

NEOMICS EXPERT WORKING GROUP

MINUTES OF THE SECOND EWG MEETING, 5 JULY 2010

CEH Wallingford

In Attendance

Expert Working Group

Thomas R. Meagher (Chair)	trm3@st-andrews.ac.uk	University of St Andrews
Terry Brown	terry.brown@manchester.ac.uk	University of Manchester
Roger Butlin	r.k.butlin@shef.ac.uk	University of Sheffield
Melody Clark	mscl@bas.ac.uk	British Antarctic Survey
Guy Cochrane	cochrane@ebi.ac.uk	EBI
Steven Paterson	s.paterson@liv.ac.uk	University of Liverpool
James Prosser	j.prosser@abdn.ac.uk	University of Aberdeen
Nico van Straalen	nico.van.straalen@falw.vu.nl	VU University
Jane Thomas-Oates	jeto1@york.ac.uk	University of York

NEOMICS Team

Norman Morrison	norman.morrison@cs.manchester.ac.uk	University of Manchester
Mark Bailey	mbailey@ceh.ac.uk	CEH Wallingford
Peter Kille	kille@cardiff.ac.uk	Cardiff University
Dawn Field	dfield@ceh.ac.uk	CEH Wallingford
Sarah Turner	sltu@ceh.ac.uk	CEH Wallingford
Jason Snape	Jason.Snape@astrazeneca.com	Astrazeneca
Mark Viant	m.viant@bham.ac.uk	University of Birmingham

Research Council Observers

Sarah Collinge	saco@nerc.ac.uk	NERC
Amanda Collis	amanda.collis@bbsrc.ac.uk	BBSRC
Bill Eason	wre@nerc.ac.uk	NERC

Apologies

Expert Working Group

Ewan Birney	birney@ebi.ac.uk	EBI
Tim Gant	twg1@le.ac.uk	MRC, University of Leicester
Jack Gilbert	jagi@pml.ac.uk	Plymouth Marine Laboratory
Simon Hiscock	simon.hiscock@bristol.ac.uk	University of Bristol,
Charles Tyler	c.r.tyler@ex.ac.uk	University of Exeter

NEOMICS Team

Mark Blaxter	mark.blaxter@ed.ac.uk	University of Edinburgh
--------------	-----------------------	-------------------------

Notes:

Participant views are presented for the most part on a non-attributable basis.

The minutes were derived by the Chair from notes provided by N. Morrison and D. Field of the NEOMICS Team.

Welcome –Prof Thomas R. Meagher

Apologies were noted for Ewan Birney, Mark Blaxter, Tim Gant, Jack Gilbert, Simon Hiscock and Jack Tyler.

With minor corrections noted in the list of attendees (Jason Snape to be added), the minutes were approved.

The objectives of the current meeting were outlined by the Chair: to review the several model proposals outlined at our previous meeting, to consider the outputs from the survey and the town meeting, and to discuss further the content of the NEOMICS report and recommendations to be drafted following the meeting.

Current Status of Consultation – Dr Peter Kille

Survey results were summarized in a PowerPoint presentation.

Inputs were received from a broad representation across the environmental community. One major gap that was noted was the atmospheric science community.

Highlights from the analysis of survey results include:

- There is strong agreement that 'omics allows new scientific approaches in which data management and analysis presents novel challenges.
- There is some degree of a perceived disconnect between facilities (e.g. NBAF) in terms of their development versus community demand.
- Fellowships are regarded as key to development of 'omics capacity, but there was no consensus on types of fellowships that should be made available
- There is a need to ring fence funds for training in 'omics. Cross council workshops were regarded as a good idea.
- Studentships that can bid for facilities time.
- NERC scientists do need central NERC facilities (NBAF), but also access to facilities developed elsewhere (e.g. other Research Councils).
- Funding should be science driven.
- 'Omics does not require a new thematic programme, but should be integrated into existing thematic programmes.
- Support more pump priming initiatives is an effective mechanism for uptake of 'omics in environmental science
- There was limited appetite for a monolithic centralized funding approach to 'omics, but rather investment might be made in a distributed facility with different nodes covering different dimensions of need.

A comment was made to the effect that the synthesis centre model that was an emergent recommendation was not meant to be a monolithic centrally controlling centre, but rather a distributed effort.

Review of Town Meeting – Dr Dawn Field

Dawn Field reviewed the Town Meeting, details of which are in the circulated Meeting Report.

There was general agreement that the town meeting was a good idea and that this particular meeting had generated useful findings. There was a strong sense of energetic engagement during the meeting. People were producing a broad overview rather than taking partisan positions.

Synthesis of 'best ideas'– identifying priorities for a NERC 'omics strategy – Discussion led by Prof Thomas Meagher

This was a free-ranging discussion in which a number of useful points were raised, including:

- There was discussion of a recent genomics workshop at the NHM in London where various curatorial issues relating to archiving genomic samples were discussed, including recent investment by the Smithsonian Institution in a BioBank, recent developments in room temperature DNA sample storage, etc.
- The NSF model of Synthesis Centres that are science driven by allowing varying levels of coordination among multiple PIs
- Are there overly long lag times in sample processing in NERC service provision facilities? About 50% of survey respondents said yes.
- Democratization of technologies creates cycles of central service provision followed by distributed provision of the same services.
- This Democratization has worked better for genomics than for other 'omics.
- People want this initiative to be driven by scientific questions. Scientists should be going to the centre and saying this is what we need... how you can support it.
- Maybe a longer-term centre of excellence funding approach within groupings of 5-10 PI's might be effective at developing new areas.
- Fast pace to impacts are important. There is a correlation between perceived impact and fast-track research enabling mechanisms.
- Should NERC have a macro-BBSRC type 'Omics Institute, e.g. TGAC?
- The EcoGenomics Consortium in the Netherlands, a large-scale multiple PI programme, was noted as another national-level approach to development of 'omics. Work packages in the consortium devoted to working with societal partnerships. €120 million allocation. Biobased Ecologically balanced eco chemistry. Genomics is looking at the chemicals in the old economy, to biofuels and synthesizing chemicals that are more biologically based. There are 20 PI's involved in the consortium.
- NSF NESCent operates on a finite budget to provide a short turnaround forum for working groups to form, get together and work through problems.
- NSF NCEAS has given the ecological community a strong voice in funding allocation and public policy development.

Models of delivery for a NERC 'omics strategy – Discussion led by Dr Dawn Field

There is interest in an immediate prospect for a NERC Technologies Theme Action Plan. If developed over the summer, this TAP could feed into the NERC business cycle over the coming year.

There was a general background presented on the NSF model for Synthesis Centres, including a limited description of:

- National Centre for Ecological Analysis and synthesis (NCEAS) <http://www.nceas.ucsb.edu/>
- The National Evolutionary Synthesis Center (NESCent) - <http://www.nescent.org/>
- Environmental Synthesis Center (ESC) - http://www.nsf.gov/pubs/2010/nsf10521/nsf10521.htm?WT.mc_id=USNSF_25

Synthesis of a Strategic Vision – Dr Peter Kille

A model for a proposed Environmental 'Omics Synthesis Centre (EOS) was outlined. This included a graphical representation of a building block model that would represent semiautonomous components that could feed into a scientific synthesis process.

- The foundation blocks would include training opportunities (postgraduate, postdoctoral, and senior PIs)
- Secondary blocks would include placement and exchange opportunities, again at all levels of seniority.
- Tertiary blocks would include workshop mechanisms that would provide direct scientific community input into existing and future Theme Action Plans (e.g.

Technology, Biodiversity, etc.). Tertiary blocks would also include workshop opportunities leading to large-scale scientific initiatives involving multiple PIs, cross-council initiatives, and international collaborations and consortia.

There was general support for EOS vision, though not complete agreement on the details of structure.

Current limitations that might be addressed directly by EOS include: development of data interrogation algorithms (bioinformatics and biostatistics) as integral to NERC science rather than an add-on service provision; a better two-way dialog between current technical provision (NBAF) and the scientific end user community; development of novel scientific directions that keep pace with and indeed push the limits of the rapidly evolving 'omics technology.

It was noted that the NSF Synthesis Centre model would not necessarily translate directly into a UK and NERC context because some of its potential functions are already integrated into NERC through NBAF and the Thematic Programmes. Further development of EOS would require appropriate consultation with such existing structures.

The Final Report – Dr Dawn Field

There was a presentation of the intended report structure, and it was noted that a draft report would be prepared over the few weeks following the meeting by Dr. Peter Kille to be presented to the EWG for input (on or about 16 July) prior to preparing a final draft to be put on the web by NERC for public consultation.

Time lines including next steps

The intent to have a final meeting of the EWG following preliminary email feedback on the draft report was revisited. It was decided that a September meeting would be useful, and it was agreed that venues and possible dates for such a meeting would be explored.

The meeting was adjourned at 16:15.