

## **NERC NEOMICS CONSULTATION**

### **TOWN MEETING: SMALL MOLECULES BIG IMPACTS**

Date: Wednesday/Thursday 19-20<sup>th</sup> of May

Timing: 12.00-16.30/9.00-16.00

Location: Cardiff University (<http://www.cf.ac.uk/locations/maps/index.html>\*)

Host: Dr Peter Kille ([kille@cardiff.ac.uk](mailto:kille@cardiff.ac.uk))

Organizers: The NEOMICS Team and DialogueMatters (<http://www.dialoguematters.co.uk/>)

Authors: NEOMICS Team

### **SUMMARY**

The community event of the NEOMICS consultation, the Town Meeting, was held at the University of Cardiff May 19-20. The two day meeting was structured into a first afternoon of science talks addressing cutting-edge advances in a diverse set of science areas of relevance to NERC. This superbly set the stage for the facilitated meeting that followed on the second day.

#### **Day 1**

##### **Science Drivers**

The day started at 14:00 pm with an introduction by the **Chairman of the NEOMICS Expert Working Group, Prof Thomas R. Meagher**. He welcomed the >50 participants to this open meeting and explained the basic scope of the 2 day meeting. Dr. Bill Eason from NERC, the program manager for this NERC activity then took the stage to overview NERC goals in developing an 'omics strategy. Outcomes must be science driven and reflect true community opinion.

These charge talks were followed by two "**Technology Horizons**" talks given by **Rolf Apweiler** (EBI) on ELIXIR (<http://www.elixir-europe.org/>) and **Jane Rogers**, the Director of the newly established BBSRC Genome Analysis Centre (<http://www.tgac.bbsrc.ac.uk/>) centre. Both talks focused on the need to cope with ever increasing quantities of high-through-put experimental data in the field of 'omics, especially from next generation sequencing technologies.

Following a coffee break came the three talks in the "**Top Science**" session. In brief, **Eske Willerslev** (University of Copenhagen) detailed a series of extraordinary studies using next-generation sequencing to analyze ancient DNA. He stressed that none of these studies had been possible even a few years ago, before the advent of high-throughput DNA sequencing and bioinformatic analysis of short reads lengths. **Mark Blaxter** (Edinburgh University) presented preliminary results from the collaborative Earthworm sequencing project. Strikingly, he stressed that with next generation sequencing capacity (at his GenePool centre) it was possible to take on the in house sequencing of the genome of a eukaryote, something not thinkable a few short years ago. **Joakim Larsson** (University of Gothenburg) finished this session on the subject of the use of 'omic technologies in the monitoring of the environment, in this case, changes in the microbial communities found in freshwater systems contaminated with pharmaceutical pollutants.

##### **Roundtable Discussion and Dinner**

Prof Thomas Meagher then led a lively round table discussion that was followed by a wine reception and a group dinner.

## Day 2: Small molecules big impacts

### The Facilitated Meeting – gauging and capturing community opinions and knowledge

Day 2 allowed participants to brainstorm, prioritize and debate aspects of taking forward NERC research in the area of 'omics. This meeting was organized by professional facilitators, Diana Pound and her colleagues, from DialogueMatters. As part of this strategy, Diana trained six members of the NERC community who then acted as facilitators during the meeting. The services of the DialogueMatters Team were retained for this consultation to ensure open and transparent chance for all viewpoints to be heard and most importantly recorded. This approach was strongly encouraged by NERC and was well-received by the participants. In brief, in such facilitated meetings, participants work primarily in small groups (five on this day) with a facilitator who writes on flip chart pages posted to the wall. This effort resulted in a total of around 300 flip chart pages which were then transcribed verbatim (**Figure 1**). This 50 page document was then subjected to 'emergent processing' to produce a document of clustered ideas with subheaders (55 page document).

Charge questions at the meeting for which verbatim responses were captured included:

*"It is 2030 and development and use of Omics knowledge has made an amazing difference. You and others are chatting and start listing the things that you can now do that have make the biggest difference to how we understand and use the environment. For you the top three things are....."*

Additional sessions were based on:

1. Exploring the context
2. Developing ideas about innovative and high impact Environmental Omics research
3. The Competitive Edge
4. Working Effectively Together to have a bigger impact

Perhaps the best example of the ability of this approach to help elicit community-consensus ideas for the future was the prioritization exercise described on page 28 of report and summarize in **Table 1**.

**Table 1. A prioritization exercise from the Town Meeting.** Participants were asked "Out of everything, you have heard and discussed over the last two days what are the two ideas that you would most like to see future research focus on?" The Top four priorities (of 15) and the total number of votes received are shown below.

Ideas	Total
<b>Understanding Fitness and Species Adaptation</b>	<b>15</b>
<b>Ecosystems – systems thinking - understanding and limits</b>	<b>14</b>
<b>Global 'Hidden' Biodiversity</b>	<b>14</b>
<b>Climate Change Effects</b>	<b>10</b>

This document was reviewed by the NEOMICS Expert Working Group meeting and will be used as primary evidence of community-level opinions in the production of the NEOMICS final report to be delivered to NERC Sept 2010.

## CONCLUSIONS

The NEOMICS Town Meeting was well-attended and received a high overall score in the feedback survey (the approach was strongly supported by those attending including the Expert Working Group with an average of 8.5 out of a maximum score of 10). The use of professional facilitation enabled a broad unbiased view to be determined. The outputs, together with those from the online survey from all those invited to attend, have given NERC and the NEOMICS team a substantial evidence trail for making recommendation on the future of NERC omics strategy. The NEOMICS team would strongly recommend to NERC the use of such facilitated meetings in the future for similar activities.



**Figure 1. The evidence trail from the facilitated NEOMICS Town Meeting.** Knowledge and opinions from participants were captured verbatim by facilitators writing on flip chart sheets placed around the walls of the meeting room. This allowed the different break out groups to move around the room to tackle different questions. Many of the sessions involved having each working group add input to the same question (contributions from each group were recorded in a different color). This ensured broad and comprehensive coverage of a particular subject. Over 300 flip chart sheets were generated using this process (A). Exercises also included participants writing on post-it notes which were then clustered into higher-level topics by the facilitation team – i.e. “*global hidden biodiversity*” (B). The flip chart sheet shown in B is part of the prioritization exercise described in **Table 1**.