

Cross-Institute Programme for Sustainable Soil Function

SoilCIP

Newsletter for April 2008



North Wyke Research

The Institute of Grassland and Environmental Research (IGER) has merged into Aberystwyth University and, together with the University's Institutes of Biological Sciences and Rural Sciences, has formed the new [Institute of Biological, Environmental & Rural Sciences](#) (IBERS). In parallel, North Wyke Research Station is now 'North Wyke Research' and has begun to join Rothamsted Research. Rothamsted is now formally responsible for administering North Wyke, but full incorporation will take a little longer. North Wyke Research now has its own website at:

<http://www.northwyke.bbsrc.ac.uk/>

North Wyke ISPG Science Day

On 22nd April North Wyke held a very enjoyable and profitable review of its ISPG science plans. The morning focused on the GESS Programme, which is part of the SoilCIP. Notes and actions from the meeting will be available shortly. We must try and ensure that more Rothamsted SoilCIP staff attend the next Science day.

Grants won

Steve McGrath, Penny Hirsch and Fangjie Zhao have won a US National Science Foundation grant with Professor Eric Triplett of the University of Florida entitled "How are archaeal diversity, abundance, and function regulated in agroecosystems"? The objectives of this research are to determine the: 1) the abundance and diversity of archaea in treatments that vary in disturbance, succession, and N fertilization regimes; 2) archaeal and bacterial abundance and diversity in response to changes in cropping systems and soil pH; 3) the limit of soil archaeal diversity without statistical extrapolation using pyrosequencing of amplified 16S rRNA genes; 4) abundance and diversity of archaea in 100 soils that represent a broad array of soil/ecosystem types; and 5) ammonia oxidizing activity of soil archaea compared to the ammonia oxidizing bacteria. The soils used will include a number from the long-term experiments at Rothamsted.

Steve and Zhao have also won a BBSRC-DFID proposal to study arsenic levels in rice. Arsenic contamination of rice paddies is a major problem in many parts of

Asia, caused by irrigation with arsenic contaminated groundwater, pollution resulting from base and precious metal mining and the use of municipal solid waste as fertilizer. Steve and Zhao, with researchers from India, Bangladesh and China will look at types of rice which have lower take-up levels of inorganic arsenic to unravel the genetic basis for this desirable characteristic. A start up meeting has already been held in India.

Brian Kerry has been awarded a BBSRC-DFID grant on fighting nematode worms with fungus that will fall into the expanded SoilCIP remit. Root-knot nematodes are microscopic worms that feed on plant roots, stunting their growth and causing yield losses of US\$70 billion each year. Brian and his team, with Kenyan colleagues, are harnessing a natural soil fungus to destroy the worms' eggs reducing damage to crops.

Award

Felicity Crotty, one of our DTG PhD students, has been selected to receive a \$450 D.E. Johnston Memorial Award to facilitate her attendance at the 2008 Acarology Summer Program. The award will be applied towards fee reduction. Well done Felicity (and Phil Murray her supervisor). Please let me know of any awards received. They are good news.

Cross-Institute links

I visited Warwick-HRI on 16th April and spoke about the SoilCIP and collaboration with Simon Bright, Clive Rahn and others. We identified some areas of common interest including: (1) modelling biogeochemical cycles and soil-plant systems; (2) how to examine the effects of nutrition on root development; (3) C and N cycling and possible collaborative monitoring of fungi on the Highfield and Park Grass experiments; (4) S cycling in soils. Clive and Simon will consider active alignment of part or all of Warwick's soils work with the key science objectives of SoilCIP.

Publications

Soil Science on D-Day. Before the day that changed history, scientists were asked to make it possible. Their story is featured in the Spring issue of *Soil Survey Horizons*, in which Murray Lark has described this unprecedented challenge in "Science on the Normandy Beaches: J.D. Bernal and the Prediction of Soil Trafficability for Operation Overlord," *Soil Surv. Horiz.* 49:12-15 (Spring, 2008). The article is available for free access at:

https://www.soils.org/soil_survey_horizons/pdf/featured-article-08-1.pdf

Soils Journals

Our former SoilCIP colleague, Steve Jarvis, has taken over from Peter Loveland as Editor of the *European Journal of Soil Science (EJSS)*. The *EJSS* office at Rothamsted formally closed on 31st March and we said 'goodbye' to Peter Loveland, Dick Webster and Marion Tibbetts, although Dick remains as a Rothamsted Fellow in our Biomathematics and Bioinformatics Department and Peter as a Visiting Scientist in the SoilCIP. We wish Steve well in his new role, based at the University of Exeter. Please consider *EJSS* when you write up your research. It's 'our journal' and has a pretty good Impact factor (2.0 for 2006, in third place behind *Soil Biology and Biochemistry* and *Geoderma*).

Extracts from the

BIOSCIENCES FEDERATION

**Report on science policy
March 2008**

Two items of interest spotted this month

RESEARCH COUNCILS & CHARITIES

A review of the implementation of full economic costs for funding university research has been commissioned by Research Councils UK and will assess whether the change to full economic costs has put universities on track for delivering long-term financial sustainability in research as intended. The review will be conducted in co-operation with Universities UK, and the Funding Councils for Higher Education in England, Scotland, Wales and Northern Ireland. In a bid to make university research sustainable the government announced that research councils would fund 80 per cent of the full economic costs of research from April 2006, with the intention to move to paying close to 100 per cent by the beginning of the next decade. Previously universities had to meet the indirect costs of research themselves. Other sponsors of research, including business and government departments are also expected to meet the full costs of research they commission, under the new funding arrangements. The review will examine the extent to which the policy objectives relating to sustainability of the science base have been delivered, how the additional funding resulting from FEC has been used by universities and the impact of FEC on interactions with industry, government departments and charities. The review will draw on statistical data produced by the funding councils for the Research Funders Forum and on the recent survey on the impact of FEC by UUK. It will also be informed by the research councils' Funding Assurance Programme, which is assessing the effectiveness with which HEIs have been operating FEC arrangements. The review will report to RCUK by December 2008. <http://www.rcuk.ac.uk/news/080313.htm>

Research promoting partnerships between the UK and China and India will be supported under a scheme intended to strengthen links between the nations. The programme was originally set up by Research Councils UK to encourage collaboration between UK and US researchers. Following the comprehensive spending review, the government has now made £12m available to RCUK to extend the initiative to include China and India over the period 2008 to 2011. Lord Sainsbury's review of UK Science and Innovation policies concluded that the US Science Bridges had "helped to develop entrepreneurial skills amongst researchers and supported the commercial development of technology and expertise in spin-outs," and recommended the

extension of it to China and India.
<http://www.nerc.ac.uk/funding/news/sciencebridges.asp>
[Note. Goetz Richter is drafting a bid for a project with Indian colleagues.]

QUOTE OF THE MONTH

"At the end of the day, it is a Minister's prerogative to present which statistics on their policy he wishes to". Mike Hughes, Director of the National Statistics and Policy Group at the Office for National Statistics, fails to surprise the IUSS Committee inquiry into '*The use of Government statistics in evidence-based policy-making*'! (Uncorrected transcript of oral evidence given on 19th March 08).

The full Biosciences Federation report can be seen at the BSF Science Policy web page:

http://www.bsf.ac.uk/science_policy.htm

Go to the bottom of the web page and click on 'FULL REPORT'.

Website

Kevin and I have not had much feedback on the revised website. We assume that means you like it, but we still need photos, graphs, etc, and links to individuals or groups/teams:

http://www.rothamsted.bbsrc.ac.uk/aen/SoilCIP_update/

Keith Goulding, 30th April 2008