
BiImagingUK & Euro-BiImaging
Towards a world-class, open, shared,
accessible imaging infrastructure

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Talk Outline

BiolmagingUK

- What is it?
- 2012 Strategy Meeting
- 2013 Activities

Euro-Biolmaging

- Goals & Mission
- Summary of 2010 – 2013 Preparatory Phase
- Current Status: The Interim Board

Strategic Community-driven Scientific Infrastructure

UK Science– World Leading & Growing

World-leading UK research

- £3bn invested p.a. in UK research

2011 BIS Report

- International Comparative Performance of the UK
- “The UK’s share of the world’s top 1% of most highly cited papers, which indicates its share of the highest quality published research, was 13.8% in 2010, 2nd only to the US. “
- “The UK’s field-weighted citation impact, an indicator of quality is 2nd only to and closing in on the US... [w]ithin the UK, its constituent countries reflect the UK’s overall positive trend in field-weighted citation “

Biological & Medical Imaging– Strategic Investment

Major investments in biological & medical imaging

- EPSRC Medical Imaging :
Current Grant Portfolio (2011): £79M
MRC & NIHR: ~ £75M
- Wellcome Trust Brain Imaging:
2% of total funding 1990 – 2009
- EPSRC/CRUK Cancer Imaging:
£50M 2008 – 2013
Cancer Imaging Initiative 2013 - ??
- MRC/BBSRC/EPSRC (2012)
Next Generation Optical Microscopy: £25M
- RCUK Framework for Capital Investment (2012)
- BBSRC ALERT13:
£6.7M in imaging related awards

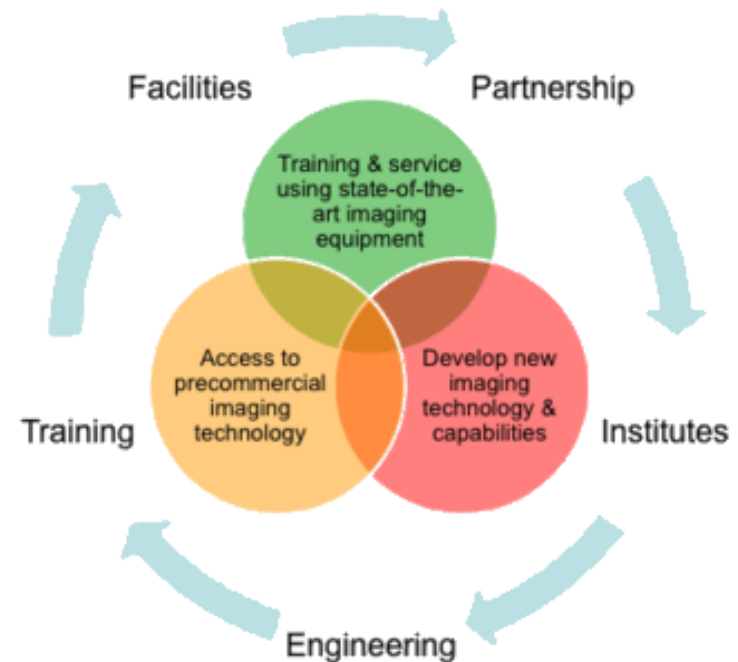
Total investment hard to quantify, so strategic impact analysis difficult

What is BioImagingUK?

Mission & Scope

Aims & Activities

1. To **develop and exploit new imaging technologies**– driving development of and access to state-of-the-art imaging instrumentation.
2. To devise and help implement mechanisms to enable **shared access to the general and specialized expertise** based in life sciences imaging laboratories and facilities throughout the UK.
3. To engage our departments, universities, and funding bodies to develop **career models for the personnel** that develop, maintain, and enable advanced imaging technology for the life sciences.
4. To define **new training programmes**, to provide the foundation for the next advances in life sciences imaging within the UK.
5. To work inclusively to define short and long-term strategy statements to our research funding bodies, in order to help **articulate funding requirements and priorities**.



<http://bioimaginguk.org> (see *Meetings, Working Groups & Documents*)

Unfunded, grassroots consortium of imaging scientists

Meetings Page

Meetings of interest to the BiolmagingUK Community

in reverse chronological order

■ 6th UK Facility Manager Meeting Jan 6-7 2014

- Organiser: [Michelle Peckham](#)
- Registration [Form](#). **NOW CLOSED**
- Meeting [Info](#)
- Provisional Programme ([PDF](#))
- Location: Conference Auditorium, University of Leeds. [GMaps](#) or University of Leeds Map ([PDF](#)); The Meeting Page at rms.org.uk has lots of great tips for getting to the meeting.

■ Euro-Biolmaging Stakeholders Meeting, Heidelberg, Nov 25-26, 2013

- Meeting [Info](#)
- Registration [Form](#)
- Meeting Agenda ([PDF](#))
- Presentations from the Meeting
 - Status Report-- Oliver Speck ([PDF](#))
 - Access Examples-- Karsten Specht and Judith Klumperman ([PDF](#))
 - Infrastructure Access Model-- John Eriksson ([PDF](#))
 - The Euro-Biolmaging Hub and Node Model and its Governance Structure- Antje Keppler ([PDF](#))
 - The Euro-Biolmaging 1st Open Call for Nodes - Pamela Zolda ([PDF](#))
 - Achievements of Euro-Biolmaging Preparatory Phase ([PDF](#))
 - Next steps towards construction - Benny Geiger ([PDF](#))
 - ESFRI Research Infrastructures and Horizon 2020- Ann Uustalu (European Commission) ([PDF](#))
 - Break-out session Medical Imaging- Aad van der Lugt ([PDF](#))

<http://bioimaginguk.org> (Click on *Meetings*)

BioImagingUK Community

Organising Committee

- Jason Swedlow (Dundee)
- Paul French (Imperial)
- Kurt Andersen (Beatson)
- Nick Long (Imperial)
- Tony Gee (Kings)
- Lucy Collinson (LRI/CRUK)
- David Hawkes (UCL)
- Paul Verkade (Bristol)
- Patrick Hussey (Durham)

BiImagingUK Strategy Meeting

A UK Roadmap for Imaging?

Wellcome Trust, Euston Road
July 2-3, 2012



Why a Strategy Meeting (I)?

Current Success/Future Delivery

Overall Goal: deliver the best, most important, most effective science possible, given the available investment

Technology needed to deliver this science must be the best, most appropriate for the scientific goals & needs.

The status quo (largely) delivers: UK delivers highest research metric/investment

Looking to the Future:

Over the next 10 years, how do we deliver research imaging technology in UK?

- provide necessary infrastructure to underpin world-class science
- keep pace with growing complexity & costs
(equipment, personnel & tech development)

- I. *Bioimaging facilities*** are needed in the UK – including National Facilities, Centres of Excellence, and, critically, Department or Institute level facilities. These serve different complementary roles and an active, world-class, scientific infrastructure requires multiple levels to be developed and sustained.
- II. *Training programmes*** that cover all aspects of bioimaging - EM, optical, ultrasound, X-ray CT, MRI, PET/SPECT, detector technology, probe development, image processing and analysis, modeling, and data management - are the foundation for continued world class performance of UK science. Training programmes that build a sustainable pool of scientific and technical talent must be developed and, for at least some fields, coordinated on regional or national levels.
- III. *Career structures and opportunities*** for bioimaging staff must be developed, to nurture and sustain the critical expertise needed to design, build, run and further develop bioimaging infrastructure and technologies.

Bioimaging on the UK Strategic Roadmap

RCUK Framework for Capital Investment 2012:

“There are many exciting new advances in the complementary imaging technologies...[a] national programme of infrastructure investment is needed to establish national capability in these next generation technologies to maintain the UK at the scientific cutting edge. *Bioimaging UK is one example of an investment for a distributed bioimaging infrastructure proposal that will provide the latest technologies in distributed technical hubs for academic and industrial collaborative access, with an underpinning open-access data repository to enable comparative studies and generate research efficiencies.*”

(emphasis added)

BiolmagingUK– 2013 Activities

Meeting with RCUK & Wellcome Trust:

- Paul French & Jason Swedlow, March 15, 2013
- Strategy Meeting and Summary very important
- Appearance on RCUK Capital Framework a major step
- Articulation of an open grassroots community vision critical and unique
- MRC/BBSRC/EPSRC Next Gen outcomes recognised “community” concept

Euro-Biolmaging Node EoI Call

- April 2013 UCL Mtg
- BBSRC, MRC offered conceptual support
- Support working towards complementary Node applications
- Shared EoI applications list w/ applicants, UK funders, & Euro-Biolmaging

Several impromptu meetings....

BioImagingUK– 2013/2014 Activities

Taking the next steps

- Expand the community
 - plants, biomedical imaging, materials science & physics EM
- BioImagingUK Facility Handbook– Lucy Collinson & Josh Rappaport
- Training & Methodology-- Lucy Collinson
- Imaging Node Models – submitted to RCUK Nov 2013
- Software Node Models – submitted to RCUK Jan 2014
- “Network” Funding– application submitted to BBSRC Feb 2014
 - £100k over 3 yrs: meetings, training, careers
- Extending the community

BiolmagingUK– 2013/2014 Node Models

Imaging Node Models

- OCTOPUS– Dave Clarke
- OXFORD MICRON– Ian Dobbie
- UNIVDUNDEE– Jason Swedlow
- MCMI– Kees Straatman, Josh Rappoport, Tim Self
- LCCI-- Marco Marcello
- IMPERIAL– Martin Spitaler
- BRISTOL– Paul Verkade
- HWU– Rory Duncan
- DURHAM- Tim Hawkins

Software Node Models

- OME– Jason Swedlow
- NOTTINGHAM– Tony Pridmore
- IGMM EDI– Richard Baldock
- EMBI-EBI– Gerard Kleywegt, Helen Parkinson, Alvis Brazma

BiolmagingUK Network– Proposed 2014/2015 Goals

BIS Consultation

- Funding for UK Nodes for Imaging Technology Software and Training

Strategy Meeting

- 2012 Strategy Meeting Follow-up & Refresh
- Expansion of the UK Imaging Community?
- Late 2014/Early 2015?

Training & Careers Activities

Euro-Biolmaging Construction

Priorities for funding?

BIS Consultation 2014

“The Government will publish a Science Capital Roadmap, setting out its long-term strategic vision for a world-leading science and research infrastructure in the autumn. We are seeking evidence on two key questions in order to inform the development of this roadmap:

Q1: What balance should we strike between meeting capital requirements at the individual research project and institution level, relative to the need for large-scale investments at national and international levels?

Q2: What should be the UK's priorities for large scale capital investments in the national interest, including where appropriate collaborating in international projects? “

BIS Consultation 2014: BBSRC Guidance

General guidelines

- Moderate, well-substantiated points
- Professional bodies, networks, etc. very helpful.
- Several responses from diverse perspectives
- Clear & simple terms—explain the scale and significance
- Keep the focus on the grander vision

References to research of significance to BBSRC: state of the art tech, big data, HT biology, genotype→phenotype research, NG bioimaging, international research infrastructure projects

Consider the Q's: big, connected science— large, national-scale investments vs distributed infrastructure

Long-term vision: 2015 – 2021.