



Open Microscopy Environment Developer's Meeting

**Jason Swedlow
Division of Gene Regulation and Expression
Wellcome Trust Biocentre
University of Dundee
Scotland**



OME Dundee



**Jean-Marie
Burel**



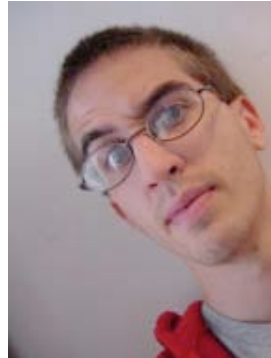
**Donald
McDonald**



**Brian
Loranger**



**Chris
Allan**



**Josh
Moore**



**Aleksandra
Tarkowska**



**Andrew
Patterson**



Usable Image



**Catriona
Macaulay**



**Paula
Forbes**



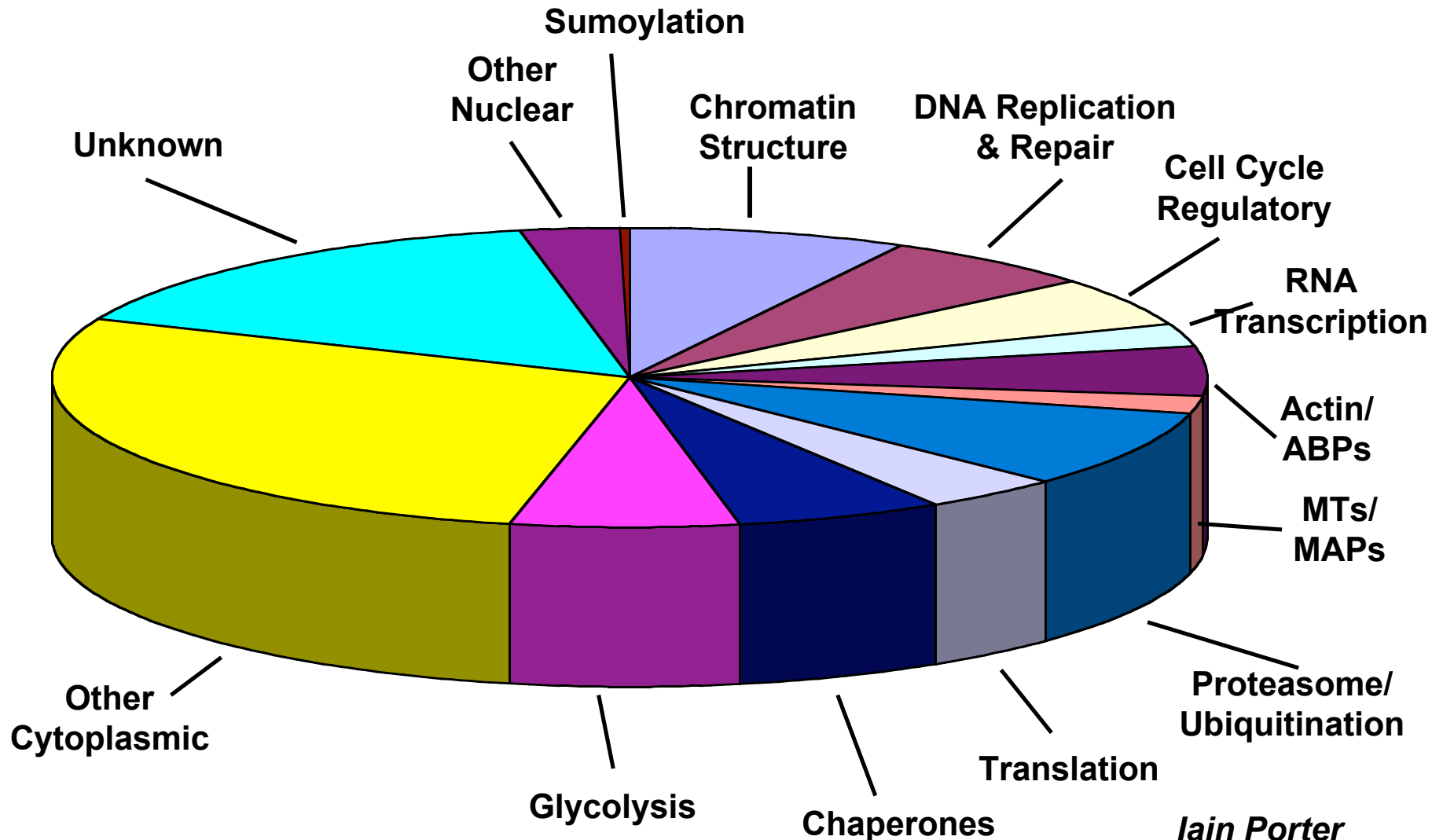
**Xinyi
Jiang**



**David
Sloan**



Mitotic Chromosome Proteomics: LC-MS/MS of MCE/ TIGR Xenopus EST database



Iain Porter
Jens Andersen

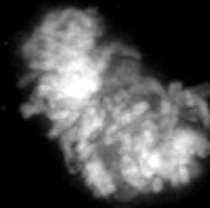


Live cell imaging- shRNA screen of unknowns

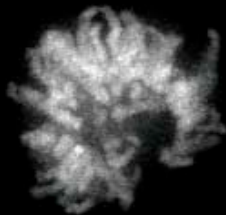
Scram



LRR



Bod1



TS1



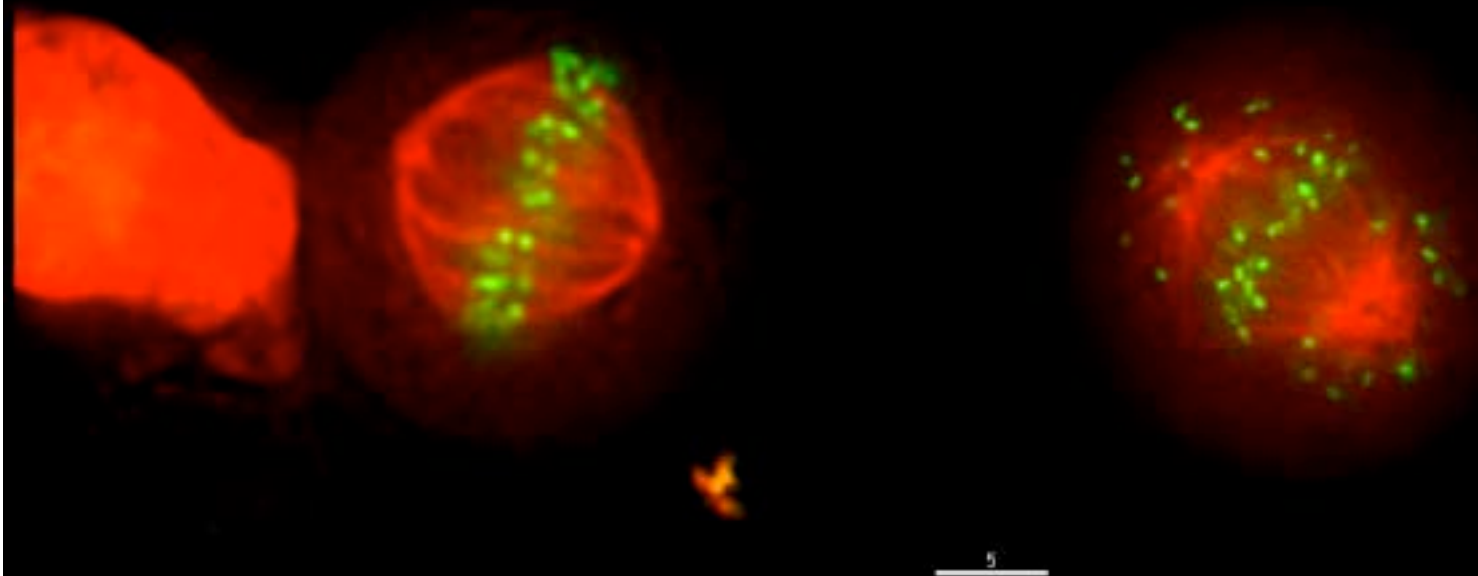
15

Iain Porter
Chris Hunter

Live cell analysis of *Bod1*^{siRNA}

mCherry-tubulin

CENP-B-GFP



Scrambled

Bod1^{RNAi}

Iain Porter



Links Between Mitosis & Neurogenesis



**Chick Embryo
Neural Tube**

GFP-tubulin

3D Stack/7 mins

38 hours total

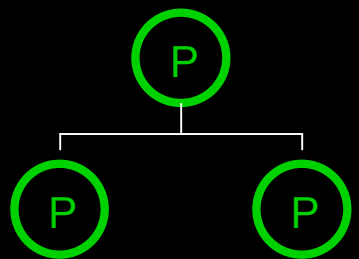


512 x 512 x 30 x 342

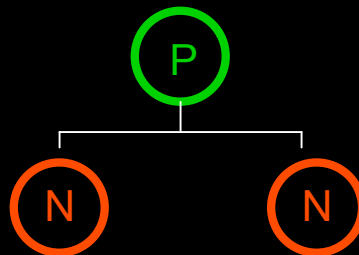
Arwen Wilcock

The Scoreboard:

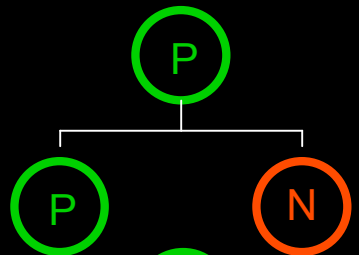
P = Progenitor cell
N = Neuron



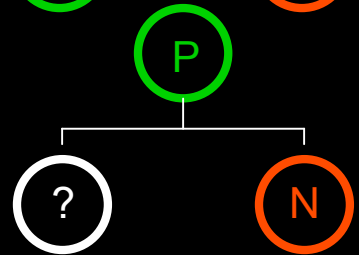
34: 6 7 21



6: 0 0 6



7: 1 3 3



4: 2 0 2

 51

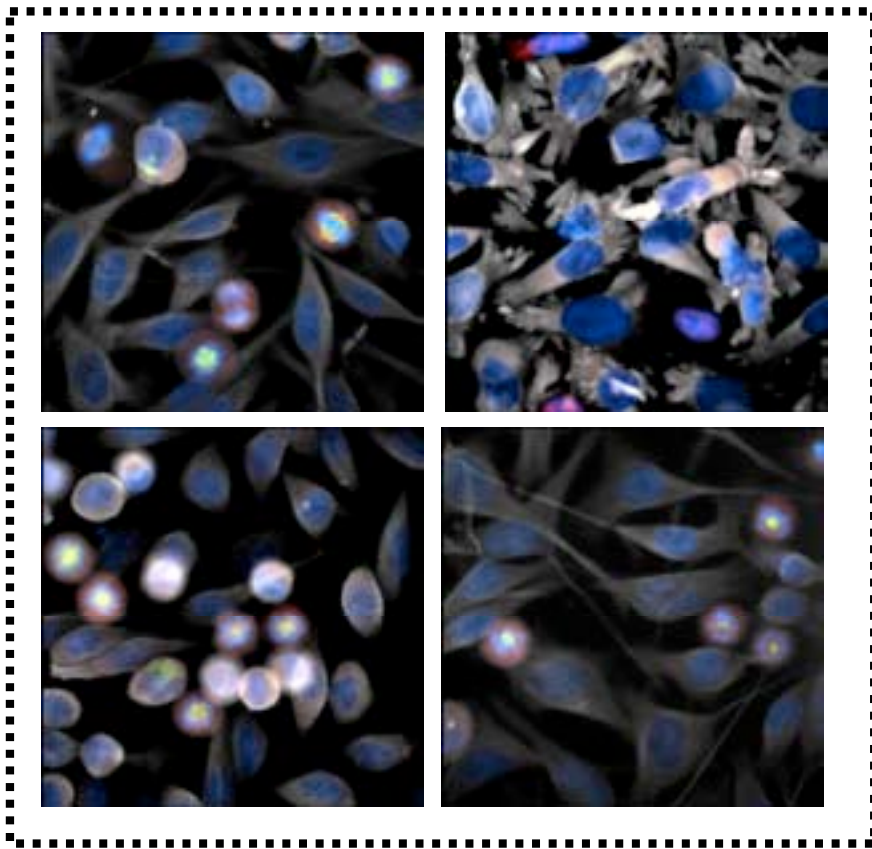
Cell cycle time

P/P 74/86
 < 18hr 45 min

P/N 5/5
 > 18 hr 45 min



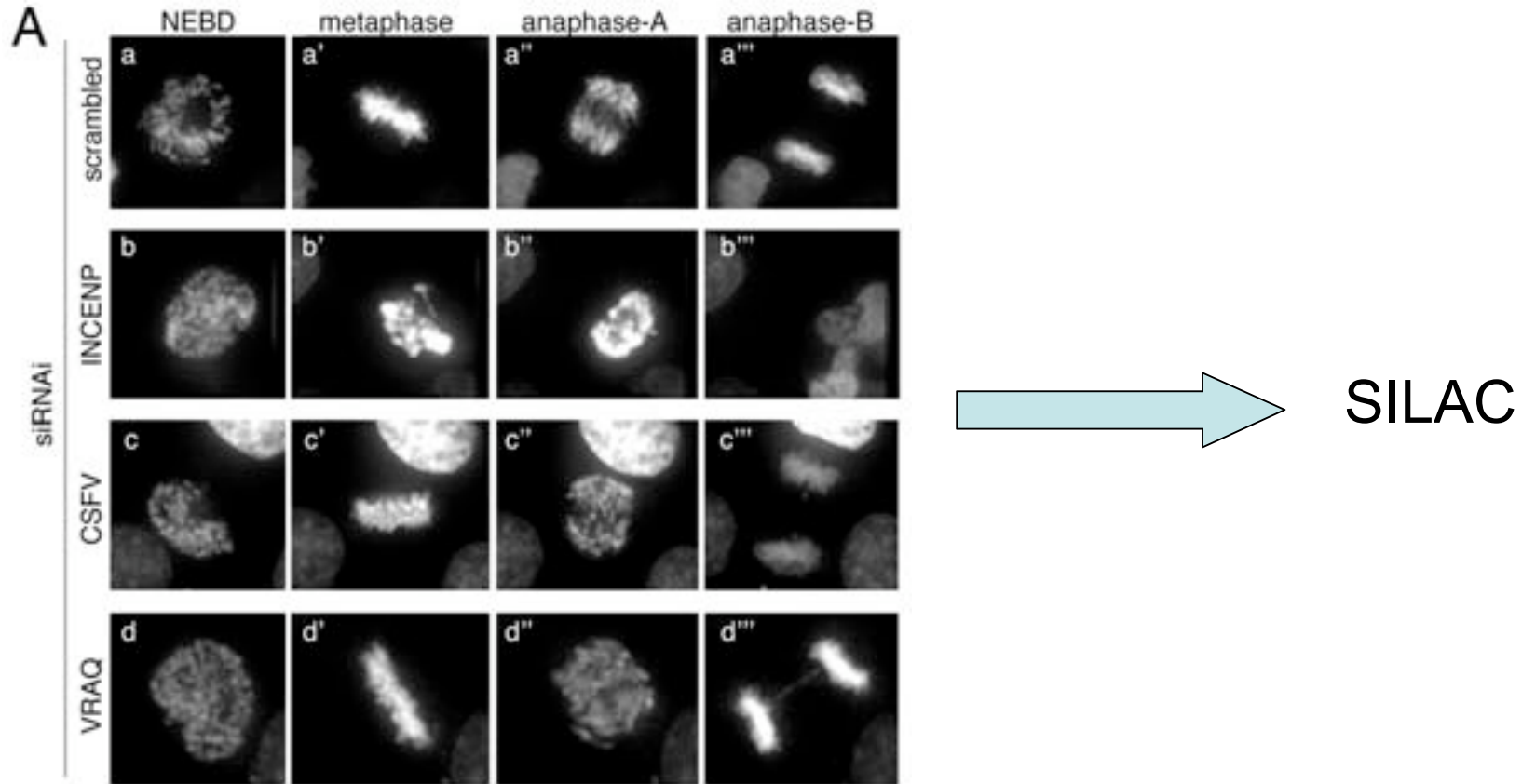
Small molecule phenotypic characterization



Ctrl	Drug N
Drug M	Drug H



Integrating LM and MS data



Lam, Y.W. (2007) *Curr Biol.* 17:749-760.



OMERO Strategic Goals

- Enable use of multi-D imaging in a large facility**
 - Provide data management facilities**
 - Build a foundation for managing complex datasets**
 - Usability**
 - clients**
 - client/server interactions**
 - Remote access for data sharing**
 - Bio-Formats**
 - Drive OME Data Model updates**
 - Diagnostic imaging**
- > to user, OMERO is another reference desktop application**



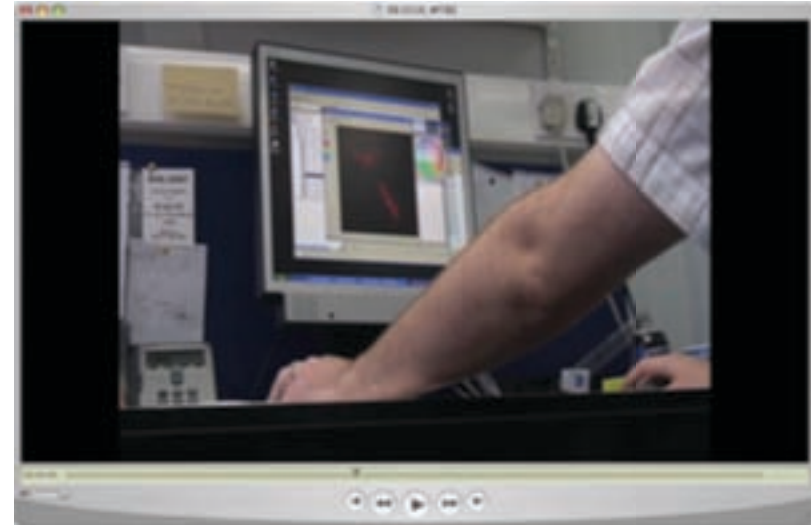
OMERO Process

- trac.openmicroscopy.org.uk
all activity, roadmaps, plans available
maintaining**
- pre-release process**
- Usable Image
all new functionality presented and tested through
Catriona's team**
- > to user, OMERO is another reference desktop
application**



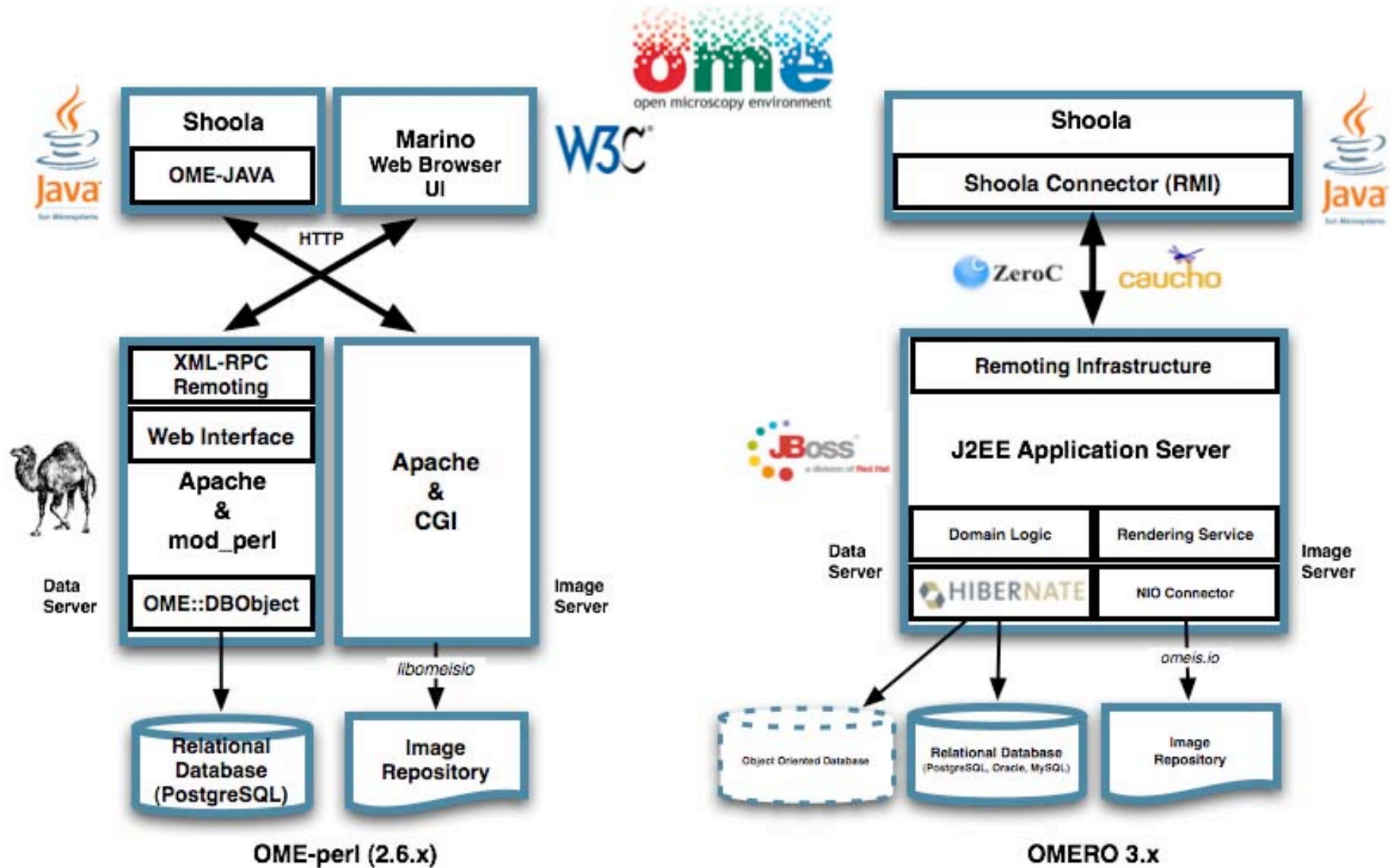
OMERO User Observations

- **Current Location: Swedlow Lab**
 - once a week, in the lab
 - audio and video recordings
 - paper prototyping
 - Developer/user sociology, feedback
- **Explore**
 - new features
 - aspects of work practice
 - Bugs and wishlists
- **Expansion**
 - Taster sessions with other Dundee labs, Inst Pasteur, Madison
 - Web-based survey
 - Across OME projects



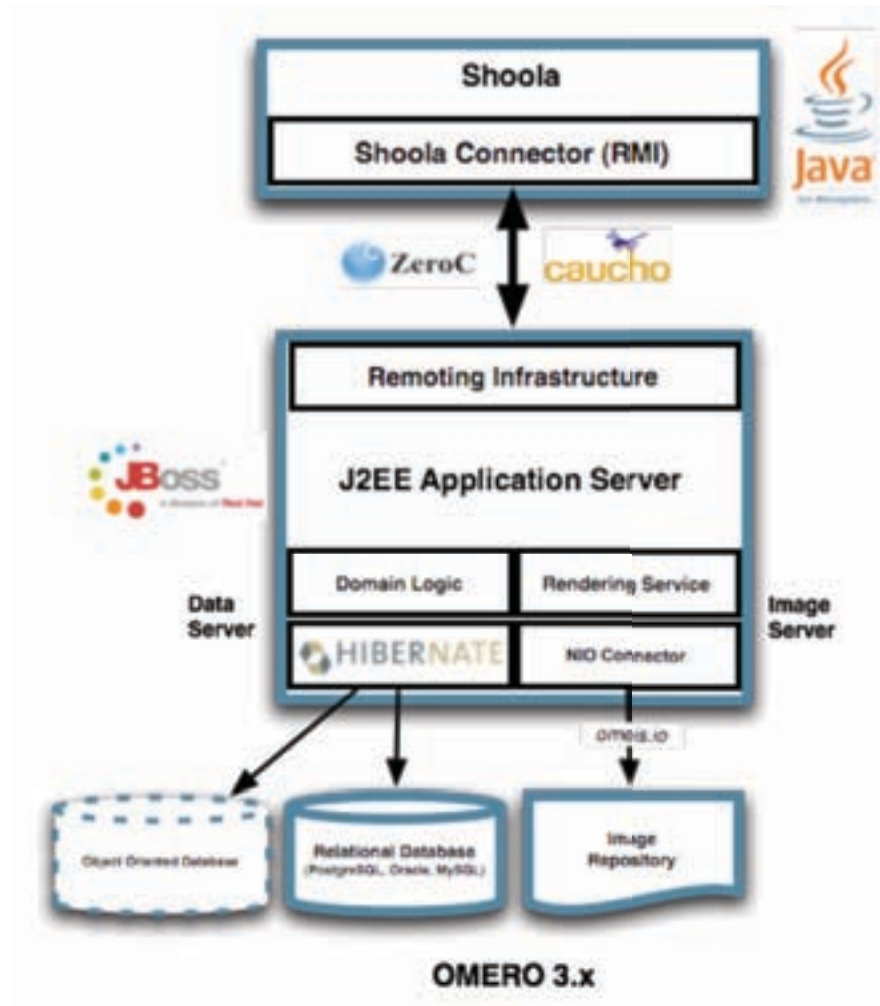


OME & OMERO Architecture





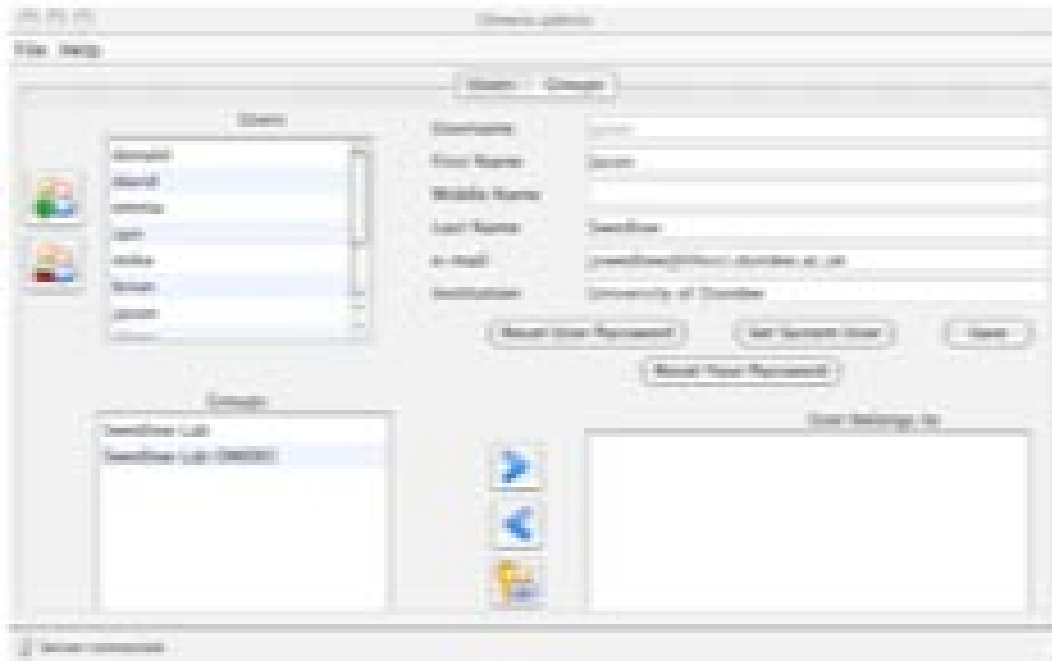
OMERO3.server-Beta1



- JBOSS application
- PostgreSQL (+MySQL and Oracle)
- Data Model fork from OME
- Hibernate
- Rendering Engine and Defs
- JavaRMI for OMERO clients
- basis for GlencoeDME



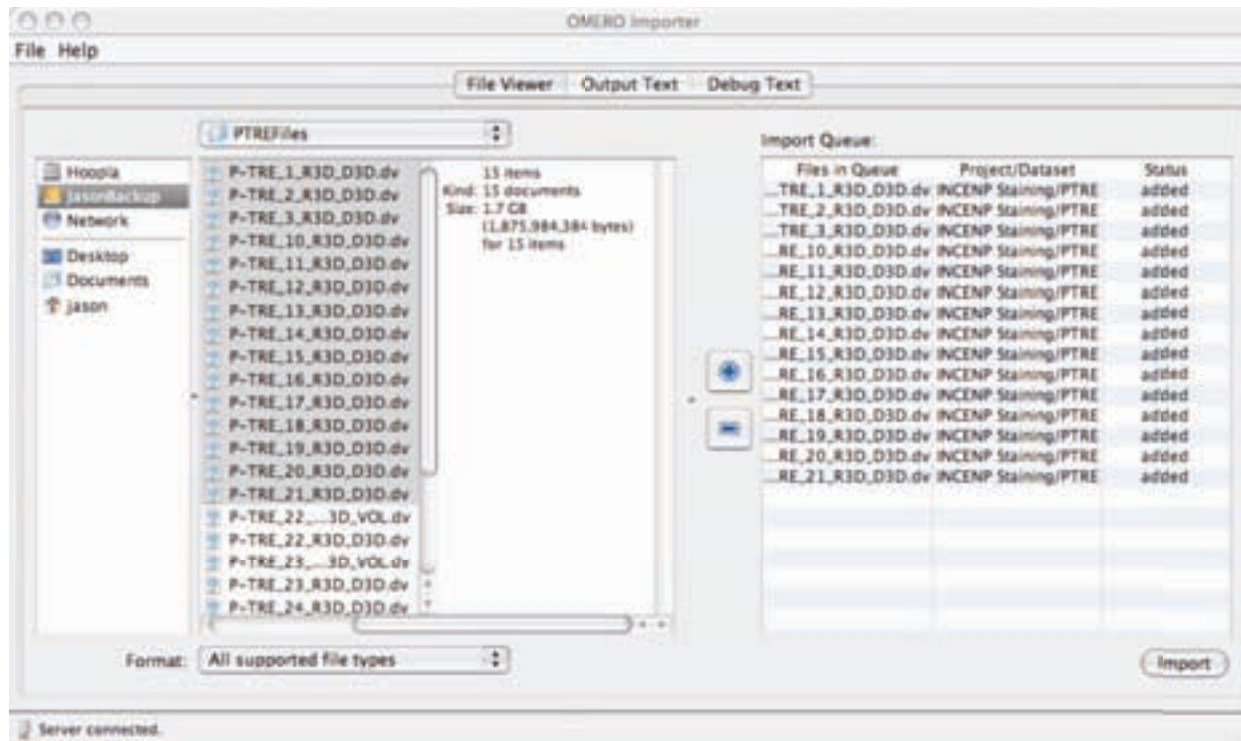
OMERO.admin



- simple group & user admin
- Beta 1.2: problems with linux, Java1.6
- removed as of Beta2



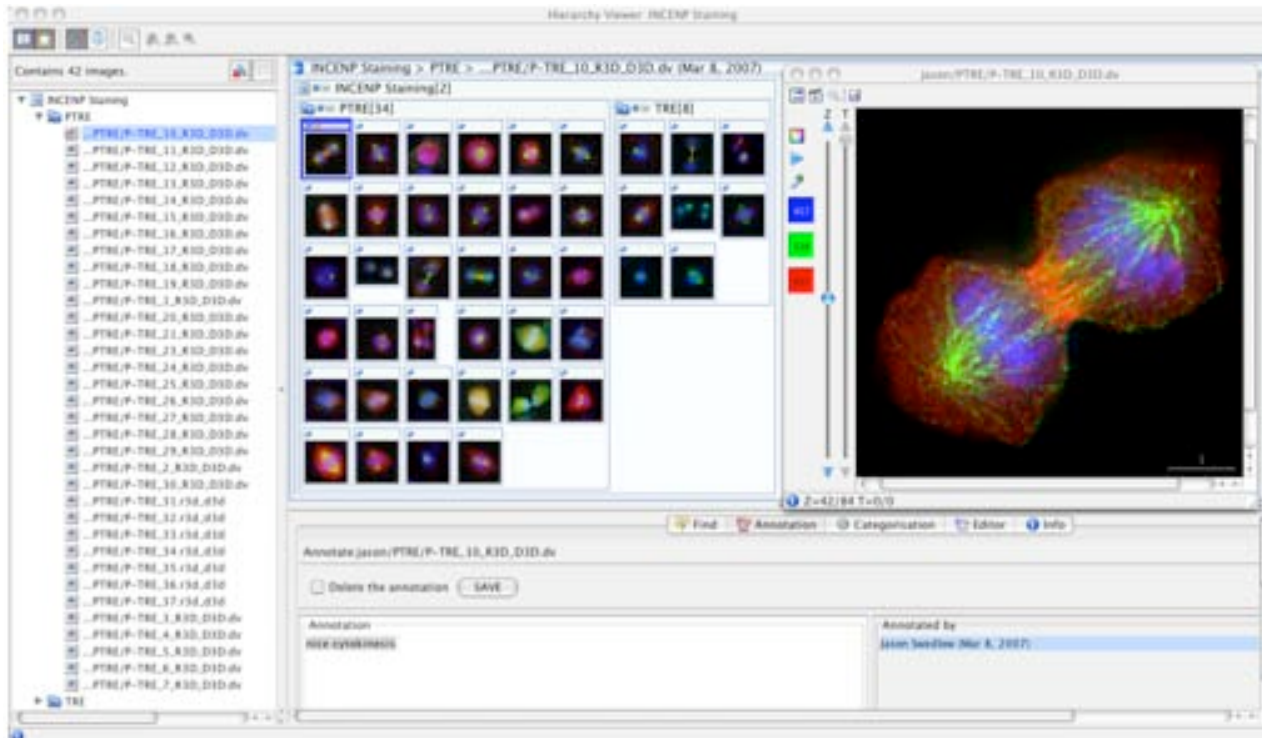
OMERO.importer



- client-side importer
- makes heavy use of Bio-Formats
- easy multi-file selection
- Beta1.1: DV, STK, TIFF
- Beta1.2: Java1.6
- Beta2: LSM510, TCS, STK + .nd, (OME-XML), + PD creation, local directory update, many fixes



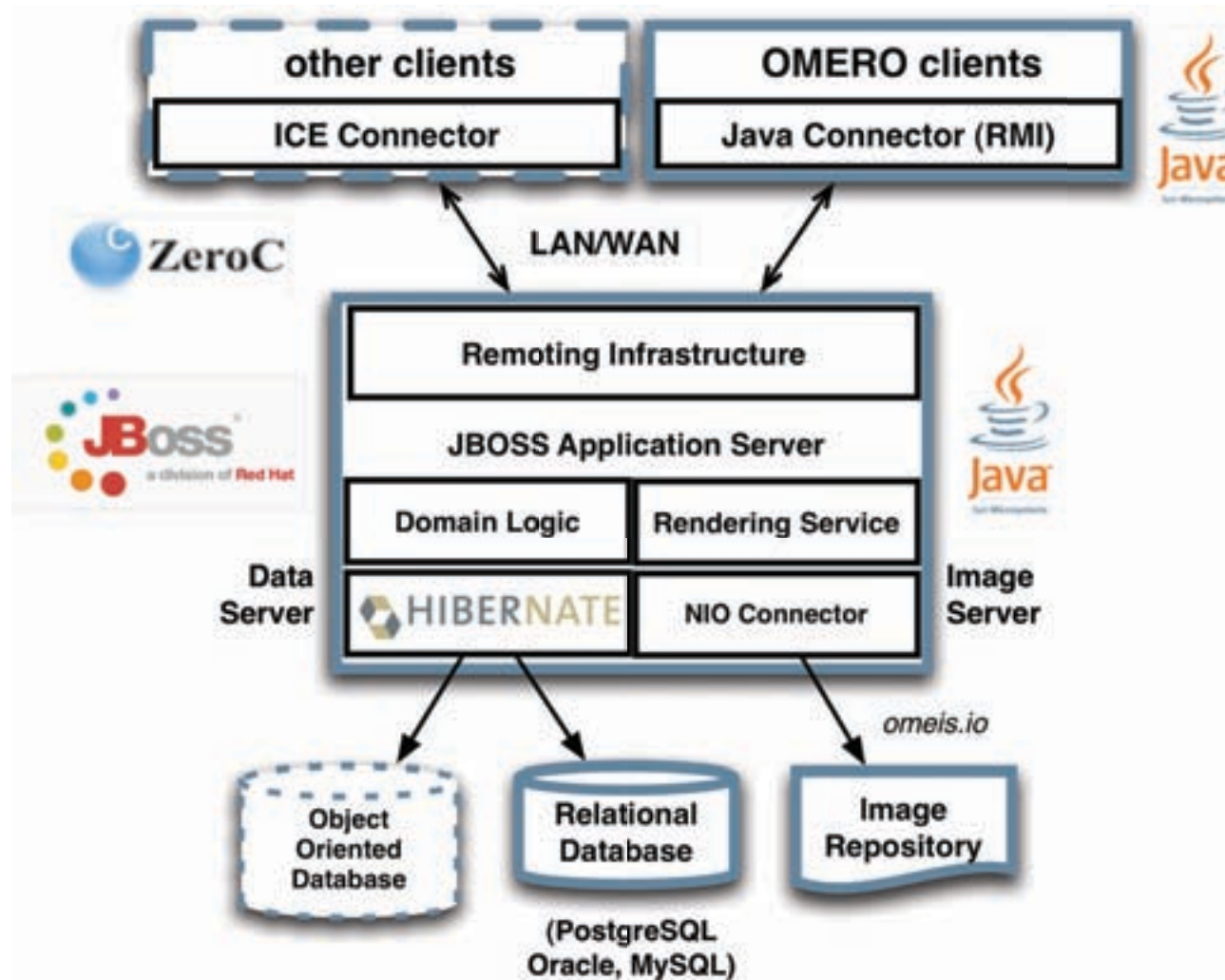
OMERO.insight



- data viz, management
- server-side rendering
- heavy input from UI
- Beta1.2: Java1.6
- Beta2: user groups, ownership, annotation by user, Viewer updates...
- Beta2.1: ROIs (simple measurement, annotation, save)



OMERO3.server-Beta2 (May 21, 2007)



Beta2:

- ICE for C++
- Webadmin
- numerous fixes
- no rendering updates

Beta3... :

- Delete
- Tagging (from UI)
- Indexing
- workflow
- distributed work



OME/OMERO User Meeting

- Paris, Mar 29-30**
- 40 guests, all self-funded**
- commercial, biopharma, and academic**
- all on ome-users; none on ome-devel**
- Notes to go on openmicroscopy.org**
- Usability, implementation and integration for groups, facilities**
- Strong endorsement of OME-TIFF, Bio-Formats (wow!)**
- Integration with existing proven tools, workflows, facilities**
- “OME must come to me”**
- Many good suggestions for .importer, .insight**
- Import is a deal breaker (but sometimes what I want)**
- Anne Danckaert: “just make me this”**
- Analysis as an agent, blobs in many cases, but not all...**



OMERO Server & Clients

