

BIOLOGY NEWS

AUTUMN 2014



Biology at Staffs.

Hello, and welcome to the latest edition of Biology News, the newsletter of the Biology department at Staffordshire University.

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



We are now on Twitter.
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Academic Staff News

Professor John Dover has been appointed as joint Editor-in-Chief of the Journal of Insect Conservation. John has also written a book on Green Infrastructure, which will be published in the spring.

Dr. Sarah Williams received HCPC registration in the summer, so she is now a state-registered Clinical Scientist in Immunology.

Part-time courses

Part-time evening courses in Countryside Management are offered at our partner college at Walford and North Shropshire College:

- HNC and HND Wildlife and Countryside Management
- Foundation Degree Wildlife and Countryside Management
- BSc (Hons) Wildlife and Countryside Management (Top-up)

Contact details:

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Student Society

Since its foundation in November 2012 **Staffordshire University Biology Society** (BioSoc) has flourished; membership has grown to over 50 members and a variety of events have taken place. Events this year have included debates, lectures and socials, weekly documentary nights and monthly pub quizzes.



Membership this year is £6 and can be purchased via the BioSoc page on the students' union website at:

<http://www.staffsunion.com/organisation/11721/>

e-mail: staffsbiosoc@gmail.com Twitter: @staffsbiosoc.

Facebook group **Staffordshire University BioSoc**

Coast-to-Coast bike ride



This summer four members of the staff from Biological and Biomedical Sciences took part in fund-raising activities for the Air Ambulance services covering the West Midlands and the North West. Drs **Pauline Gowland**, **Peter Gowland**, **Angela Priestman** and **Dave Skingsley** joined a group of eleven other riders to cycle coast to coast. They took the Whitehaven to Sunderland route which was 135 miles and included several challenging climbs including Winlatter Pass, Hartside and Crawleyside Bank. Dr. **Sarah Williams** could not take part in the ride but supported the group and contributed to the fundraising by regularly baking a selection of cakes which were sold in the Science Centre staff room. The group raised a total of £877.61.

Student Appreciation

The Students Union once again canvassed their members for nominations for awards for lecturing staff. The following members of the Biology staff were nominated:

Dr. Dave Skingsley

Lecturer I would get out of bed for
Positive Impact Award

Dr. Harry Mountain

Lecturer I would get out of bed for

Dr. Kevin Reiling

Positive Impact Award

Dr. Pete Gowland

Personal tutor

Prof. John Dover

Lecturer I would get out of bed for
Personal Tutor

Dr. Sue Bird

Goes the extra mile

Dr. David Cadagan

Teaching support
Lecturer who goes above and beyond



Dr. Dave Skingsley won the “Lecturer I would get out of bed for” award and was presented with his prize on 16th May.

Dave says “Thanks to all the Staffordshire University Biology students who nominated me for the award of the 'Lecturer I would get out of bed for' at Friday's ceremony. Total surprise and humbled by their kind words in the nominations.”

New Staff in Biology



Dr. Daniel P. Tonge has joined Staffordshire University as a Lecturer in Biomedical Science. Here he introduces himself.

I graduated with a BSc (Hons) in Biomedical Sciences having completed a year-long clinical training placement in histopathology and cytology at the Royal Liverpool and Broadgreen Hospital. Following graduation, I completed a Ph.D in Molecular Biology at the University of Nottingham with funding from AstraZeneca and Arthritis Research UK. My doctoral thesis investigated molecular changes in the quadriceps skeletal muscle in various experimental models (*in vivo*) of knee osteoarthritis.

After completing my doctoral studies I undertook post-doctoral research positions at the School of Veterinary Medicine, Nottingham (“molecular control of skeletal muscle fibre type”), the Medical Research Council (“next generation sequencing of small non-coding RNAs for biomarker discovery”) and the Health Protection Agency, Oxford.

In 2012, I became a Senior Scientist at the Centre for Radiation, Chemical and Environmental Hazards, Public Health England (an agency of the UK Government), with responsibility for a range of research projects covering nucleic acid biomarker discovery and NGS-driven fungal metagenomics.

In January 2014 I joined Staffordshire University as a Lecturer in Biomedical Sciences where I continue to develop and conduct research in the areas of personalised medicine and metagenomics. My latest research outputs, areas of expertise and any vacancies / opportunities can be accessed on the University Staff Pages, or via LinkedIn. Outside of work I enjoy travelling, good food, and am an active CAMRA member (that's the campaign for real ale, not a photographic society!). My wife and I have also recently had a new addition (Darcy), so if you see my looking a little tired, or indeed receive emails from me in the early hours of the morning, you know why!

Dan has recently been invited to present the following talks

“The development of metagenomic techniques for the global analysis of fungal communities” at the Ion Torrent Sequencing Company Meeting, Life Technologies.

“Global miRNA profiling for biomarker discovery – what is normal?” EuroTox (Edinburgh)

“Clinicogenomics – The development and validation of NGS-driven fungal metagenomic methods”. Clinicogenomics (Universitätsklinikum Münster, Germany)

PhD Student Poster Presentation

PhD student **Trust Diya** presented a poster entitled "Hormetic effects of the flavonoids Quercetin, Galangin and Chrysin on 3T3 pre-adipocyte growth and development" to a Biochemical Society Conference, 'The Dynamic Cell' held at Robinson College, Cambridge University on 4-7 September 2014. The poster discusses how flavonoids were seen to significantly increase proliferation of pre-adipocytes at physiological concentrations whereas at supra-physiological concentrations, proliferation was greatly reduced.

Trust also successfully applied for a student conference bursary of £200.00 from the same society, to be paid after the presentation of the poster.

Nature Walks

Dave Skingsley once more led a walk round the Staffordshire University Nature Reserve as part of the 2014 StaffFest activities. 20 staff members attended the walk on 3rd July.

Feedback from the participants was good. Comments included "It was a very engaging session and gave me much more of an awareness of the wildlife and plants around me. Dave was very knowledgeable about the subject and welcomed questions from the group. It was great to see the university nature reserve and I will be telling others to go and explore if they fancy a break or the chance to relax" and "Brilliant. Everyone should try it".



Brimstone butterfly on the University Nature Reserve

Technical staff news

A presentation was made to technician **Liz Deakin** from level 6 Forensic Biology students to thank her for her help and support for their projects. The students' gifts are pictured (right).



Liz studied Forensic Science here at Staffordshire University, graduating with BSc (Hons) in 2007, then MSC in 2009. She has worked here as a technician since 2008. Liz supports practical sessions in both Biological and Forensic disciplines and through her supervision of the insectary and decomposition rooms, the Trauma Facility and the Skeletal Investigation room also supports level 6 students with projects in these areas.

Liz says "I love my job and the diversity it brings me and I'm also proud to say that after Gradex this year two of the Forensic Investigation students I supported went on to win 1st and 2nd place with their poster presentations."

On April 16th 2014 at the NWUPC (North West Universities Purchasing Consortium) annual conference held at Manchester University, **Audra Jones** was presented with an award for "Outstanding contribution to University laboratory procurement" by the consortium in recognition of her work with the evaluation and development of the High Value Laboratory Equipment framework for UK Universities which began in 2011.

Dr. Rob Manning won a student award this year for the Best Technical Support for the School of Sciences.

Jayne Francis and **Liz Deakin** successfully completed the course in Effective Practice in First Line Management (through the Institute of Leadership & Management) and were awarded their certificates on 6th May 2014.

Celebrating Staff Success



At the Celebrating Staff Success event on 17th September, **John Dover** and **Caroline Chiquet** were presented with a Green Impact award for their work with the Green Wall Centre (pictured left).

Staff Publications

Dennis, Roger L.H., Dapporto, Leonardo, **Dover, John W.**, Shreeve, Tim G. (2013) Corridors and barriers in biodiversity conservation: a novel resource-based habitat perspective for butterflies. *Biodiversity and Conservation*, 22: 2709-2734.

Cadagan, David & Merry, Stephen (2013) Circumvention of inherent or acquired cytotoxic drug resistance *in vitro* using combinations of modulating agents. *AntiCancer Research*, 33: 4381-4387.

Cadagan, David, Khan, Raheela & Amer, Saad (2014) Female adipocyte androgen synthesis and the effects of insulin. *Molecular Genetics and Metabolism Reports*, 1: 254-263.

Orsmund, P., Merry, S. & Callaghan, A.A. (2013) Communities of practice and ways to learning: Charting the progress of Biology undergraduates. *Studies in Higher Education*, 38(6): 890-906.

Tonge D.P., Pashley C.H., Gant T.W. (2014) Amplicon-based metagenomic analysis of mixed fungal samples using proton release amplicon sequencing. *PlosOne*, 9(4): e93849.

Tonge D.P., Pearson M.J., Jones S.W. (2014) The hallmarks of osteoarthritis and the potential to develop personalised disease-modifying pharmacological therapeutics. *Osteoarthritis and Cartilage*, 22(5) 609-21.

Lichen Survey

Dr. Dave Skingsley was asked to undertake a survey of lichens in St. Giles' churchyard in Newcastle-under-Lyme as part of the Conservation Programme being undertaken with funding from the Heritage Lottery Fund.

Sustainable Lab Awards

Audra Jones was again requested to be on a judging panel for the S-Lab (Sustainable Lab awards) on 8th April 2014, held at the Imperial Cancer Research Institute, London.

Audra chaired the group assessing the category on new buildings for teaching and mixed use. Candidates included:

1. Blackfeet community college (Montana USA) incorporating native American Blackfeet values and traditions, showing reverence for the earth and responsible use of resources.
2. Coventry University – New Engineering and Computing Faculty building
3. Johns Hopkins (Baltimore USA) UG teaching laboratory project
4. University of Bradford – STEM centre
5. Cambridge University – Material Science and Metallurgy building
6. University of Scranton (Pasadena USA) – New Science Centre

The second assessment was for individuals making a difference within the STEM community. Candidates included:

1. Queen's University Belfast – School of Chemistry and Chemical Engineering "Green Impact" Initiative
2. Derby University – Sport and Exercise Science Technical Manager submission
3. University Edinburgh – Chancellor's building green award initiative
4. University of Nottingham – Technical focus group
5. University of Sheffield – Chemistry department departmental safety officer

All award winners will be announced on the 1st September at King's College London at the 'Supporting world class Science' conference 1-3 September 2014.

GRADEX student project

Biomedical student **Anita Dawit** (pictured right) had her final year project featured in the Stoke-on-Trent *Sentinel* newspaper together with other students presenting their work at GRADEX 2014, the Science and Engineering final year show. Anita's project was particularly

eye-catching as it involved eating chocolate. She wanted to investigate the effects of eating chocolate on the chances of developing cardiovascular disease. The flavonoids contained in dark chocolate have been shown to have a positive health effect. Although the initial findings showed no significant impact on the cholesterol levels of her subjects, 10 Staffordshire University students, 5 of whom acted as a control, Anita is keen to carry out further research.



PhD Success

PhD student **Caroline Chiquet** successfully defended her PhD on 22nd September. She will be awarded her doctorate after minor revisions to her thesis. Caroline was studying “The Biodiversity and Wider Environmental Value of Green Walls”. Her supervisors were **Prof. John Dover** and **Dr. Paul Mitchell**.

Caroline’s research was supported by grants from the university and from the Higher Education Infrastructure Fund.

Education Research

Paul Orsmond has had a paper accepted in the journal *Advances in Health Sciences Education: Community of learners: charting learning in first year graduate entry medical students during problem-based learning (PBL) study*. DOI: 10.1007/s10459-014-9542-4

This study considers social learning practices within and outside the overt curriculum. A thematic approach was used to analyse data from six focus group interviews with 11 graduate entry medical students from a UK university over a year of study. The results indicate that during their first year of study students form a community of learning practice, that this community of practice influences learning inside and outside the overt curriculum, that there is a changing community profile over the year of practice and that the students’ engagement in Problem-Based Learning (PBL) as part of their overt curriculum strongly influences the development of a community of practice and hence learning both inside and outside the overt curriculum. It is concluded that PBL is an effective approach for academics to enrich students’ social learning practices.

The research was undertaken in collaboration with Birmingham University.

Projects

Dan Tonge has been awarded internal grants to carry out research in the following areas.

Pump priming funding to perform a next-generation-sequencing-driven metagenomic study on the root zone microorganisms present in our green wall installations. Work to commence October 2014 by **Dilhani De Silva** (PhD student) and will provide preliminary data for a full grant application.

Funding to determine the expression of obesity-associated circulating miRNAs in various samples from the “1000 Elders Cohort”. A collaborative project with the University of Birmingham – again providing preliminary data for a full research programme grant application.

HEA STEM conference

Dr. Kevin Reiling attended the HEA STEM conference “Enhancing the STEM Student Journey” in Edinburgh on 30 April - 1 May 2014. Kevin presented a paper co-authored by **Dr. Angela Priestman** entitled *STEM Learning as a scientific apprenticeship - reinventing the wheel?* 2 posters were also presented:

Developing trust: a co-curricular approach to students as partners.

Dr. Kevin Reiling, Sara Buckley

Fundamental Laboratory Competencies in the Biosciences

Poster: **Dr. Kevin Reiling, Dr. Sue Bird**

Conference presentation

PhD student **Richard Halfpenny** spoke at the 10th European Conference for Entomology on August 7th 2014.

http://www.royensoc.co.uk/meetings/20140803_ece2014_author_and_programme_listing.htm

His presentation was about the design and build of a Dual-Choice Olfactometer and how he is trying to share the process of the design with students and the public as an outreach exercise. Richard says “It seemed to go really well, and the room was packed.... I’m not sure who they thought was speaking but it was great for me to have a full audience.”



Richard and his supervisor, Dr. Angela Priestman, at the conference in York

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/academic_depts/sciences/subjects/biological/biol_wbl_cpd.jsp

Courses in Biological Science

Biological Sciences Undergraduate Courses

- [Animal Biology and Conservation \(BSc\(Hons\)\)](#)
UCAS code: CD13
- [Biology \(BSc\(Hons\)\)](#)
UCAS code: C100
- [Biology with a Foundation Year at Stafford College \(BSc\(Hons\)\)](#)
UCAS code: C101
- [Biology with a Foundation Year at Stoke-on-Trent College \(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

Biological Sciences Postgraduate Courses

Some postgraduate courses can be taken at the Level of Master of Science, Postgraduate Diploma or Postgraduate Certificate

- [MSc, PgC, PgDip in Ecology and Conservation](#)
- [MSc, PgC, PgDip in Invertebrate Ecology and Conservation](#)
- [MSc Molecular Biology \(Distance Learning\)](#)
- [Pg Certificate in Healthcare Science Management](#)

Postgraduate Seminar Series

A series of seminars has been taking place, organised by the postgraduate students in the School of Sciences. Talks organised so far:

7th July 2014. Amanda Dinnivan: The RDC 16 form.

Dr. Dan Tonge: Dodgy knees, sniffly pigs and other short (molecular) stories.

31st July 2014. Dr. Hannah Moore (Keele University): Forensic entomology and artificial neural networks.

14th August 2014. Laura Walton-Williams: DNA research and product development. From research to realisation.

28th August 2014. Caroline Chiquet: How the characteristics of green façades and living walls influence their animal biodiversity - the journey from a title to a thesis.

4th September 2014. Dr. Claire Gwinnett: Lies, Damn Lies and Statistics – How not to get into trouble with your PhD statistical analysis.



18th September 2014. Dr. Arthur Callaghan: The biology of Conidiobolus and Basidiobolus fungi in leaf litter; over 25 years' research in Stoke. (pictured above)

2nd October 2014. Social Media and Technology: how to make it benefit you professionally.

16th October 2014. '3 Minute Thesis'. The students present their research in 3 minutes.

30th October 2014. Charlotte-Maria Orphanou: Conference Practice

13th November 2014. Dr. Hastings McKenzie. To be arranged.

27th November 2014. Adam Hope (Enterprise and Commercial Development) Commercialising research.

The School of Sciences now has a thriving postgraduate student population, studying Forensic Science, Geography and Biology. Further students will be starting soon, including 2 more students attached to the Green Wall Centre.

International Green Wall Conference

In September 2014 Staffordshire University's Green Wall Centre hosted an international conference, *Meeting the Challenge of a Sustainable Urban Future: the contribution of Green Walls*.

The Conference, organised by **Professor John Dover** and **Caroline Chiquet**, was held at Staffordshire University's new £30 million Science Centre in Stoke-on-Trent. Able assistance was provided by PhD student **Elle Atkins** and undergraduate **Tom Flint**, together with IESR administrator **Christine Dover** and Cartographer **Rosie Duncan**.



Delegates from France, Spain, Italy, Portugal, Switzerland, the Netherlands, Hong Kong, Hungary, Germany, Israel and the UK enjoyed two days of talks on green wall history, technology and opportunities. The Science Centre atrium was transformed by the stands of green wall manufacturers.

Green walls are an important component of Green Infrastructure – possibly the only cost-effective approach to coping with some of the immense challenges currently facing urban areas:

- Climate change (coping with extreme event e.g. heatwaves, flooding)
- Pollution (including health impacts)
- Lack of wildlife habitat
- Social problems (including mental health) resulting from high-density urban living.

Green walls are easier to retrofit than many alternatives, take up less space, and can be rapidly deployed.

The Keynotes Speakers were Patrick Blanc (CNRS\Patrick Blanc), the man who did more than anyone to kick-start interest in Living Walls with his dramatic 'Mur Vegetal' installations, and Gary Grant (the Green Roof Consultancy), one of the leading advocates of green walls in the UK.

Further details including a full listing of presentations can be found on the Conference webpages:
www.staffs.ac.uk/research/greenwall/conferences/index.jsp

For more information on the Green Wall Centre, please visit our webpages
<http://staging.staffs.ac.uk/research/greenwall/>