

Biology at Staffs.

Hello, and welcome to the fifth 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_2012.jsp

Hedgelink Conference

John Dover is helping to organise the 2012 Hedgelink conference, Hedgerow Futures, at Staffordshire University. The meeting is Hedgelink's first international symposium on hedgerow ecology, conservation and management and will take place from 3rd to 5th September 2012. The meeting is expected to attract delegates from Europe and beyond, as well as local experts.



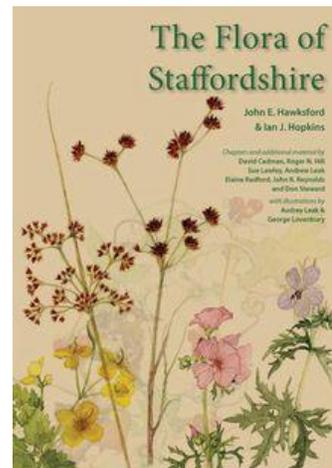
For further information, see the conference website:

<http://www.hedgelink.org.uk/hedgerow-futures-conference-2012.htm>

Flora of Staffordshire

The Flora of Staffordshire of which Ian Hopkins is one of the principal co-authors has at long last appeared in print form, published by Staffordshire Wildlife Trust. The Flora is based on a survey of the county carried out between 1995 and 2008, although the first years of plant recording were originally to provide records for the *New Atlas of British and Irish Flora* (2002, Oxford University Press), the actual Staffordshire project not beginning until 1998.

Kevin Reiling contributed a number of records and he is acknowledged in the new Flora. Various delays meant that it was possible to update some records of particularly scarce taxa until the middle of 2011. Ian's own contributions to the new volume centre largely on the History chapter and on the Species Accounts - and of course on the extensive amount of fieldwork involved in recording in the various tetrad units (2 x 2 km squares - about 880 such units occur within the survey area) in the county between March and the end of October each year. For a sense of the effort involved, John Hawksford, the Botanical Society of the British Isles County Recorder from 1998 to the present day, and Ian maintained a rough parity in the number of individual plant records submitted, ultimately about 80,000 each - the next highest contributor came in at fewer than 25,000!



The Flora of Staffordshire, edited by John E. Hawksford & Ian J. Hopkins. A4 hardcover | Over 400 pages including 100 colour
ISBN 978-0-9549385-2-9
PRICE £45 (plus £8.50 P&P)

Staffs Graduate Employability Programme

The Biological Science Undergraduate awards are officially Staffordshire Graduate Employability Programme (SGEP) Champions. From September 2012 all the awards will have embedded in their structure the features of the SGEP. The University is currently reviewing and realigning the Awards it delivers and aims to explicitly emphasise the added value gained by a Staffordshire graduate. "The Staffordshire Graduate represents a set of qualities that the University passionately believes is necessary for success in the 21st century. The Staffordshire Graduate is a reflective and critical learner with a global perspective, prepared to contribute in the world of work." Biology is the area from within the Faculty that has been developing and implementing a variety of strategies that revolve around helping our students meet these aspirations.

Greening the Campus

A lot of work by the University's Estates department last year has led to the installation of green walls around the Stoke campus by MMA Architectural Systems. Expert advice was sought from John Dover and Paul Mitchell's research student Caroline Chiquet, who is studying the biodiversity benefits of green walls.



MMA workers putting up the supports for vegetation in the Courtyard.

Fungus Group

Arthur Callaghan was invited to give a talk at the annual meeting of the British Mycological Society at Kew Gardens on November 26th. The theme of the meeting on Fungi was "Slayers of Animals, Saviour of Plants and Socialists".

In a talk entitled "Review of the biology of *Conidiobolus* and *Basidiobolus* fungi" Arthur reviewed more than 25 years work on these fungi, acknowledging the help of former colleagues Mick Smith and Steve Waters and current colleagues Ian Hopkins and Rob Manning.

New arrival

Masters Student Elle Atkins had an eventful Easter break. She spent most of it waiting for a tardy new arrival who finally came on 12th April. She is called Eowyn Mae and weighed 8lbs 3oz. Our congratulations go to Elle, who is planning to work on her research project while on maternity leave!

IBMS West Midlands Student Award

Delighted after being put forward for the award by his laboratory training officer, third-year Biomedical Sciences student Norbert Fai was named the most improved placement student on a Biomedical Science programme during 2010-11. His nomination was jointly agreed by the University of Staffordshire and by his laboratory training officer at Mid Staffordshire NHS Foundation Trust. Norbert attended the Institute of Biomedical Sciences (IBMS) regional meeting on 15th November in the Education centre, Women's Hospital, Birmingham, to receive the award presented to him by Jill Rodney, Chief Executive of the IBMS.

Norbert said: "I started my degree programme at Staffordshire University in 2009 and have been receiving my laboratory training at Mid-Staffordshire NHS Foundation Trust for 12 months since September 2010. I feel this acknowledgement shows the Hospital's appreciation for the learning curve I have moved through during my time in their Pathology department".

Norbert took his A levels at Oxford Cherwell Valley College before gaining entrance to study Biomedical Science at Staffordshire University. As a mature student Norbert was anxious about returning to study after a long break in education. However, now in his third year, he is looking forward to using what he has learnt during his placement to help him develop as a biomedical scientist after his graduation.



Norbert said: "I was extremely grateful to be given the opportunity to continue my education by attending Staffordshire University. My experience at Mid-Staffordshire NHS Foundation Trust has enabled me to complete the Health Professional Council (HPC) registration portfolio for the certificate of competence. Even after successfully making it through into the final year and completing my placement I am even more enthusiastic and eager to continue learning. I am very excited about completing my degree and my future in Biomedical Science.

"This award means so much to me and I would like to thank all the people involved in my placement success; special thanks go to Dr. Pauline Gowland, the Co-terminus coordinator (Staffordshire University), Mr Ian Parker, the microbiology laboratory manager and Jo Batley, the pathology department quality control manager (Mid-Staffordshire NHS Foundation Trust)".

National Student Survey

High levels of student satisfaction with Biology at Staffordshire University were reflected once again in the National Student Survey. Scores exceeded the sector-wide results in 21 of the 22 questions asked. In the three areas of Academic Support, Organisation and Management of the Awards and Personal Development Biology was substantially above the national averages.

The scores for the seven sections surveyed were as follows, with sector-wide scores in brackets:

Teaching on my course 93% (89%)
Assessment and Feedback 71% (61%)
Academic Support 90% (78%)
Organisation and Management 92% (81%)
Learning Resources 88% (81%)
Personal Development 92% (80%)
Overall Satisfaction 91% (88%)

Insect Walks

On 11th June Dave Skingley led a nature walk around Park Hall Country Park, Stoke-on-Trent's only National Nature Reserve.



Research Students

Caroline Chiquet gave a presentation entitled "Animal biodiversity and urban green walls" at the 1st National Green Roof Student Conference at the Green Roof Centre, University of Sheffield on 17th May 2011.



Staff Publications and Presentations

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: Species richness and Family-level abundance. *Journal of Insect Conservation*, 15: 523-538.

Dover, John, Warren, Martin and Shreeve, Tim (eds.) (2011) *Lepidoptera Conservation in a Changing World*. Springer, Dordrecht, 384pp.

Merry, S. and Orsmond, P. (2011) The effect of marking criteria and exemplars on students' learning during peer- and self-assessment of scientific posters. In: *Self and Peer Assessment*, edited by S. Maw, Centre for Biosciences, Leeds. ISBN 978-0-9569288-3-2.

Angela Priestman and Kevin Reiling gave a presentation entitled 'Grand designs: a tale of curriculum redesign, restructure and rethink' at the Learning Development and Innovation Showcase event on 14th March. The event was called eAssessment; eSubmission, eMarking and eFeedback.

Working with schools

Level 4 student Philip Martin did an activity at Hanley museum in November 2011 (extracting DNA from fruit) with some of the local schools (years 8 & 9 - and he survived). Here is his report.

The visit to Hanley museum involved two science ambassadors. Myself and Senita visited Hanley museum and delivered workshops to four groups of around 20 key stage three students (two year 8 and two year 9 groups). The workshop involved a simple DNA extraction experiment from fruit involving nothing more complex than an extraction buffer made from salt and washing-up liquid, some kiwi fruit and strawberries and some industrial methylated spirits (in order to precipitate the DNA). Although the subject appears very complicated this experiment was designed to give the pupils an insight into DNA and its importance in cells as well as giving them much needed practical experience. The practicals went very well; many pupils were very impressed with the results and were amazed that DNA could actually be seen without expensive equipment.

Prize-Winning Poster

Ian Davies has won the prize for the best educational poster at the Institute of Biomedical Science (IBMS) Congress held at the ICC in Birmingham. His poster looked at how competency is measured in junior doctors and asked whether some of these methods could be applied to Biomedical Scientists. Nearly 4,000 delegates attended the conference, which was held from 26th-29th September 2011.



Ian's poster can be accessed by clicking on the link below (PDF, file size: 93.34KB).

http://www.staffs.ac.uk/assets/1%20Davies%20-%20Assessing%20Competence1_tcm44-42637.pdf

Butterfly Conservation

On 10th March John Dover gave a talk to the West Midlands Branch of the national charity Butterfly Conservation at their AGM in Dunston Village Hall. John gave an overview of his 11 years working in the Picos de Europa national park in northern Spain.

Where are they now?

Laura Price, whose undergraduate research project on African Wild Dogs featured in Biology News 2, has been offered a position as a Biodiversity Trainee with Cheshire Wildlife Trust, Chester Zoo and Record. It is a one year placement and she will get broad training in habitat management, environmental education and species identification. She is looking forward to starting in April. She will also get the chance to carry out research at the zoo. They have recently got an African Wild Dog pack on exhibit, so perhaps she will do more Environmental Enrichment research!

Gary Woodward, whose undergraduate work was featured in Biology News 1, has now been awarded a PhD by the University of East Anglia and is working as a trainee Clinical Biochemist at the John Radcliffe Hospital in Oxford.

Sarah Gibbs, who has just finished her MSc in Ecology and Conservation, is now employed as Senior Reserves Officer based at Pitsford Reservoir for the Bedfordshire, Cambridgeshire and Northamptonshire Wildlife Trust. Sarah says "I think that it is going to be a cracking job. Lots of monitoring, scope to develop the site and few hassles (well, compared to my country park days!)".



Aerial photo of Pitsford Reservoir by Alan Marlow

RHS Chelsea Flower Show



Tomaz Bavdez (left) finished his MSc in Habitat Creation and Management with Staffordshire University in 2011 and returned to his native Slovenia. He has just found out that his design for an eco-friendly garden, sponsored by Humko, has been accepted to feature at the Chelsea Flower Show in May.

The Soft Machine Garden is an ecosystem, processing and recycling waste house resources. Inspiration for the garden title came from the William Burroughs novel, where soft machine is a synonym for the human body. In this garden the human body is part of the process helping to pump waste water to the top of the living walls and filtering units, while training on the exercise bike. Nothing is wasted, not even energy produced when exercising. Other key features are the innovative modular green walls, functioning also as house insulation and grey water filtering units. The garden is predominately bog-like, with the garden ground and plants serving as an additional water filter. Plant communities enhance biodiversity and offer habitat opportunities for invertebrates, amphibians and birds. The round platforms are water purifying units and, with an illusion created, they seem to float in the air.

This garden design and engineered ecosystem aspires to bold aesthetic expression and offers opportunities for gardening, exercising, biodiversity enhancement and sustainable recycling of house waste resources, but most importantly connects all together into one integral and interdependent unit – The Soft Machine.



New member of staff

Rob Barrington, a former student, is now working part-time at Staffordshire University as a lecturer in Bioskills. Rob says "After completing a degree in geology, and a masters degree in exercise and nutrition science, I enrolled at Staffordshire University to study biology as a mature student. I found the course tremendously challenging, and the teaching staff excellent. Comparing the quality of teaching at Staffordshire University to my previous experience with higher education was like night and day, and I found the technical and academic staff helpful, knowledgeable, courteous and inspiring. Staffordshire University gave me the necessary skills and confidence to apply for a research degree at the Institute of Food Research in Norwich, where I graduated with a PhD in 2007. During my time at the Institute, I studied the absorption of flavonoids in humans, and found that the self confidence I had attained at Staffordshire University helped me immensely. Following a brief spell recovering from the trauma of completing my thesis, I started working in further education at a local college. The college environment was challenging to say the least, but I managed to survive for four years before I received an email from Dr Sue Bird, like a gift from heaven, regarding some teaching hours at Staffordshire University. I applied for the position and have been teaching part-time at Staffordshire University since the end of 2011, completing the circle. I thoroughly enjoy teaching at the University and find that the staff still maintain the high standards that I remember when I was a student."

Student Publications

In 2011 another of John Dover's students had a paper published in the journal *Bioscience Horizons*.

Andrew Pickett (2011) Cadmium dispersal on a raised heathland in the Peak District National Park adjacent to a major trunk road. *Bioscience Horizons*, vol.4, no.2 pp.149-157.

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.

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.

Staffordshire University Biology students have had papers published in *Bioscience Horizons* in every year since the journal started.

Science Working for You

John Wheeler, Kevin Reiling and Sara Buckley were successful in receiving £72,000 from the university's Enterprise and Commercial Development funds to continue the Science Working for You project into new dimensions.

A title has yet to be agreed for the project, but it will take the form of a series of interactive science and technology exhibitions and demonstrations that will include static/interactive information about a contemporary area of science coupled with the opportunity for visitors to actively contribute knowledge exchange and the collection of data that forms part of a unique and topical research study.

Ecobuild

From 20th-22nd March 2012 the Ecobuild Exhibition took place at the ExCel Exhibition Centre in East London. PhD student Caroline Chiquet spent all three days there talking to green wall companies about her research.

More green walls will be being installed at Staffordshire University's Stoke-on-Trent campus this spring. The company which has been chosen to install them, Mobilane, had a stand at the exhibition. Mobilane is a Dutch company whose UK arm is based in Stoke-on-Trent.

The photograph below shows (left to right) Caroline's supervisor, John Dover, Alistair Moore, Director of Hedera Screens, the horticultural company which provides Mobilane with its plants and installs the green walls, Caroline, and the Hedera Screens Marketing manager.



Higher Education STEM Programme

Innovative young scientists from across North Staffordshire presented their ideas of the future at a science fair hosted by Staffordshire University. Inspired by the events of National Science Week, school Science Clubs took turns to showcase their projects which ranged from alternative fuel technologies to the effects of bacteria.

Staffordshire University has been involved in working in partnership with the cluster of local secondary school Science Clubs as part of a National HE STEM Programme.

One of the schools involved, St. Peter's Academy in Penkull, had just returned from demonstrating hydrogen-fuelled model vehicles to thousands of visitors attending the national Big Bang Fair held at the NEC in Birmingham. They recreated their stand from the Big Bang Fair and shared their experiences with the other schools attending in a bid to encourage more entrants from the region next year.

St. Peter's Science Club received support from Staffordshire University's science degree students and Staffordshire STEM Centre. Helen Parkinson, a second year Biology student from Staffordshire University, who was involved with the project, said: "The pupils were learning about subjects and theories outside of the national curriculum in a very hands-on way so they were eager to get involved. Going into the schools to help support the clubs has been very rewarding and hopefully they have caught the science bug and will continue to explore the impact science has in the real world."

See more at

http://www.staffs.ac.uk/about_us/news_and_events/budding-scientists-showcase-tomorrows-world-tcm4245659.jsp

Continuous Professional Development

Biological Sciences at Staffordshire University offer Short Courses in Biological and Biomedical Science, accredited by the Institute of Biomedical Science.

For further information see:

http://www.staffs.ac.uk/assets/ShortCoursesBiomedScience2011_12%20_tcm44-39959.pdf

Courses in Biological Science

Biological Sciences Undergraduate Courses

- [Animal Biology and Conservation \(BSc\(Hons\)\)](#)
UCAS code: CD13
- [Biology with Microbiology](#)

UCAS code: C1C5
- [Biology \(BSc\(Hons\)\)](#)
UCAS code: C100
- [Biology with a Foundation Year \(BSc\(Hons\)\)](#)
UCAS code: C101
- [Biomedical Science \(BSc\(Hons\)\)](#)
UCAS code: B900
- [Forensic Biology \(BSc\(Hons\)\)](#)
UCAS code: F411
- [Human Biology \(BSc\(Hons\)\)](#)
UCAS code: B150
- [Foundation Degree in Biomedical Science](#)

Biological Sciences Postgraduate Courses

- [MSc in Habitat Management and Conservation](#)
- [MSc in Ecology and Conservation](#)
- [MSc in Invertebrate Ecology and Conservation](#)
- [MSc in Urban Ecology and Conservation](#)
- [MSc Molecular Biology \(Distance Learning\)](#)
- [PgC in Healthcare Science Management](#)