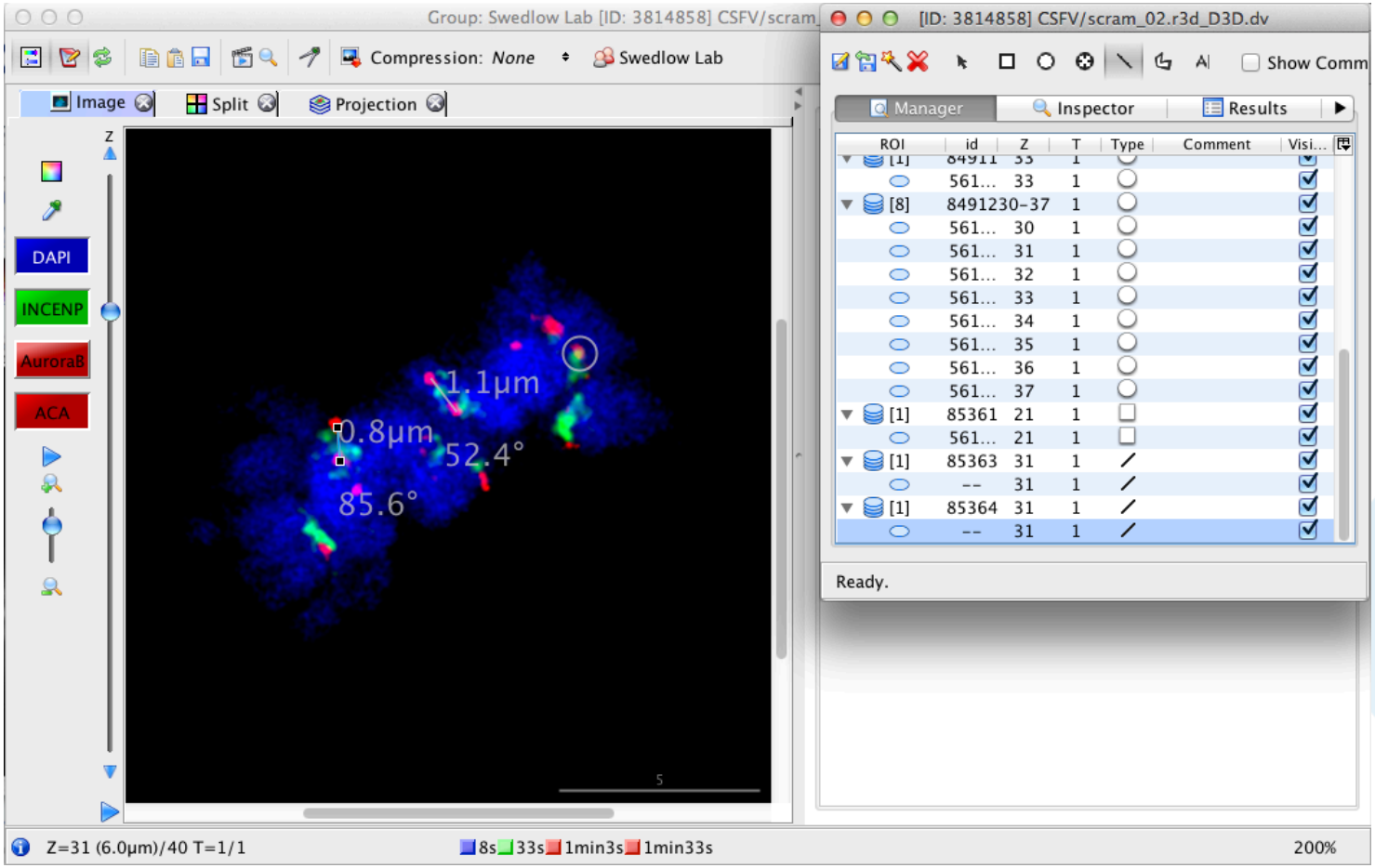
OMERO: Organising Data



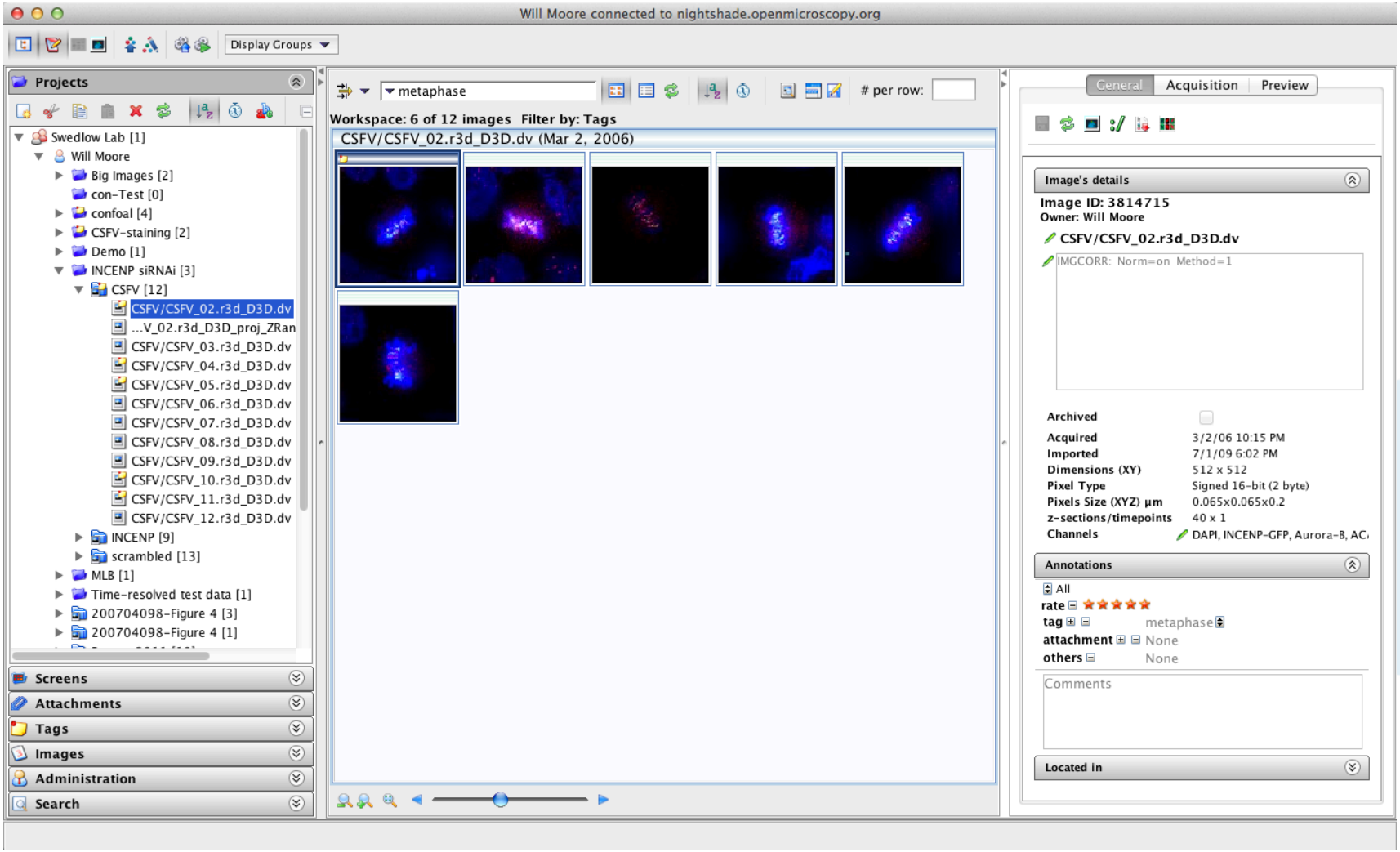
OMERO: Rendering settings



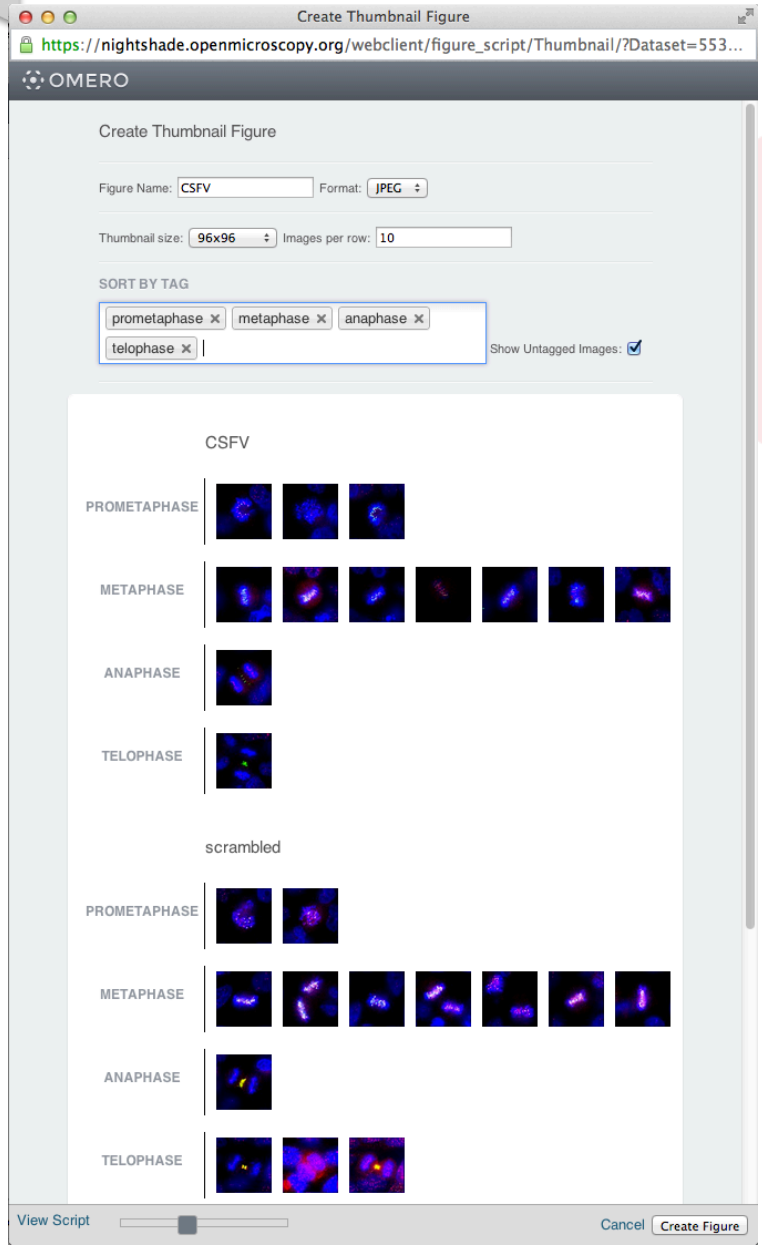
OMERO Insight: ROI tool

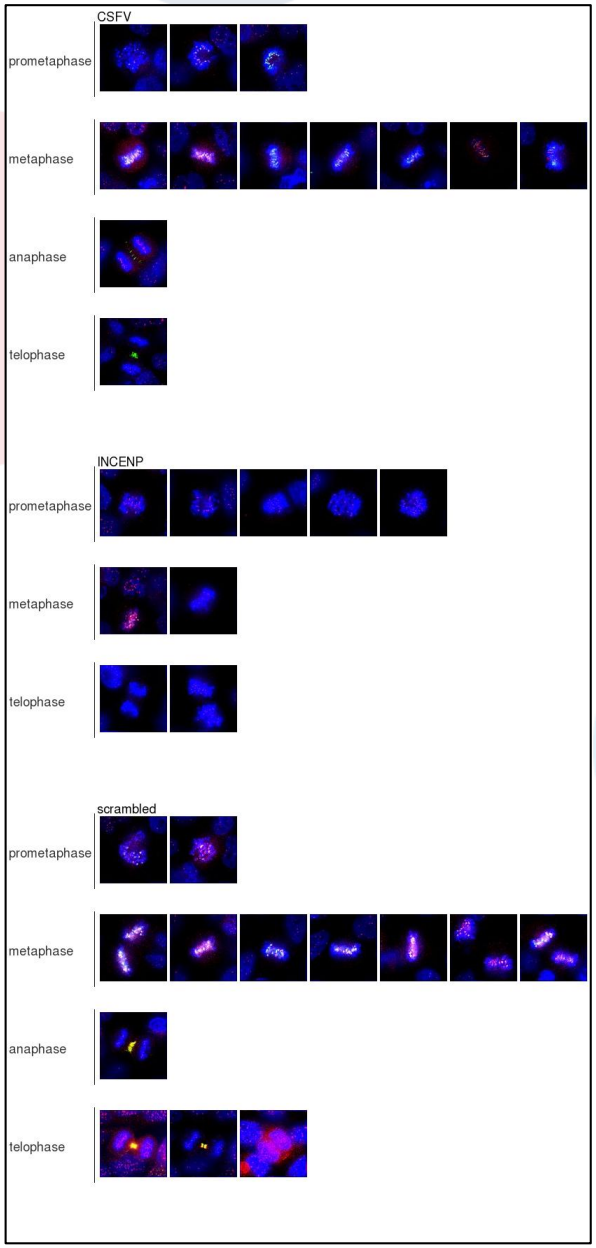


OMERO: Annotations / Tagging



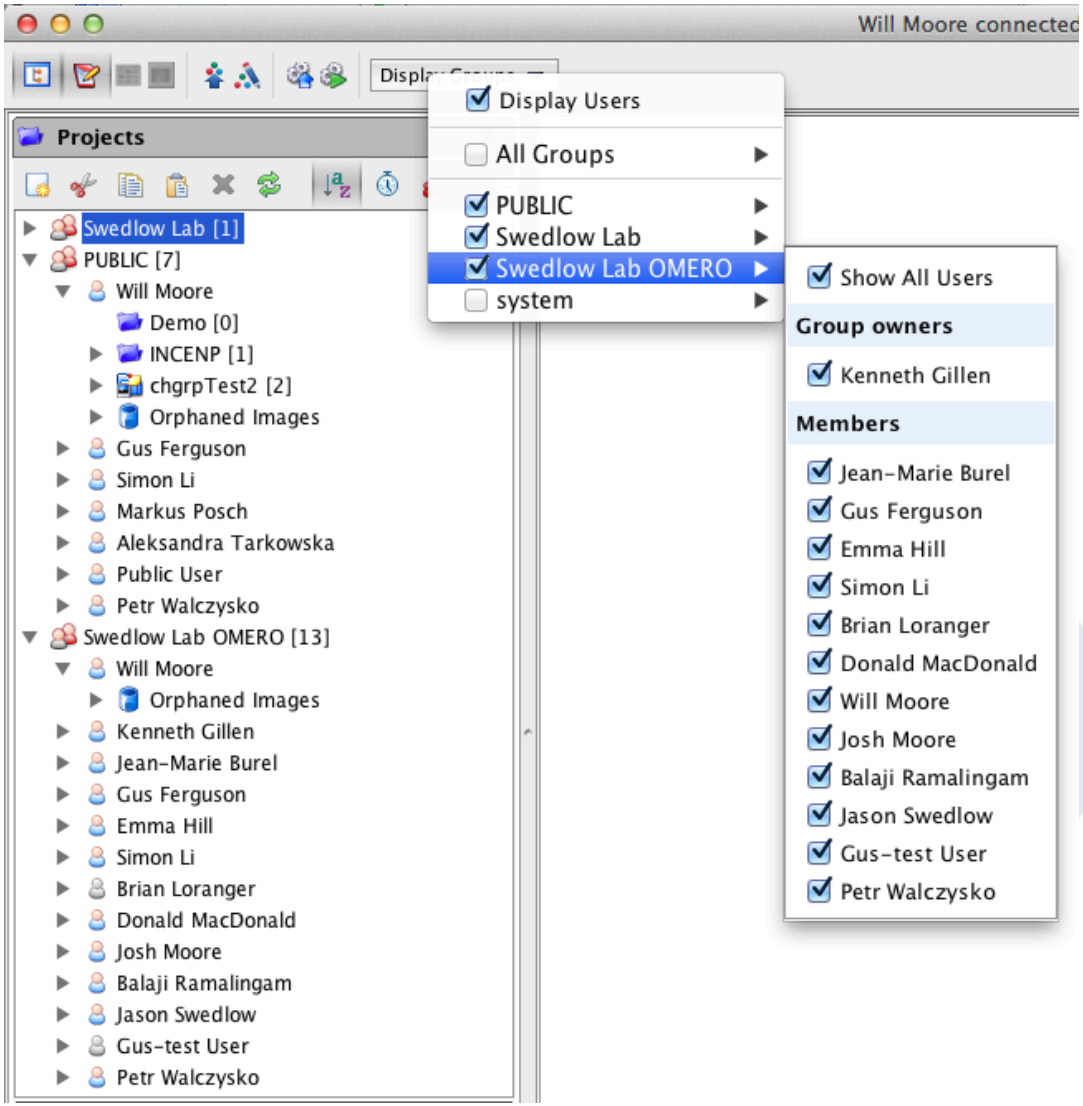
OMERO: Export “Thumbnail Figure”





SHARING DATA WITH OMERO

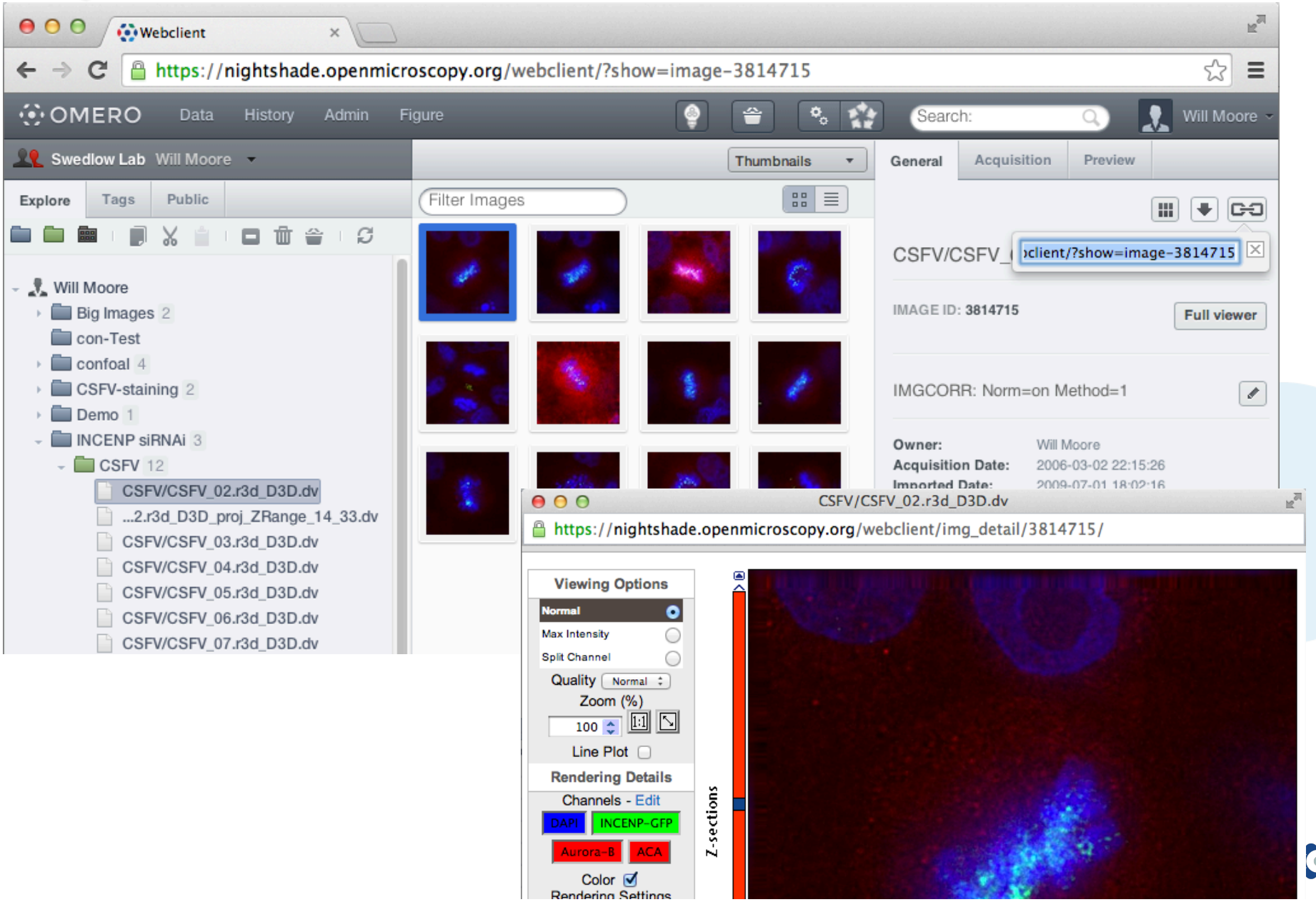
OMERO: Share data within Groups



Group Permissions

PERMISSIONS	Read	Annotate	Write	Privacy
Private	✓	✓	✓	You
Group-Read	✓	✗	✗	
Group-Annotate	✓	✓	✗	Your Group
Group-Write	✓	✓	✓	

Link to data in OMERO.web



OMERO:
Data Publication

Centre for Gene Regulation & Expression

University of Dundee

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Website:	Open Microscopy Environment
Related Links:	Glencoe Software Incorporated

P-TRE_10_R3D_D3D.dv

https://nightshade.openmicroscopy.org/webgateway/img_detail/3933597/

Viewing Options

Normal | Max Intensity | Split Channel

Quality: Normal

Zoom (%): 100

Line Plot

Rendering Details

Channels - Edit

457 | 528 | 617

Color

Current Image

Z: 43/85 | T: 1/1

Image Information

Image Link

ROI Count: 0

Z-sections

Timepoints

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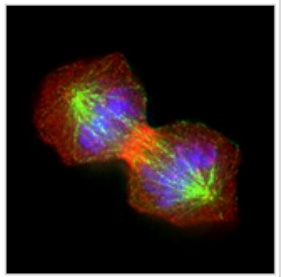
ivered to a pair of new daughter cells. Proper chromosome
ed into chromosomes, and ends of microtubules. Our
rrect attachment of chromosomes to microtubule at a special
he components of cell division, especially in living cells and
tly, we used these tools to discover a new protein, Bod1, that
nes by modulating the activity of Aurora B protein kinase. We
ner workings of the centromere and kinetochore of the mitotic

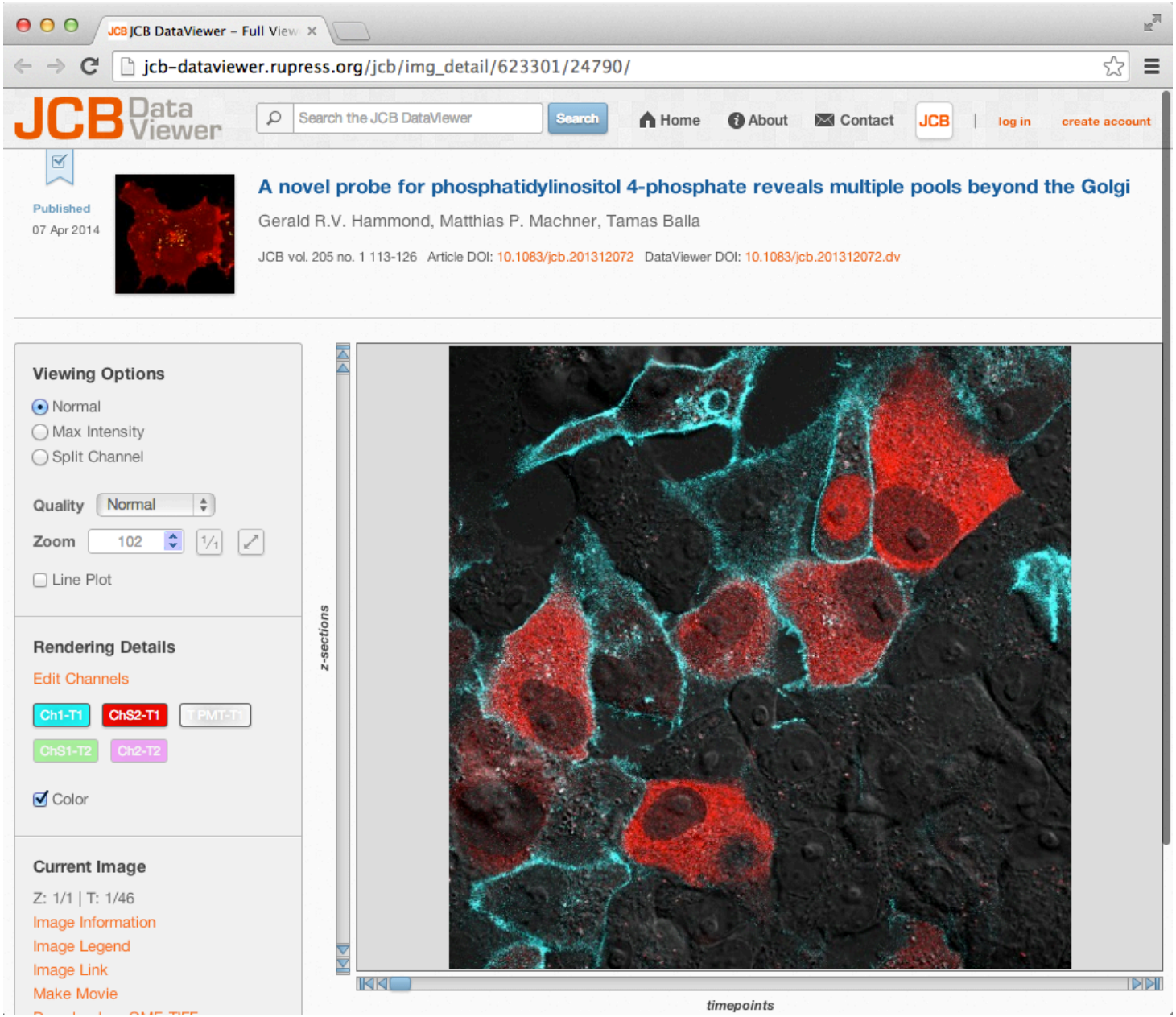
erstand this data, we, long with our collaborators, formed the
anslators and data management software for imaging
see the Consortium's web site.

viewed in OMERO by clicking on the thumbnail.



INCENP (red) localization in a dividing cell, also stained for microtubules (green) and DNA (blue). Click on the thumbnail to view and manipulate the image in OMERO.

OMERO Data Publication: JCB Data Viewer



ANALYSIS WITH OMERO

OMERO.scripts: Kymographs example

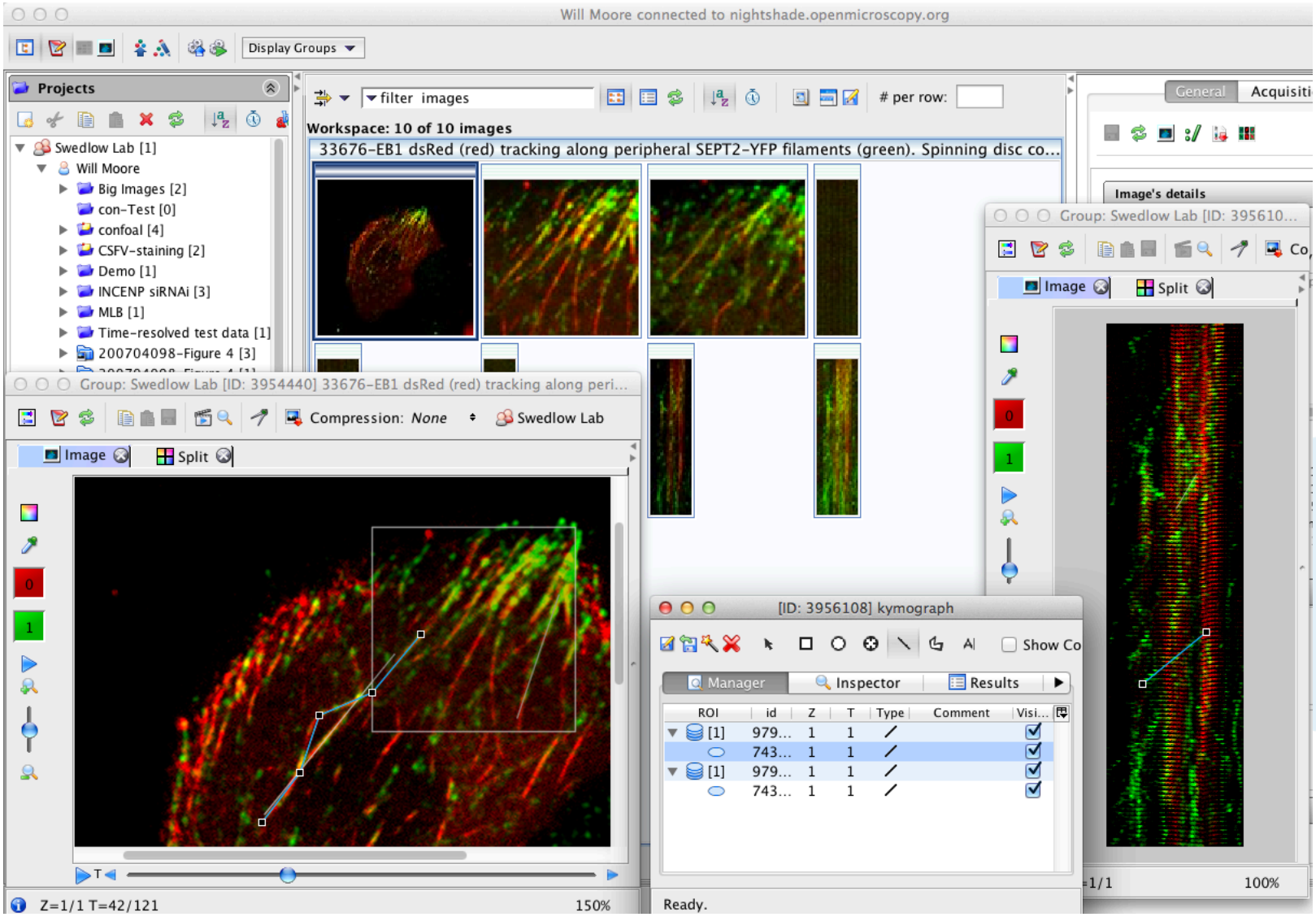
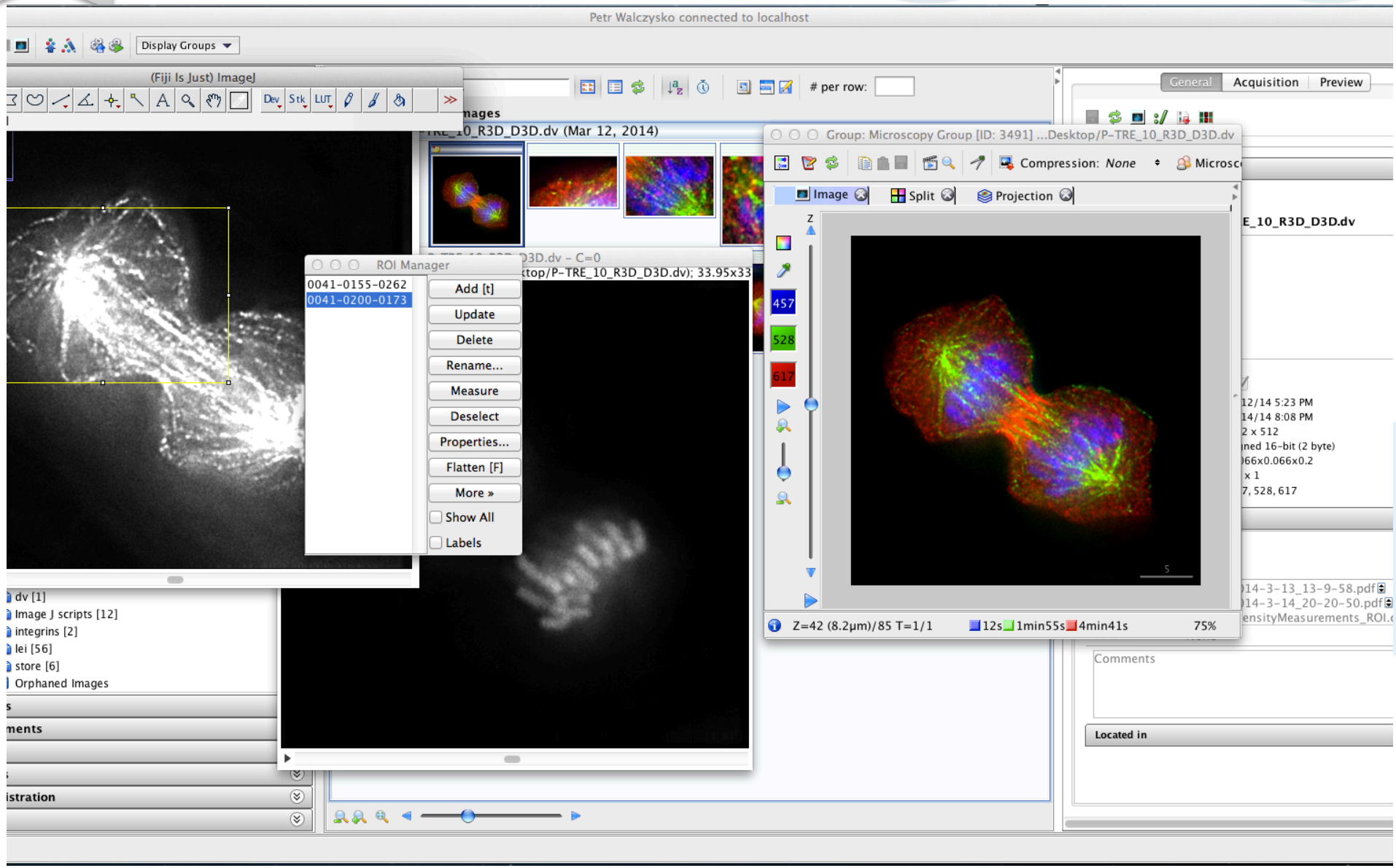


Image from Bowen et al. JCB 2011

OMERO and ImageJ

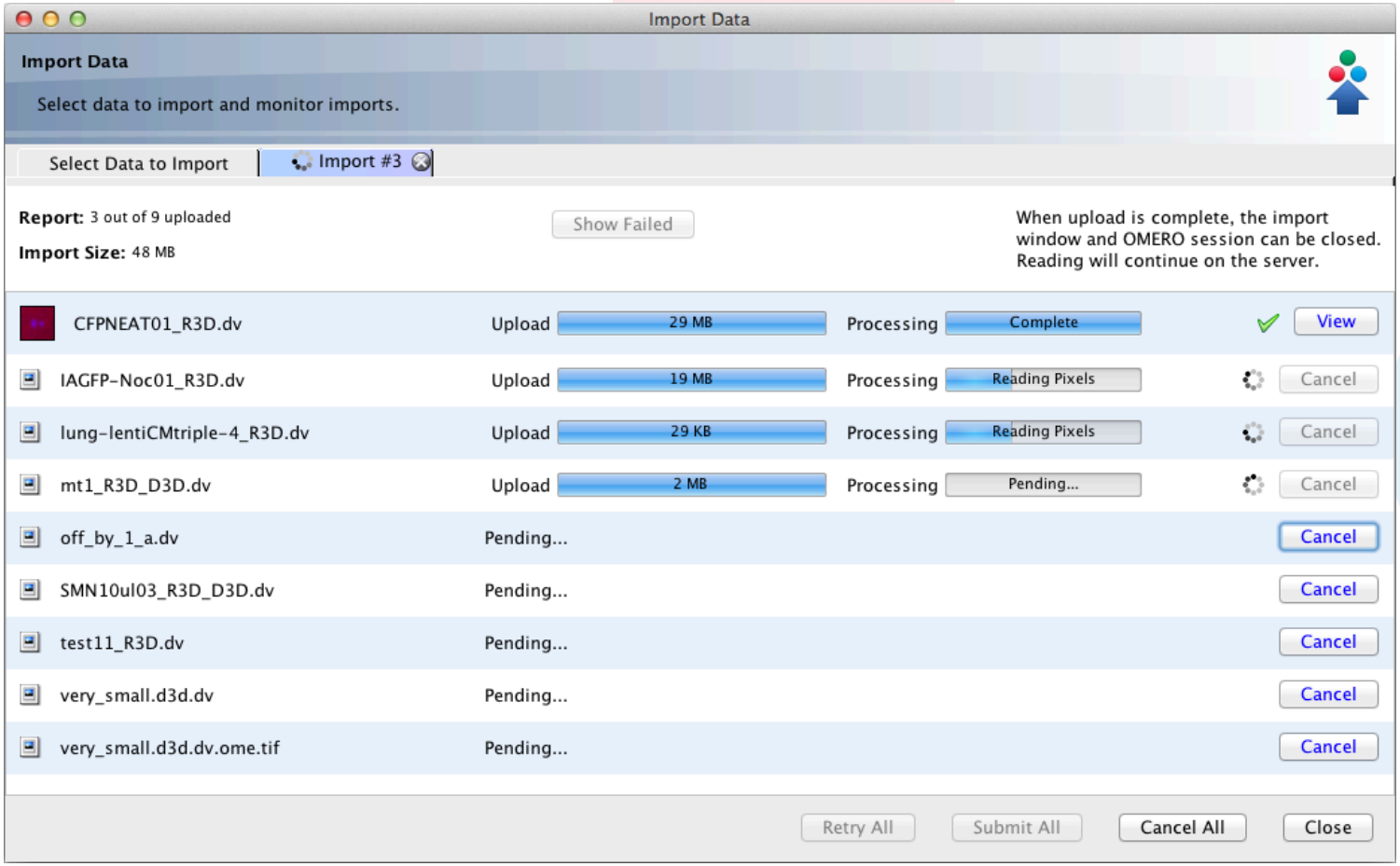


Jean-Marie Burel, Dundee; Curtis Rueden & Kevin Eliceiri, Univ Wisconsin, Madison

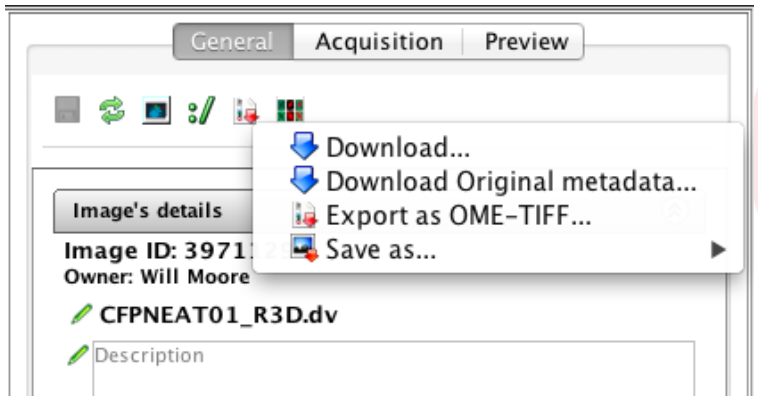
WHAT'S NEW IN OMERO?

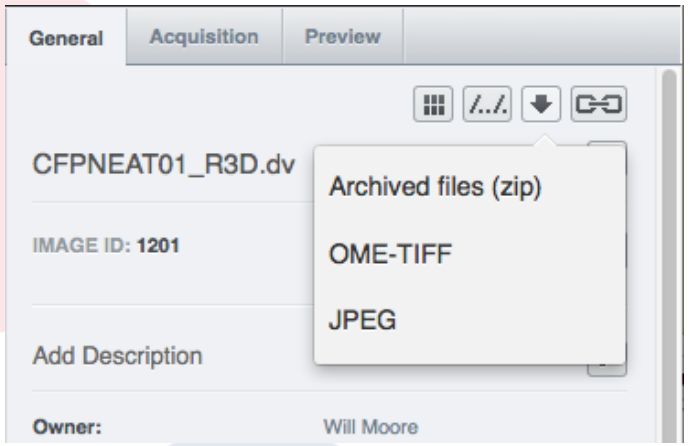
OMERO 5

- Original data is uploaded on import
- No need to “Archive”
- No data duplication
- “In-place” import for sysadmins via command-line



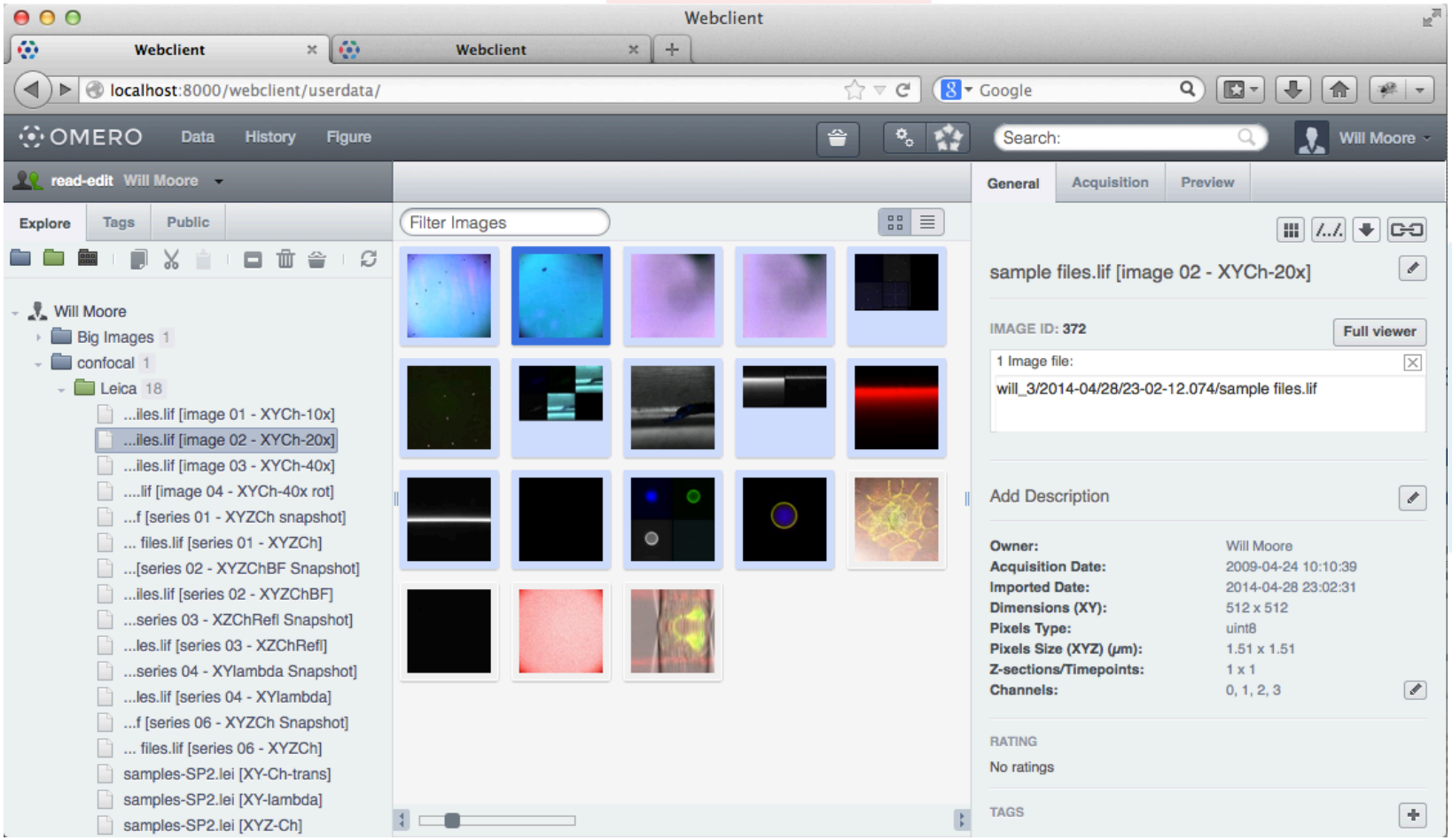
OMERO 5: Access to Original Data



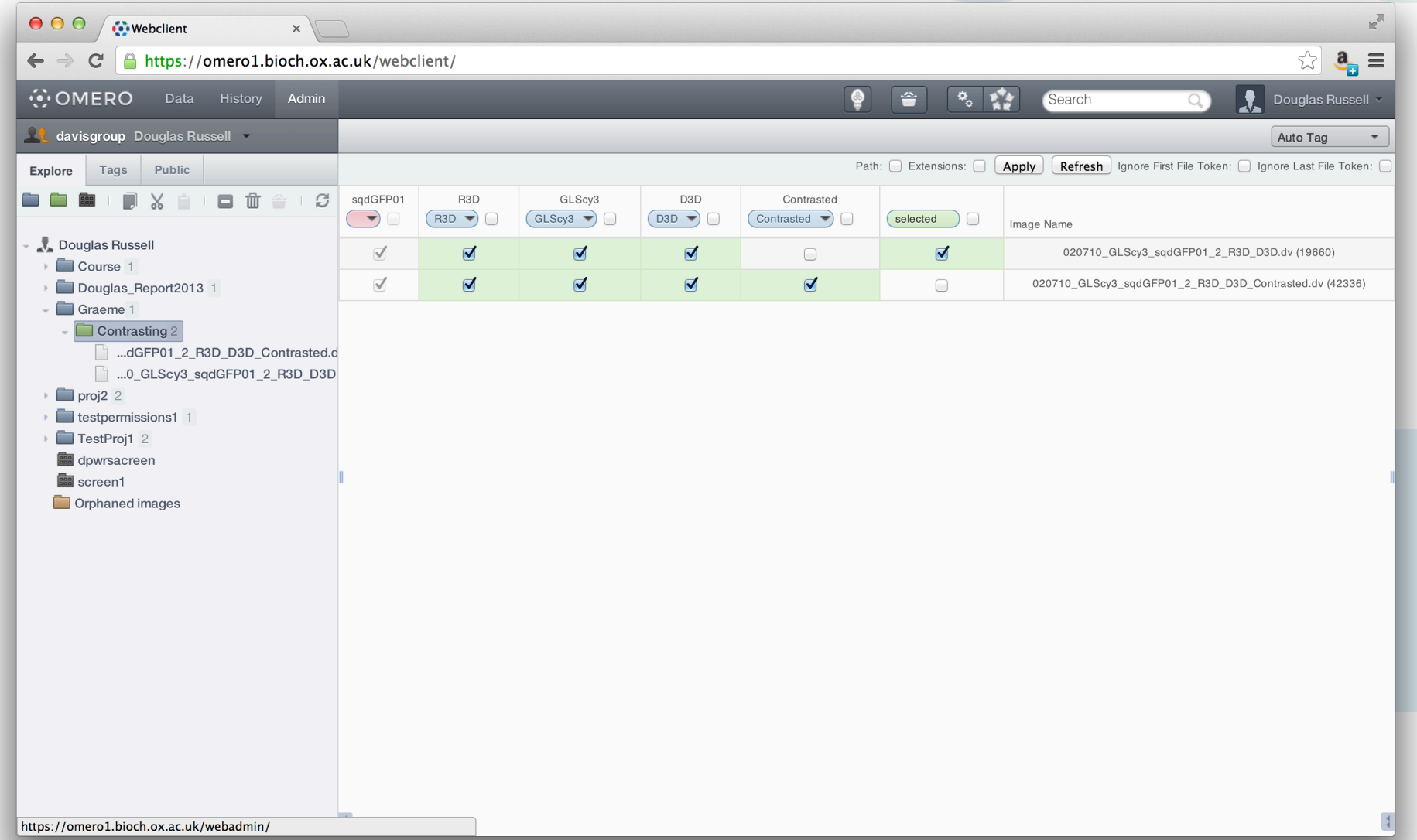


OMERO 5: Filesets

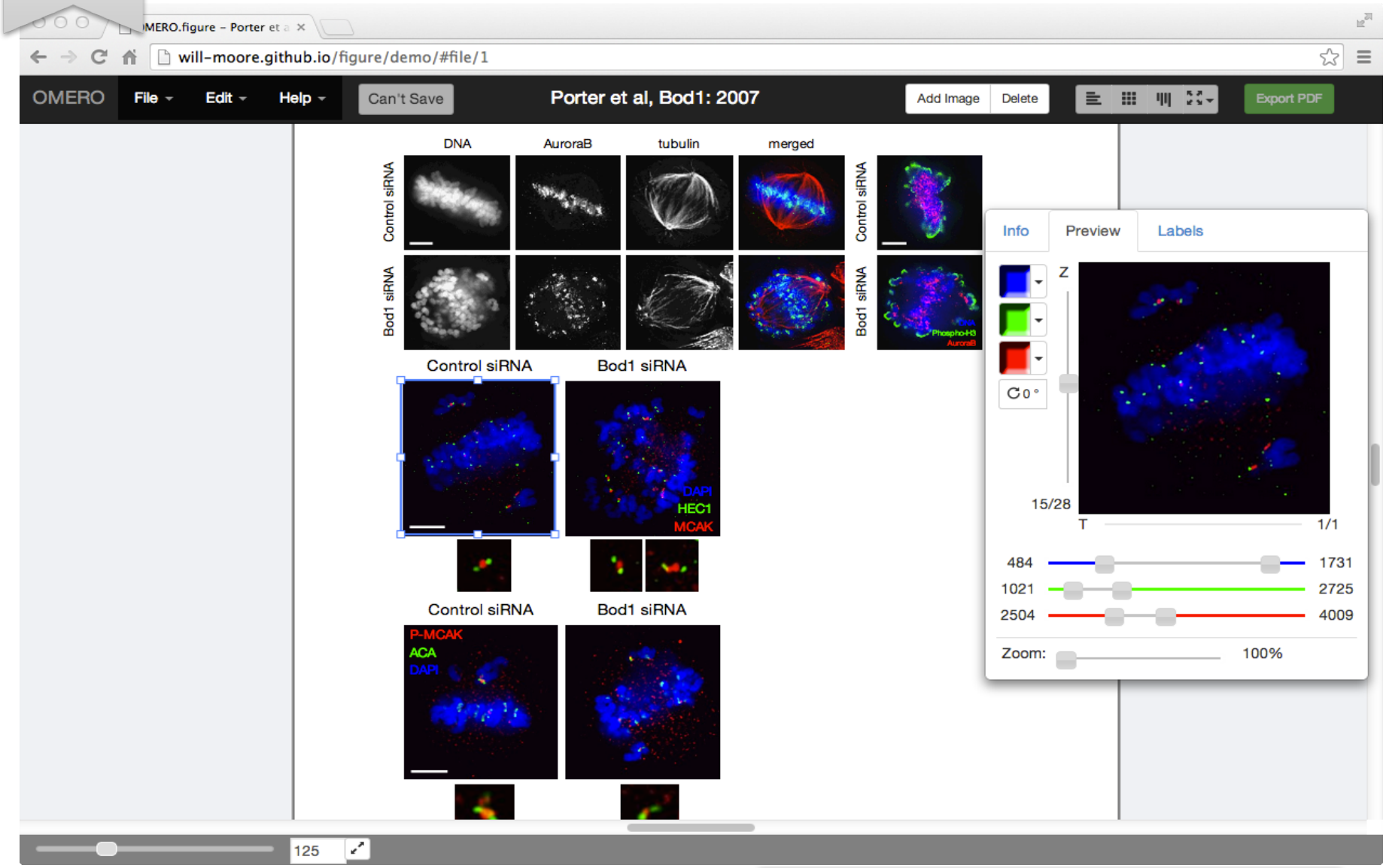
- Some formats have many images from a single file / import
- E.g. Leica LIF, Leica LEI, Zeiss mdb
- Indicated by light-coloured selection of thumbnails
- A Fileset of images cannot be partially deleted or changed group



OMERO.webtagging



OMERO.figure



http://will-moore.github.io/figure/

Thank you!!!

Please come to the workshop: 2-4pm

wellcome trust

MRC Medical Research Council