

Biology at Staffs.

Hello, and welcome to the second 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 open days, school visits and external speakers. See our space on the university website for more news and information

http://www.staffs.ac.uk/faculties/sciences/subject_and_courses/biological_sciences/index.jsp

Café Scientifique

The Head of Science at Westwood College in Leek reports that Dave Skingsley and Angela Priestman gave two very interesting contributions to their Café Scientifique programme.

The aim of Café Scientifique is to bring topical scientific issues to a wide audience in an informal and relaxed setting. While the participants enjoy coffee and homemade cakes (provided by staff at Westwood College) the University expert provides a brief context setting presentation to stimulate discussion. On 10th March Angela presented the evidence for the influence of climate change on emerging infectious disease. This was followed by an open discussion which centred on how new diseases emerge. Dave had earlier engaged students by talking about 'blood splatter' in forensic biology on February 10th.

The café scientifique approach encourages scientists and non-scientists alike to contribute to debate on current scientific issues. If you are interested in setting up a programme at your school or college, or interested to know what topics we could offer your programme, please contact Angela Priestman: a.priestman@staffs.ac.uk I'll have a cappuccino please!

Science and the Public

In the week commencing 1st June 2009 the Faculty of Sciences put on activities and displays in the Potteries shopping centre shop in Hanley.

Kevin Reiling and Sara Buckley supervised a group of Biological Sciences students on work placement to develop displays and activities for use in the shop. They developed a range of activities and displays and engaged the public in a microscopy quiz 'Under the Microscope' where people had to match objects with images of how they appear under the microscope. Displays of gel electrophoresis were accompanied by explanations of how DNA analysis can be used in a variety of ways from helping solve wildlife crime to developing disease cures. Members of the public were also invited to answer a few questions on their perceptions of science, role of scientists in society and importance of science.



Biological Sciences students staff the Potteries Shopping Centre "shop".

Approximately 150-200 people were spoken to in the 4 four days in the shop. Over 120 people agreed to complete the questionnaire and typical responses indicated that local people felt science to be very important: "without it where would we be?"

Kevin and Sara are running a project called 'Science working for **you**'. This project involves the development of curriculum-based activities in which groups of students from the range of educational providers in the local area (schools, FE, HE) will work with local organisations on the investigation of scientific issues and work place problems.

For further details contact Kevin Reiling (k.reiling@staffs.ac.uk) or Sara Buckley (s.l.buckley@staffs.ac.uk).

Insect Walks and Talks

Over the summer of 2009 Dr Dave Skingsley ran 'insect walks' for various groups.

The walk on May 9th was organised by the Friends of Berry Hill Fields and was particularly targeted at the residents of the Berry Hill Retirement Village (see picture below). Stoke City Countryside Officer Paul Shires said "It helps the public understand and appreciate wildlife. The walk is a fun activity, but also a good way to learn about our local green space".



Dave also ran insect walks for the City of Stoke Park Hall Country Park and at Consall Wood Country Park for Stoke-on-Trent City Council.

On 19th June Dave was on the BBC Radio Stoke mid-morning show talking about insects with John Acres and he was on the radio again on 4th September talking about Daddy Long-Legs with Katie Martin.

HEA Biosciences

Dave Skingsley attended the Higher Education Academy Bioscience rep's annual meeting, 10th-11th September 2009 and presented the following paper:

Skingsley DR: Second year laboratory based group work as an aid to undergraduate project preparation (with acknowledgments to Steve Merry and Paul Orsmond).

For further details see:

<http://www.bioscience.heacademy.ac.uk/events/repforum09.aspx>

Foundation Degree in Biomedical Science

Katie Berger, Quality Manager, Training Officer and Health & Safety Co-ordinator at the Pathology Directorate, University Hospital of North Staffordshire, has this to say about the Foundation Degree in Biomedical Science.

"The Associate Practitioner role is a new and very important role in pathology. Many of our Associate Practitioners have worked in the laboratory as Medical Laboratory Assistants prior to becoming an Associate Practitioner so they have laboratory experience but often limited formal qualifications. Working closely with Staffordshire University to develop the curriculum means that the foundation degree offers exactly what the students and the workplace needs. The strong focus on Work Based Learning leads to students gaining credit for structured evidence collected whilst in the laboratory.

"The students studying for the University Certificate are kept in a small group with modules specifically aimed at improving their learning skills. This gives the students confidence in their ability and the confidence to give feedback on the course content. In the second and third years the students spend some time with students on the BSc (Hons) Biomedical Science course which helps both the full time students and those on the foundation degree as they can share knowledge and the foundation degree students can pass on their laboratory experience. Regular communication between Staffordshire University and the University Hospital of North Staffordshire provides feedback on the student's progress and any issues raised by laboratory or student have been promptly and professionally dealt with by the University. Laboratory based mentors spend time each week with the students to discuss current modules and any issues. There has been a very positive impact on the whole laboratory since the introduction of the foundation degree for the Associate Practitioner."

Student Publication

Gregson, C. (2009) Optimization of MALDI tissue imaging and correlation with immunohistochemistry in rat kidney sections. *Bioscience Horizons* 2(2):134-146.

For the second year running a student from Biological Sciences has been successful in submitting and having published a paper based on their final year project in the Oxford University Press journal *Bioscience Horizons*. Sue Bird's student Cassie Gregson graduated in 2008 and was nominated to submit her paper to the journal by the department. Cassie's paper was reviewed and chosen for publication in this year's number of the Journal and can be found at:

<http://biohorizons.oxfordjournals.org/cgi/content/full//2/2/134>

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

Cassie was a part-time student who did her research whilst working full-time at AstraZeneca in bioinformatics research and graduated with a first class Honours degree in Biomedical Science. She also received the best undergraduate Biology dissertation prize. She still works for the same company where she hopes to develop her career further within the bioinformatics field.

Biology Prize Winners

The following students were awarded prizes

MSc (OUP Achievement in Biosciences Prize for best overall performance by an MSc student-£100 of OUP book tokens)

Helen Meharg

MSc Habitat Creation and Management

Level 3 (Faculty of Science Prize for best overall Level 3 performance in Biological Sciences - £100)

Laura Price

BSc (Hons) Animal Biology and Conservation

Level 2 (Faculty of Science Prize for best overall Level 2 performance in Biological Sciences - £50)

Jointly awarded to:

Andrew Pickett

BSc (Hons) Biology

Lisa Davies

BSc (Hons) Biology, Sport and Health

(£25 each)

Level 1 (Faculty of Science Prize for best overall Level 1 performance in Biological Sciences - £50)

Jointly awarded to:

Angela Birch

University Certificate in Biomedical Science

Lisa Heath

University Certificate in Biomedical Science

(£25 each)

Four 1st class degrees were awarded this year:

Laura Price and **Hannah Smith**
(Animal Biology and Conservation)

Megan Wallace and **Hazel Weller**
(Biology with Forensic Science)

Student News

Prize-winner Helen Meharg (see item above) was also busy in another sphere. She gave birth to a baby girl on March 18th. Our congratulations go to Helen for both achievements.

Volunteering in Ecuador



For 3 weeks in April Biology technician Mishele Barrigas (left with Galapagos tortoise) volunteered at a wild animal rescue centre in Ecuador. The centre, which is called Santa Martha, is situated in the hills adjacent to a small village called Tamillo, approximately 40 minutes south of Quito, along the Pan-American highway.

Volunteers live on site in detached houses with 6 people per house. Depending on which house you occupy you either fall asleep to the roaring of lions (ex-circus) or the cacophonous row from the bird enclosures. The work is in two shifts, between 8am and 1pm and then from 4pm to 6pm. During the midday free time they can go into Tambillo where they can use the internet, eat out and shop for essentials.

As a volunteer you work with all the animals, taking turns to do chores so that everyone can familiarise themselves with all the animals. It is a privately funded project with over 100 animals. The police bring in new animals every week, sometimes unexpectedly turning up with large raptors or cats but more often with young monkeys, turtles and birds. Volunteers are constantly needed.

For further information contact Dalma at santamartha@mail.com or visit their website www.santamartharescue.org

Field Visit

In October, students studying the "Managing Habitats for Wildlife" module visited Butterfly Conservation's Prees Heath Nature Reserve in Shropshire. The aim of the visit was to learn about habitat management and especially large-scale heathland habitat restoration for the Silver-studded Blue butterfly, a UK Biodiversity Action Plan Species. Prees Heath is the only site for the butterfly in the West Midlands and is also important for a wide range of invertebrates and birds.



The students with the reserve warden Stephen Lewis.

For more information on Prees Heath see: www.butterfly-conservation.org/downloads/948/prees_heath_common_reserve_shropshire.html

ECCB Conference

John Dover attended the 2nd European Congress of Conservation Biology (Conservation Biology and Beyond: from science to practice) held at the Czech University of Life Sciences, Prague September 1st-5th 2009.

John presented the following paper outlining some of the work of his Earthwatch project in Northern Spain:

Dover, John; Rescia, Alejandro; Fungariño, Sara; Fairburn, Jon; Carey, Peter; Lunt, Paul; Arnot, Charlie; Lang, Andreas: Land-use and socioeconomics: the current situation and prospects for butterflies in the hay and grazing meadows of the Picos de Europa, northern Spain.



Prague

Molecular Techniques

On **1st-2nd June 2009** a course called "[Molecular Techniques: A practical approach to PCR and Real Time PCR as Diagnostic Tools](#)" was run by Dr Harry Mountain, Denise Figgins, Gail Mountain, Mischele Barrigas from Biological Sciences and Drs Jane Haddlington and Helen Bottomley from Applied Biosystems, who also kindly loaned us some of the equipment. Many thanks to Sarah Buckley and Audra Jones for advertising, marketing, enrolment and general organisation. The course attracted 8 delegates from academic and medical organisations in the UK in addition to two MSc students, one from Kenya and one from Guatemala. The feedback from the group was excellent.

http://www.staffs.ac.uk/study_here/courses/molecular-techniques-short-course-tcm4212624.jsp

Animal Biology and Conservation

Laura Price has just completed a BSc (Hons) in Animal Biology and Conservation at Staffordshire University.

"My family and I moved to South Africa when I was 9 and I spent ten years living and attending school there. When I returned to Britain I started full time employment. I have worked in various jobs, from Data Entry to retail. After going from job to job I realized that I wanted a more fulfilling career that would give me job satisfaction.

In order for me to gain entry into university I completed a 1 year Access to Higher Education Programme at Newcastle-Under-Lyme College. As Staffordshire University was my local university I browsed through their prospectus and immediately found a course that I knew I would enjoy doing. I started the course in 2005/06 at the age of 25. During my second year I started thinking about project ideas for my third year research project and came across available projects at the West Midland Safari and Leisure Park. One particularly took my interest, which was on Environmental Enrichment. I chose to do a study on African Wild Dogs as during my time in Africa I had never seen one in the wild. The African Wild Dog is classed as endangered and I wanted to help to contribute towards their welfare and understand their behaviours in a captive environment. My project title was 'A Preliminary Study of the Effects of Environmental Enrichment on the Behaviour of Captive African Wild Dogs'.

For the project I had to develop various enrichments to present to the dogs, aiming at providing a more stimulating environment and preventing the dogs from carrying out undesirable behaviours, such as chewing visitor vehicles and popping car tyres! I thoroughly enjoyed developing the enrichments, with the help of staff at the park, which consisted of a blood trail leading to raw hide items, boomer balls, scents (lemon, lavender, cumin and dried herbs), and burying meat in a sandpit. During my observations I recorded how the enrichments affected the dogs' behaviours and calculated whether it increased their activity levels and decreased undesirable behaviours. I found that some enrichments (boomer balls) were not a good source of enrichment for the dogs but that the others had increased their activity levels and could help to provide a more stimulating environment. Although I was unsuccessful in preventing their abnormal behaviours, my research may be followed up in future studies.

My research project was interesting, enjoyable and enabled me to gain the skills and knowledge of writing a scientific article. I would hope that my research and degree will lead to a meaningful and fulfilling career within the conservation sector. By the start of the second year you really need to be thinking about project ideas and who knows, you may find something that you never thought about doing. There is also an opportunity for students to have their project published in a scientific journal if it is chosen, which can contribute to your future career".



Laura Price

African Wild Dogs with enrichment

Education Presentations

Biology staff involved in Education research presented the following conference papers.

The Science Learning and Teaching Conference 2009 held at Heriot-Watt University, Edinburgh, 16th-17th June 2009:

Skingsley D R, Merry S and Orsmond P. The role of second year laboratory-based group work in undergraduate project preparation. Click on the link for further details: <http://www.sltc.info/programme.asp>

17th Improving Student Learning Symposium 2009 "Improving student learning for the 21st century learner", Imperial College London, 7th – 9th September:

Merry S, Skingsley D R and Orsmond P. Fostering lifelong learning within a social constructivist environment. Click on the link for further details: <http://www.brookes.ac.uk/services/ocsls/index.html>

European Association for Research on Learning and Instruction (EARLI) 13th Biennial Conference, "Fostering Communities of Learners", University of Amsterdam, 25th-29th August:

Paul Orsmond and Dr Stephen Merry: Students' Learning from Tutor Feedback: The Influence of Academic Ability. Click on the link for further details: http://www.earli2009.org/ngcontent.cfm?a_id=1

Fungus Research

Arthur Callaghan attended the Annual Meeting of the British Mycological Society at Dundee (Sep 1-4, 2009) together with delegates from 26 countries. The theme was "The Fungal Cell".

The fungus research group's latest paper, "Survival of *Conidiobolus* spp. and *Basidiobolus* in relation to relative humidity and temperature " by I.J. Hopkins & A.A Callaghan, has been accepted for publication in the journal *Fungal Ecology*.

Spring and Summer Short Courses

Biological Sciences have developed a number of microbiology-based short courses covering a diversity of topics.

Understanding Antibiotic Resistance and Susceptibility Testing was delivered as a one day course (22 April, 2009)

Clinical Mycology comprised four half day sessions (20 and 27 May and 3 and 10 June)

Parasitic Infections of the Gastro-intestinal Tract comprised two half day sessions (24 June and 1 July).

All courses included both lectures and practical workshops. Delegates have attended the courses for a variety of reasons including CPD, broadening their expertise, updating their skills and to provide an underpinning of knowledge for their specialist portfolios. Delegates were from both NHS and non-NHS laboratories throughout Cheshire, Staffordshire and the West Midlands.

Staff from Biological Sciences delivered the courses supplemented by external specialist staff and contributions from institutions including London School of Hygiene and Tropical Medicine, the Mycology Reference Laboratory, Bristol, Shrewsbury and Telford Hospitals, NHS Trust, Mast Diagnostics and bioMérieux.

Feedback was positive with several delegates commenting that the quality of the provision was excellent but delivered in a relaxed atmosphere with plenty of opportunity to discuss and share information with staff from other labs.

Specific comments included "lectures were excellent – very informative", "practical work included useful advice for identification techniques", "re-enforced understanding and confidence in parasitic cyst identification", "provided a much better understanding of ESBLs and diagnostic techniques available", "you can learn more in one afternoon on this course than you can in a year in the lab!!"

We plan to offer the courses again and to develop courses in other topics such as blood-borne viruses and anaerobic bacteria. Please contact Sara Buckley (email s.l.buckley@staffs.ac.uk) for more information.

Talks and Workshops

Dr. Dave Skingsley delivered talks and workshops in the areas of Forensic Biology and Human Biology to the following schools:

Spring - Summer 2009
Blessed William Howard School, Stafford
Cardinal Griffin School, Cannock
Westwood College, Leek
Great Wyrley Performing Arts School



Dave Skingsley

Further talks and workshops are planned for 2010.

If you would like a member of staff to give a talk or workshop to your school or group, please contact Paul Mitchell p.mitchell@staffs.ac.uk

International Symposium

Staffordshire University's Professor John Dover is one of the organisers of Butterfly Conservation's 6th International Symposium: "The 2010 target and beyond for Lepidoptera" to be held in Reading 26th-28th March 2010 as part of Butterfly Conservation's contribution to the International Year of Biodiversity.



The meeting will address the key target of halting biodiversity loss by 2010 which was set across Europe almost a decade ago. There will be reviews of progress from the UK, Europe, and countries throughout the world, as well as the latest science on how to reverse declines and conserve habitats. The Symposium will conclude with an analysis of future challenges, including the impact of climate change.



Further information can be found on the symposium website:
www.butterfly-conservation.org/symposium



National Student Survey

Biology at Staffordshire comes second in National Student Survey

All final year undergraduates students at Universities in the UK are invited to contribute to a National Student Survey which is commissioned by the Higher Education Funding Council for England (on behalf of other undergraduate funders and supported by the National Union of Students). The survey is actually carried out by Ipsos MORI the independent market research company.

A comparison of how Biology at Staffordshire University did in comparison with the other 70 Institutions that deliver courses coded as 'Biology' and had enough responses to count is revealing. There are 22 questions and Biology at Staffordshire was in the top quarter for 13 (59%) of those, coming top in two! Of the other questions Staffordshire was in the second quarter for 7(32%) with only two questions dipping below the half-way point. Overall this places Biology at Staffordshire as Number 2 in the country for student satisfaction! A quick summary of the question groupings comparing Staffordshire with the national average is given in the Table below (the bigger the number, the better).

Overall summary of Staffordshire University Biology (JACS code Level 3) by question groups. (Scoring scale 1-5)

	S.U. Biology	National Biology
The teaching on my course (Q1-4)	4.53	4.16
Assessment and feedback (Q5-9)	3.96	3.47
Academic support (Q10-12)	4.24	3.97
Organisation and management (Q13-15)	4.19	4.04
Learning resources (Q16-18)	4.25	4.15
Personal development (Q 19-21)	4.15	4.05
Overall satisfaction (Q 22)	4.36	4.18

So if you are wondering which University came top for having Biology staff that 'made the subject interesting' and are 'enthusiastic about what they teach' and were only beaten by a well-known Oxbridge University into second place for the question about having a course that 'is intellectually stimulating' the answer is: it's Staffordshire!!

Open Days

Staffordshire University's General Open Days are aimed, in the main, at students who are considering which university to put on their UCAS form.

General University Open Days information is available at http://www.staffs.ac.uk/visitors/open_days/index.jsp

Dates for autumn 2009 are as follows:

* 26 September * 17 October * 14 November *

Open Days run from 10a.m. to 4p.m. beginning with registration in the **Ashley** Lecture Theatres, Leek Road (ST4 2DF). An introduction to Biology at Staffordshire University takes place at 12.15p.m. Subject advisors are available throughout the day to speak to you on a one-to-one basis. Just drop in for a chat - or simply join us for some refreshments any time during the day.