

Cross-Institute Programme for Sustainable Soil Function

SoilCIP

Newsletter for January 2007



Doctoral Training Grant (DTG)

We have at least five, possibly six, applicants for the six PhD proposals currently advertised, with a closing date of 31st January 2007. Candidates have been visiting prospective supervisors at North Wyke and Rothamsted and we hope to interview the best in February. Details of the projects can still be seen at:

<http://www.sustainablesoilcip.org.uk/studship.htm>

Cross-Institute visits and links

I attended a meeting to highlight results from the NERC's atmospheric research programmes, 'Our Changing Atmosphere', on 23rd January, and had a useful discussion with Caroline Fenwick, NERC, about BBSRC/NERC SoilCIP links. Details of some of the research from the programmes can be seen at:

'Clouds, Water Vapour and Climate':

<http://www.nerc.ac.uk/research/programmes/cwvc/>

'Polluted Troposphere': <http://www.nerc.ac.uk/research/programmes/troposphere/>

'UTLS-ozone': <http://www.nerc.ac.uk/research/programmes/utls/>

'COSMAS': <http://www.nerc.ac.uk/research/programmes/cosmas/>

Other CIP links

I discussed CIP management with Tina Barsby, the project coordinator for 'Monogram', on 22nd January. Monogram's purpose is to co-ordinate cereal and grass research between the BBSRC funded institutes (JIC, RRes, IGER and SCRI), particularly in the areas of genomics, genetic improvement, training and interaction with funders. Currently the key research areas within Monogram are comparative and physical mapping and bioinformatics. The Monogram website is at: <http://www.monogram.ac.uk/monogram-portal/>

New SoilCIP members

Within-department adjustments at North Wyke mean that Dr Jane Hawkins will be joining the SoilCIP team from 1st April 2007. Jane has a wealth of experience in biogeochemistry, including a PhD in amino acid chemistry and research experience on diffuse pollution. Jane will be developing the resources of the Rowden and Taw platform sites. Adrian Joynes will be adding some invaluable support to CIP research on soil microbiology. Liz Dixon will also be more fully involved with the CIP, working with Roland Bol and David Hatch. Both David Hatch and David Chadwick will be making modest but welcome new contributions towards CIP science. We welcome them all to their new roles and wave goodbye to Trish Butler who has moved on within IGER North Wyke.

New Projects – Review of Defra’s Fertiliser Recommendation System

Negotiations for this began in summer 2006, when Defra approached me to ask the SoilCIP to lead this important KT project in collaboration with Warwick-HRI. After a delay caused by the Defra moratorium in the autumn, the project began on 1st December 2006. The aim is to make a thorough review of the current system ‘Fertiliser Recommendations for Agricultural and Horticultural Crops (RB209)’, last revised in 2000. Especially important are updates for the nitrogen and sulphur recommendations, grassland systems and the use of organic manures. We shall be making full use of the Rothamsted and IGER KT networks and have already contacted the main stakeholders. The project represents a significant challenge to the SoilCIP but one that will raise our profile amongst end-users.

Rothamsted reorganisation

Rothamsted is reorganising its science into 5 Centres. The SoilCIP will be part of the ‘Centre for Sustainable Soil and Ecosystem Function’, led by Brian Kerry. This will not affect SoilCIP science in any way, and I will be working with Brian to ensure continued strong support for the CIP and a high profile.

David Powlson retires

David Powlson retired on 31st December 2006 after 38 years at Rothamsted – 13 years as a Head of Department. David joined Rothamsted in September 1968 after studying Chemical Sciences at UEA. He chose to research soil and agriculture, motivated to assist in increasing agricultural production for people in the Third World. David was fortunate to work with David Jenkinson, then developing ideas on the concept and role of the soil microbial biomass. He studied for his PhD while at Rothamsted, registering at the Soil Science Department at the University of Reading, supervised by David Jenkinson at Rothamsted and Walter Russell and then Dennis Greenland at Reading. He obtained his PhD in 1972. David’s PhD research led to a series of 5 papers in *Soil Biology and Biochemistry* in 1976 setting out the concept of the soil microbial biomass and a method for its measurement – the chloroform fumigation-incubation method. This was influential in opening up research into microbially-mediated processes in soil. His paper on the measurement of the quantity

of carbon held in the soil microbial biomass qualified as an ISI 'citation classic' in 1987 and is still one of the most highly cited papers in *SBB* and the third most cited paper from Rothamsted since 1945.

David escaped from Rothamsted in 1974-6 to work on the management of acid sulphate soils in Malaysia under the guidance of Cyril Bloomfield. After returning, he resumed studies on soil organic matter dynamics and then, from 1980, embarked on a programme of research on nitrogen cycling. He and David Jenkinson developed novel and now widely used field techniques using ^{15}N to trace the fate of N from fertilizer nitrogen. This work formed the basis for research on nitrate leaching and methods to minimise it, related to growing concerns about the health and environmental impacts of nitrate, and laid the foundations for later work on nitrogen mineralization and immobilisation.

More recently, David has been pursuing research on the application of physico-chemical methods to study soil organic matter structure and function, the influence of land management on the oxidation of methane by methanotrophic bacteria in aerobic soils, the significance of soil organic matter as a major pool of carbon at the global scale, and the role of bioenergy crops in mitigating climate change. David continues to be involved in international projects on carbon and nutrient cycling with colleagues from the USA, Australia, China, Brazil, India, Kenya, Jordan, Germany, Poland and the Czech Republic. He was co-editor of the *Encyclopaedia of Soils in the Environment*, published in 2005, a member of Council of the British Society of Soil Science, including two years as President during which he initiated the 'Eurosoil' conferences, a member of the GCTE Scientific Steering Committee, various EU Committees, the BBSRC Agri-Food (grants) Committee, various NERC committees, and Chair of the former BBSRC/NERC Soil Science Advisory Committee.

As a fitting conclusion to such an impressive and wide-ranging contribution to soil science and Rothamsted's research, David will remain at Rothamsted as a Lawes Trust Fellow. A celebration of his work will be held at Rothamsted on 13th February 2007.

Keith Goulding, 31st January 2007