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Seminar Announcement

- All Are Welcome -



Speaker: **Prof. Jason Swedlow**

Professor of Quantitative Cell Biology
University of Dundee, UK

Title: **OME's Bio-Formats, OMERO, & IDR: Open Tools for Accessing, Integrating, Mining and Publishing Image Data @ Scale**

Date: **13 March 2018 (Tuesday)**
Time: **11.00am – 12.00pm**
Venue: **IMB Seminar Room (6.49/50), Neuros Level 6, Biopolis**
Host: **Dr Graham Wright**
(Tel: 6407 0167, email: graham.wright@imb.a-star.edu.sg)

Abstract of the Seminar:

Despite significant advances in biological imaging and analysis, major informatics challenges remain unsolved: file formats are proprietary, storage and analysis facilities are lacking, as are standards for sharing image data and results. The Open Microscopy Environment (OME) is an open-source software framework developed to address these challenges. OME releases specifications and software for managing image datasets and integrating them with other scientific data. OME's Bio-Formats and OMERO are used in 1000's of labs worldwide to enable discovery with imaging.

We have used Bio-Formats and OMERO to build solutions for sharing and publishing imaging data. The Image Data Resource (IDR; http://idr.openmicroscopy.org) includes image data linked to >40 independent studies from genetic, RNAi, chemical, localisation and geographic high content screens, super-resolution microscopy, and digital pathology. Datasets range from several GBs to tens of TBs. Wherever possible, we have integrated image data with all relevant experimental, imaging and analytic metadata. 89% of the phenotypes recorded by study authors are mapped to ontological annotations, primarily using the CMPO and EFO ontologies. With this metadata integration, we have run queries across studies to identify gene networks that link to cellular phenotypes. We are currently testing the hypotheses that result from these queries using human induced pluripotent stem cell-based models of proliferation and differentiation.

In addition to these topics, I will provide an update on the Euro-BioImaging and Global BioImaging projects—their goals, activities and progress over the last years, and their future activities.

About the Speaker:

Dr. Swedlow received his Ph.D. in Biophysics from the University of California, San Francisco after completing a B.A. in Chemistry at Brandeis University in Massachusetts. He joined the Wellcome Trust Biocentre at the University of Dundee in the United Kingdom following postdoctoral training at UCSF and Harvard Medical School in the U.S. Dr. Swedlow is currently Professor of Quantitative Cell Biology at the University of Dundee. His research interests are the mechanisms and regulation of chromosome segregation during mitotic cell division, and the development of software tools for accessing, processing, sharing and publishing large scientific image datasets. Dr. Swedlow is a co-founder of the Open Microscopy Environment (OME), an international consortium that develops and releases open source software for biological imaging. He also co- founded Glencoe Software, Inc., which commercializes and customizes OME technology for use in biopharma and data publishing, and BioImagingUK, a consortium of UK imaging scientists who develop, use, or administer imaging solutions for life sciences research. In 2011, Dr. Swedlow was named Social and Overall Innovator of the Year by the BBSRC. In 2012, Dr. Swedlow was named a Fellow of the Royal Society of Edinburgh.