

Organisms and Environment

NEWSLETTER 2016

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IBERS Institute of Biological, Environmental and Rural Sciences

A year in the life of a Natural Resources Wales Intern

Final year marine and freshwater biology undergraduate Ant Baker has returned to his studies after a year-long, paid internship with the Marine Monitoring Team of Natural Resource Wales (NRW), the Welsh Government environmental regulator with a remit for preserving and improving the Welsh environment.

Each year, one undergraduate from a Welsh university is selected for the internship, and last year Ant was the lucky one! During his placement, Ant undertook a 12-day shipboard cruise monitoring invasive species with CEFAS, and sampled a range of marine habitats including rare coastal lagoons and deep-sea reefs. "I was trained in monitoring techniques that used some of the newest technology, including LiDAR and 3D habitat monitoring, to look at structural changes to biologically important *Sabellaria* reefs", explains Ant. "I also gained lots of experience in standard monitoring tools used for water quality analysis, and intertidal and subtidal benthic surveys".

Ant is now applying the knowledge and techniques learnt during his placement in his final year of study. And given the range of skills he now has, and the contacts he has made within NRW and statutory environmental agencies throughout the UK, the future looks bright for Ant!



Undergraduate student Ant Baker conducting a diving survey during his placement with NRW

List of Courses

BSc

Animal Behaviour
 Ecology
 Environmental Biosciences
 Marine & Freshwater Biology
 Zoology

Interested?

Phone **Helen Marshall** on **01970 628445**
 Email: **hem@aber.ac.uk**

From Aberystwyth to the Amazon

Animal Behaviour graduate Siobhan Fairgreaves has spent an amazing three months volunteering at Pilpintuwasi Animal Sanctuary and Butterfly House in the Peruvian Amazon, thanks to funding from Aberystwyth Students' Union Tithe and Capitular Fund.

During her time at the sanctuary, Siobhan interacted closely with many species of endangered animals and helped educate visitors about the dangers of the exotic animal pet trade. If you'd like to follow in Siobhan's footsteps, the Tithe and Capitular fund awards up to £500 to support students or graduates of Aberystwyth University who are undertaking a project which will benefit a charity anywhere in the world. Further details of the fund can be found at <http://www.abersu.co.uk/summerfund/>.

21st Century Field Biology

IBERS ecologist Professor John Warren recently ignited a global discussion about the decline of field biology skills that spread rapidly across social media. In an attempt to halt this decline,

Professor Warren and his PhD student Sam Thomas have now been commissioned to produce a new practical field guide for 21st century ecologists and botanists.

Although plant identification and preservation skills remain important to the modern ecologist, today's scientists can call on the power of DNA barcoding to identify their finds; and today's field biologists regularly use remotely captured images from drones and satellites to survey habitats that are impenetrable or impractical to record on foot.

The new field guide will bring field skills up to date, covering all of the world's most important vegetation types. The guide will build on Sam and John's experience working in the semi-inundated forests of Borneo during IBERS' third year tropical rainforest ecology module, in which our third year botanists, conservation and ecology undergraduates learn field skills first hand whilst helping to DNA barcode some of the most biodiverse vegetation on earth.



PhD student Sam Thomas teaching IBERS undergraduates field skills in Borneo.



Siobhan Fairgreaves on placement in the Peruvian Amazon

Studying abroad in Ottawa!

"Last summer I took the opportunity to study for one year in Ottawa and it turned out to be the greatest adventure of my life", explains final year Animal Behaviour student Zoe Price. "The wildlife in Canada was the thing that really fascinated me the most! Seeing wild bears roaming just a few metres away and experiencing moose crossing my path during horse riding was a regular happening".

Aberystwyth's International Exchange programme has been running for a number of years with many of our students studying across the world each semester, so why not give it a go? "I really recommend that you go on an a student exchange", says Zoe, "because you will enjoy so many new experiences within such a short time... it will change your life forever!"



Zoe Price studying in Canada

New Integrated Masters (MBiol) courses available in IBERS!

A Masters level qualification is ideal for those students with a passion for their subject and who aspire to a career in academic or commercial research. But currently there is no funding available to support students on traditional MSc courses, except from a few, highly competitive bursaries. An exciting alternative that does attract funding via an extension of the student loan, is the Integrated Masters degree, now available in IBERS in Biology and Zoology. On these courses, the standard undergraduate degree scheme is extended by one year and includes taught modules that develop key research skills at Masters level. The highlight of the fourth year is the opportunity to apply this training within a major research project supervised by one of the many innovative research staff within IBERS.

International Behaviour Conference in Aberystwyth!

2016 sees IBERS Aberystwyth play host to over 100 animal behaviour scientists from across the UK and Europe. ASAB (the Association for the Study of Animal Behaviour) has over a thousand members worldwide and has again asked Aberystwyth to host their spring postgraduate conference. Attended by Masters and PhD students, the conference is a great example of the opportunities available for undergraduates wanting to explore their interests in behaviour further. It's being hosted by IBERS' own behaviour experts, Drs Rupert Marshall, Sarah Dalesman & Roger Santer.

BBC Radio Wales is recording a special edition of their Science Café programme from the meeting – tune in online to listen. From birds to bees, locusts to lemurs, ASAB and IBERS bring you the latest in animal behaviour science.

Dissertation Research into Ash Dieback

Plant Biology undergraduate Eleanor Brant, and her dissertation supervisor Dr Claire Risley, are attempting to predict the severity of the ash dieback epidemic, which may be absent from some areas of Wales at present.

Since it was first observed in Poland in 1990, the fungal pathogen *Hymenoscyphus fraxineus* has spread across the continent causing the chronic, often fatal disease known as ash dieback – now a serious threat to the survival of our native ash trees. Less than 10% of common ash show signs of tolerance to the disease, with little to no full resistance being observed. Eleanor's project focuses on modelling the potential impact of introducing tolerant genotypes into a system, on the transmission and prevalence of the disease, taking into account the age of the tree which has important effects on infectiousness.

"One thing I really enjoy about conducting my project in Aberystwyth is the quality of the support the staff and other students provide", Eleanor explains. "You aren't another face in the crowd here, and everyone is willing to give a helping hand to get you where you need to be!"



Ash dieback disease

New module on Surveying Aquatic Environments

Our marine and freshwater biology undergraduates are concerned about the state of aquatic environments globally, and many go on to pursue careers working for UK and overseas environmental regulators, ecological consultancies or NGOs. To ensure these students are as competitive as possible for jobs in this sector, we have developed a brand new module that will focus on the skills and knowledge required to work in aquatic conservation.

Lectures in 'Surveying Aquatic Environments' will focus on the legislative framework underpinning environmental conservation in the UK and Europe, before exploring techniques for sampling aquatic habitats, such as grabs, trawls, remotely operated vehicles, and electro-fishing. Students will put these skills into practice during a field week where extensive use will be made of our two new research vessels, giving them hands-on experience of techniques used by professional aquatic biologists. The module will not only be fun and educational, but will equip students with the confidence, skills, and knowledge to work in aquatic conservation.



The Cheetah 9.95m:
One of our new research vessels



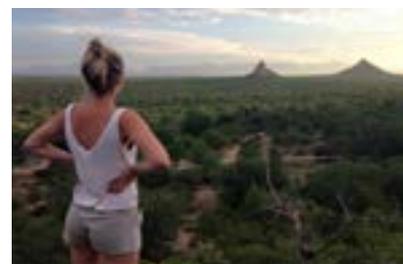
Rachel Chance presenting her research at the European Association of Fish Pathologists' International Conference in Las Palmas, Gran Canaria.

IBERS zoology graduates embark on research careers

2014 zoology graduates Rachel Chance and Emma Ackerley are building on the foundation of their IBERS degrees and embarking on research careers.

Rachel is currently undertaking an NC3R's funded PhD Studentship at the Scottish Fish Immunology Research Centre, University of Aberdeen, in collaboration with Marine Scotland Science, working with world-renowned scientists at the top of their field. Rachel explains "my time studying Zoology at IBERS provided me with a foundation of biological knowledge and skills that allowed me to progress straight to PhD research after my graduation. Highlights of my undergraduate career at Aberystwyth include the stunning location, sense of community between staff and students, and the wide variety of modules offered".

Emma is about to begin a master's degree, studying wildlife conservation with an emphasis on human-baboon interactions in Tanzania for her research project, having already worked as a field assistant on the Dwarf Mongoose Project in South Africa. "Studying zoology at Aberystwyth was one of the best things I could ever have done in one of the best places for it", explains Emma. "Living in such a naturally beautiful environment always inspired me to complete my projects and get outdoors interacting with nature".



Emma Ackerley working as a field assistant in South Africa.