Glencoe Software and OME: 10 years of success

OME Users Meeting 2016
Tuesday, 31st May 2016
Welcome to Glencoe Software
Founded in 2005 10+ Years of success!

Powerful, Proven Image Data Management Solutions and Services

Dundee, UK and Seattle, WA, USA

Exclusive Commercial Partner of Open Microscopy Environment (OME)

Our Team
15 Glencoe Software and 30+ OME employees

Established Worldwide
Customers in Pharma, Biotech, Academia and Technology

Expertise
65+ years of experience in life sciences, imaging and software engineering

Award Winning
BBSRC Innovator of the Year 2011
Commerical & Community Synergy
A Powerful, Exclusive Partnership built on Open Source Foundations

COMMERCIAL LICENSES
Warrantied, Indemnified Data Management Solutions

CUSTOMIZATION
Integration, Consultation, Software Development....

SERVICE & SUPPORT
Commercial Service, Support Agreements
Platform agnostic, enterprise-level data management software

**VIEW** your data anywhere... anytime

**MANAGE** your scientific images and associated metadata

**SHARE** your data securely and easily with anyone whom you chose to, globally

**ANALYZE** your data with all the tools you need from within one simple framework

**PUBLISH** your data with confidence

* OMERO Plus offers full warranty and indemnification
An intuitive, interactive, visualization, analysis and annotation tool

**BROWSER-BASED** OMERO client designed for Digital Pathology workflows; key features:

- **FREE-HAND** annotation, drawing and measurement
- **BRIGHTNESS** contrast and color level adjustment
- **PARAMETRIC URLs** enabling precise sharing
- **ROI** map annotations (more metadata)
- **BRIGHTFIELD & FLOURESCENCE**
- **ENABLES MULTI** views and users
Imaging Domains & Applications
Our Areas of Expertise

Digital Pathology
- Tissue Samples
- WSI
- Histology

Microscopy
- Electron
- Fluorescence

High Content Screening
- High Content Screening
- 3D Electron Tomography

Medical Imaging
- MRI
- CT

Publishing
- Video Injection
- DataViewer

And more...
- X-Ray Crystallography
- Light Sheet Microscopy
- Other data types
... What’s yours?
Interactive visualization of original, multidimensional image data in over 150 different file formats – all in web browser plug-ins

Integrating image data into online publications. Seamlessly.
Technology
Video Injection Service: What Happens in the Server

1. Files are parsed and verified:
   - DOI Excel spreadsheet/CSV,
   - NLM Journal Publishing 2.3 XML,
   - NLM Journal Publishing 3.0 XML,
   - NLM Archive Interchange 3.0 XML,
   - H/W XML, Ambra, ...

2. Videos are copied:
   - Video files are transcoded

3. Metadata is stored in database

Cloud repository

Data InPress

Connect to the Data. We make it simple.
Bringing New Dimensions to Published Image Data

Video Injection Service: What Happens in the Browser

Metadata is retrieved from database → Metadata is examined → Referenced videos identified → Referenced videos located → Video callouts

Cloud repository

For each callout, HTML5-based video player, tile, and legend are injected onto page

Fall back to Flash video player

Examples:
Video 1, Videos 1 and 2, Videos 1, 2, 3; Supplementary Movie S1, Supplementary Movie S1 1-5, ...

Data InPress

On page JavaScript and CSS
Technology
Towards Image Informatics

Digital Image Acquisition System

Data Management, Tagging, Querying

Raw Data

Quantitative Analysis

Processed Data

Visualization
OMERO Plus and Bio-Formats

Data Import & Access

Lab & Facility
LM & EM
1-100 GB/day

HCS
0.1 - 5 TB/day

Digital Pathology
0.01 - 1.2 TB/day

Remote Clients
(aware of Repo/.fs differences)
Providing Image Informatics

- Digital Image Acquisition System
- Raw Data
- Processed Data
- Visualization
- Quantitative Analysis
- Data Management, Tagging, Querying

Tools and Software:
- CellProfiler
- Jupyter
- scikit-learn
- matplotlib
- Pandas
- GridEngine
The Last 6 Months
**Timeline**

**PathViewer launch**
- Dec. 1, 2015

- **HMS Deployment Phase I**
- Jan. 1, 2015

- **NPSC Deployment Phase I**
- Feb. 1, 2015

- **NPSC Deployment Phase II**
- Feb. 1, 2015

- **PathViewer 1.0 first deployment (OMERO)**
- Feb. 1, 2015

- **PathViewer 1.0.1 first deployment (OMERO)**
- Feb. 1, 2015

- **NPSC**
- Deployment Phase II

- **Pharma X Customization**
- Feb. 29, 2016

- **Pharma Y PoC**
- Feb. 29, 2016

- **Data InPress Professional Services**
- Feb. 1, 2015

- **Data InPress Customization**
- Dec. 1, 2015

- **PathViewer 1.0.3 update shipped**
- Feb. 29, 2016
Where to from here?

• More work on scalability for HCS and WSI
• Better and more thorough portfolio of integrations
• Quarterly webinars showcasing Bio-Formats and OMERO
• Development projects with major instrumentation vendors ensuring PFF support
Summary
The Team

Leadership
- Chris Allan

File Formats and Plumbing
- Melissa Linkert

Systems
- Chris MacLeod

Backend Development
- Joshua Ballanco

Design and User Experience
- Liza Unson

Frontend Development
- Andreas Knab

Applications
- Emil Rozbicki

Systems
- File Formats and Plumbing
- Backend Development
Our Solutions
Let’s work together

Terabyte Scale Imaging
(LM, EM, HCS, DP, MI) *

Image Informatics Solutions

Images as Knowledge

Expertise

Solutions

* (light microscopy, electron microscopy, high content screening, digital pathology, medical imaging)
Thank you!

Visit us at www.glencoesoftware.com for more info, or follow us on Twitter @glencoesoftware