

Biology at Staffs.

Hello, and welcome to the fourth edition of Biology News, the newsletter of the Biology field at Staffordshire University.

The newsletter features the activities of Biology staff and students, with news of research and publications, courses, prize-winners and more.

See our space on the university website for more news and information:

http://www.staffs.ac.uk/faculties/sciences/news_and_events/news_archive/biology_news_autumn_2010.jsp

Butterfly Conservation

John Dover was a co-convenor of Butterfly Conservation's annual conference in March 2010 and, together with Butterfly Conservation Director Dr. Martin Warren and Dr. Tim Shreeve of Oxford Brookes University, has now edited a volume of the conference papers. The papers have been published as a special issue of the *Journal of Insect Conservation* (volume 15) and also as a book entitled *Butterflies in a Changing Landscape* (2011 Springer, Dordrecht).



Students move on to Forensic Archaeology



Staffordshire University Biology students Karen Redmile and Kelly Eggleton (pictured left) have followed up their undergraduate courses with further study at Bournemouth University on the MSc Forensic and Biological Anthropology: Crime Scene and International Investigations. Karen has just successfully completed the course at Bournemouth and Kelly is hot on her trail of success.

Forensic Archaeology involves the use of archaeological principles and techniques for the location, recovery, and interpretation of evidence for past events within the constraints of the criminal justice system. Forensic archaeology utilises both field and laboratory skills in the investigation of serious crime, missing persons cases, human rights and mass disasters which ranges from searching for and excavating clandestine graves to the international investigation of crimes against humanity.

As part of their studies at Staffordshire University both Karen (B.Sc. Biomedical Science) and Kelly (B.Sc. Forensic Biology) completed final year undergraduate projects with Professor John Cassella and decided that they wished to make the specialist discipline Forensic Archaeology their career choice.

We wish both Karen and Kelly success and we will follow their careers with interest.

Association for Science Education Conference

Dr Sue Bird, Dr Kevin Reiling and **Sara Buckley** attended and exhibited at the Association for Science Education conference at the University of Reading on 6th-8th January.

The exhibition provided the opportunity to showcase Staffordshire University's Faculty of Applied Sciences and the "Science Working for You" branding and to engage with the general teaching community, suppliers, regional and national organisations and funding bodies.

In addition specific Continuing Professional Development opportunities for college lecturers, teachers and technicians were promoted. These ranged from the Trauma Simulation courses run by Forensic Science Technicians to provide 'scene' ideas resources and trauma simulation make up techniques to add realism to classroom scenarios to a full range of CPD programmes for post-16 psychology teachers.

Greening the Campus

John Dover and his research student **Caroline Chiquet** have been involved in discussions with the university estates department to install green walls around the Stoke campus as part of a bid to improve the appearance of the campus. It is hoped that the walls will be installed early this year and that Caroline will be able to use them for her research into the biodiversity benefits of green walls.



Caroline Chiquet collecting invertebrates from a green wall with a vortis vacuum sampler

Fungus Group

The work of the Fungus Group continues to be disseminated.

Arthur Callaghan has been invited to give a talk at a British Mycological Society meeting at Kew Gardens in November on the topic "Review of the biology of Conidiobolus and Basidiobolus fungi." The theme of the meeting on Fungi is "Slayers of Animals, Saviour of Plants and Socialists".

Ozone Research Papers

The two papers on the effects of ozone pollution on holly by **Jon Ranford** and **Kevin Reiling** published in *Environmental Pollution* vol.145 are in the top ten articles in the field viewed on the BioMedLib website www.bmlsearch.com/



Science Working for You



The Faculty has Higher Education Innovation Funding (HEIF4) for a project that aims to provide a sustainable scientific focus to interest, engage and inspire our local community. Working with Stoke on

Trent College and the City of Stoke-on-Trent Sixth form college the Faculty is developing a range of activities, case studies and resources that will soon appear on a dedicated portal. Local organisations are setting problems that can be solved by students from local schools, colleges and Staffordshire University. It is hoped that the projects will inspire students to follow a career in science and to increase the number of science graduates and scientists in the local community. There are activities focused on subject enhancement, practical skills and careers information.



Right: students take part in a recent collaborative activity with the Sixth Form College and Biological Sciences at Staffordshire University.

The Great Fat Debate

As part of the **Science Working for You** project, Dr Sue Bird has been working with a group of year 12 students from St Josephs College Trent Vale.

Sue's role has been to initiate and support them providing the initial topic area of obesity. This was chosen as it is identified as being a major health problem in the next 30 years and so will have an impact on their lives.

This topic encourages their critical thinking on a contentious issue where they can research opinion and make decisions potentially affecting their lives enabling them to engage with science in the real world.

The students have used their initiative in defining the question – 'Who controls what we eat?' and in devising appropriate questions for their varied audiences. To date they have developed and run a session within school to introduce the subject area, engage their peers and generated statistical data from the response to the question 'Should the School control what we eat?'.

Following on from this very successful event the group are planning activities in the Potteries shopping centre where the wider public will be asked 'Should the Government control what we eat?'

The project will culminate in a 'Question Time' event in school with a panel of 'experts' and an audience of peers, parents and carers.

Insect Photographs

Dave Skingsley has had his photographs featured on 5 of the last 6 front covers of the Bulletin of the Amateur Entomologists' Society. Further photographs are featured in the book 'Garden Pest Identification' by Michael Chinnery (A & C Black 2010, ISBN 9781408122839).

For more of Dave's photos, see <http://www.bugbotherer.org.uk>

From Dave's bugbotherer website – *Cantharis livida*.



Photo: D.R.Skingsley

Cheshire Active Naturalists

Dave Skingsley is on the organising committee of the Cheshire Active Naturalists group's 24-hour 'Bioblitz' at Norton Priory Walled Garden, near Runcorn in Cheshire.



Norton Priory from the air

The event will start at 6pm on Friday June 3rd 2011.

Recorders, Naturalists and interested members of the public can attend between 10am and 6pm on the Saturday 4th June.

For more information see:

<http://canbioblitz2011.wordpress.com/>

Staff Publications

Dover, J.W.; Rescia, A.; Fungariño, S.; Fairburn, J.; Carey, P.; Lunt, P.; Arnot, C.; Dennis R.L.H. & Dover C.J. (2011) Land-use, environment, and their impact on butterfly populations in a mountainous pastoral landscape: individual species distribution and abundance. *Journal of Insect Conservation*, 15: 207-220.

Dover, J.W.; Rescia, A.; Fungariño, S.; Fairburn, J.; Carey, P.; Lunt, P.; Dennis, R.L.H. & Dover, C.J. (2010) Can hay harvesting detrimentally affect adult butterfly abundance? *Journal of Insect Conservation*, 14: 413-418.

Dover, J.W.; Spencer, S.; Collins S.; Hadjigeorgiou I. & Rescia. A. (2011) Grassland butterflies and low intensity farming in Europe. *Journal of Insect Conservation*, 15: 129-137.

Dover, John, Warren, Martin and Shreeve, Tim (2011) 2010 and beyond for Lepidoptera (editorial note). *Journal of Insect Conservation*, 15:1-3.

Hopkins, Ian J. and Callaghan, Arthur A. (2010) Survival of *Conidiobolus* spp. and *Basidiobolus ranarum* in relation to relative humidity and temperature. *Fungal Ecology*, 3: 148-159.

Orsmond, P. and Merry, S. (2011). Assessment & Evaluation in Higher Education 36, 125-136. Feedback Alignment: Effective and Ineffective Links Between Tutors' and Students' Understanding of Coursework Feedback.

Merry, S., Skingsley, D.R. and Orsmond, P. Fostering lifelong learning within a social constructivist environment. In: *Improving Student Learning for the Twenty-First Century Learner.Proceedings of the 17th Improving Student Learning Symposium 2009*. Ed C.Rust. Oxford Centre for Staff and Learning Development (2010). ISBN 978-1-873576-79-3. Chapter 7 pp168-180.

Rescia, A.J.; Fungariño, S.G. & Dover, J.W. (2010) Reactivación del sistema socioecológico ganadero de Picos de Europa (norte de España)/ Recovery of social-ecological livestock farming system of the Picos de Europa (northern Spain). *Ecosistemas*, 19(2): 137-145.

Skingsley, D.R., Merry, S. and Orsmond, P. The role of second year laboratory based group work in undergraduate project preparation. In *Proceedings of the Science Learning and Teaching Conference 2009*, ISBN 9780954875169 p.14.

Dave Skingsley contributed 4 chapters to *The New Prescriber: An integrated approach to medical and non-medical prescribing*. Ed Lymn, Bowskill, Bath-Hextall and Knaggs. Wiley-Blackwell. (2010) ISBN 978-0-470-51987-5:

Skingsley, D. Introduction to the central nervous system. Ch29 pp372-382

Skingsley, D. Neurdegenerative disorders. Ch30 pp383-393

Skingsley, D. Depression and Anxiety. Ch31 pp394-405

Skingsley, D. Schizophrenia. Ch32 pp406-415

Feedback about the book from other Universities has been extremely positive with a substantial number now using this as their core textbook. Sales also seem to be positive with the book being listed in Amazon's top 100 Nursing Textbooks fairly consistently since its publication.

Skingsley, D.R. (2010) Observations of egg-laying behaviour by the EDB-Nd crane fly *Tanyptera atrata* (Linnaeus 1758). *Bulletin of the Amateur Entomologists' Society* 69(490): 124-125.

Research Students

Paul Mitchell's student **Saba Muflihi** has been awarded her MPhil. Saba's thesis was "Interspecific interactions between the American mink (*Neovison vison*) and European Otter (*Lutra lutra*)".

The research focused on answering the question, why are American mink declining in England after having increased for several decades? The topic was selected since understanding the causes of mink decline is highly relevant to the conservation of water voles (*Arvicola terrestris*), a species which has declined in recent years due to mink predation.

Conservation measures effectively banning harmful pollutants and the hunting of otters, and a series of re-introduction projects has resulted in otters recovering in many areas in the UK.

The results of the thesis provided a strong indication that competition between the Eurasian otter and American mink is an important factor in limiting mink populations in the UK.

Peter Gowland has taken over from John Dover as principal supervisor for **Helen Grout**. Helen's PhD is a study of *Phytophthora* on Cannock Chase, a Special Area of Conservation (designated under the EU Habitats Directive) and a UK Site of Special Scientific Importance (designated under the Wildlife & Countryside Act 1981). The Chase contains bilberry (*Vaccinium myrtillus*), cowberry (*Vaccinium vitis-idaea*) and the main UK population of the rare bilberry:cowberry hybrid *V. x intermedium*. The outbreak of *P. pseudosyringae* is a significant threat to bilberry, and to the 'favourable condition' of the SAC/SSSI.



Area of Cannock Chase showing damage by *Phytophthora*

PhD student from France

Caroline Chiquet, full-time PhD-student in Ecology, talks about what brought her to Stoke-on-Trent and what she is learning thanks to funding from the University's Institute for Environment, Sustainability and Regeneration.

"After a Masters Degree in Agronomy in Clermont-Ferrand, a city in the middle of France, I was willing to do my PhD abroad. Discovering a new culture, being able to live, study and work in a different foreign language always been really appealing to me. And what is a better language for a PhD than English? The Faculty of Science of Staffordshire University gave me the possibility to work on the environmental values of green walls for a 3-year PhD. Working with Prof. John Dover, I realized a true enthusiasm for this subject which mixes on one hand, fundamental research into the interactions between plants and animals within this specific ecosystem; and on the other hand, applied study of green infrastructures in urban areas. I am really enjoying my time in the UK, meeting lots of friendly people and discovering new things every day. I am always amazed to see how everyone in the Faculty is willing to help without letting the language be a barrier; I am learning a lot, especially thanks to my supervisor; and I can't wait to see what the next 2 years has in reserve."



Student Publications

Bioscience Horizons is a free online journal publishing the best undergraduate bioscience research from the UK and Republic of Ireland. The journal provides a forum for students, their supervisors and universities, to showcase high quality undergraduate research work, strengthening the link between teaching and research in higher education. All papers are written by students and based on final year research projects. In 2010 two Staffordshire University students supervised by **John Dover** had their papers accepted. Both have now been published in the June 2010 issue.



Laura Price "A preliminary study of the effects of environmental enrichment on the behaviour of captive African wild dogs (*Lycaon pictus*)" vol. 3, no.2 pp.132-140.

Hannah Keely Smith "Factors affecting the abundance and size of *Pisaster ocharceus* in the rocky intertidal zone of southern British Columbia" vol. 3, no.2 pp.179-187.

The journal was launched in 2008 as a means for final year students to submit their final year project for publication as a scientific paper. Successful students have a citable piece of research to start them on their postgraduate career.

Short Courses and CPD in Biological and Biomedical Sciences

Following the successful introduction of a range of half- and one-day professional development courses last year, new dates have been added to the programme for the forthcoming year and 2 new courses are being introduced. The new courses are a one-day identification of anaerobes course and a workshop on the laboratory diagnosis of blood borne viruses. All courses are CPD accredited by the Institute for Biomedical Science and are held at the Faculty of Sciences conveniently located close to Stoke on Trent railway station.



These courses are aimed at anyone requiring theoretical and practical updating in the course topic areas and may be of particular relevance to those required by the IBMS to evidence the portfolio leading to the award of the Specialist Diploma.

<p>Understanding Antibiotic Resistance and Susceptibility Testing - One Day 13 April 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Clinical Mycology: Identification of Fungal Pathogens - Two Days 24 and 25 May 2011 Day 1 10.00am - 5.30pm Day 2 09.00am - 4.00pm £210 discounted to £190 for IBMS members</p> <p>Laboratory Diagnosis of Parasites of the Gastrointestinal Tract - One Day 11 May 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Identification of Anaerobes - One Day 15 June 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Laboratory Diagnosis of Blood Borne Viruses - One Day 2 February 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Current Topics in the Diagnosis of Respiratory Infections - One Day 2 March 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p>	<p>Molecular Biology for Microbiologists - One Day 29 June 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Update in Sexually Transmitted Infections 13 July 2011 (9.30am - 4.30pm) £105 discounted to £95 for IBMS members</p> <p>Molecular Techniques: A Practical Approach to PCR and Real Time PCR as Diagnostic Tools - Two Days 9 and 10 June 2011 £360 discounted to £320 for IBMS members</p> <p>Practical Techniques in Molecular Biology: 'From Genome to Gene' 17-21 January 2011 £820 discounted to £730 for IBMS members</p> <p>Medical Microbiology for the Specialist Portfolio This 30 credit M level award will deliver the in-depth knowledge of clinical microbiology required for staff working towards the award of specialist diploma. The award is delivered as a mix of distance learning with optional face-to-face workshops to provide staff with the opportunity for group discussions. Cost £700 discounted to £630 for IBMS members</p>
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For further details please see course information http://www.staffs.ac.uk/assets/BiologicalBiomedFlyer_tcm44-25893.pdf

To make an enquiry or booking please contact:
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www.staffs.ac.uk/faculties/sciences/subject_and_courses/biological_sciences/