

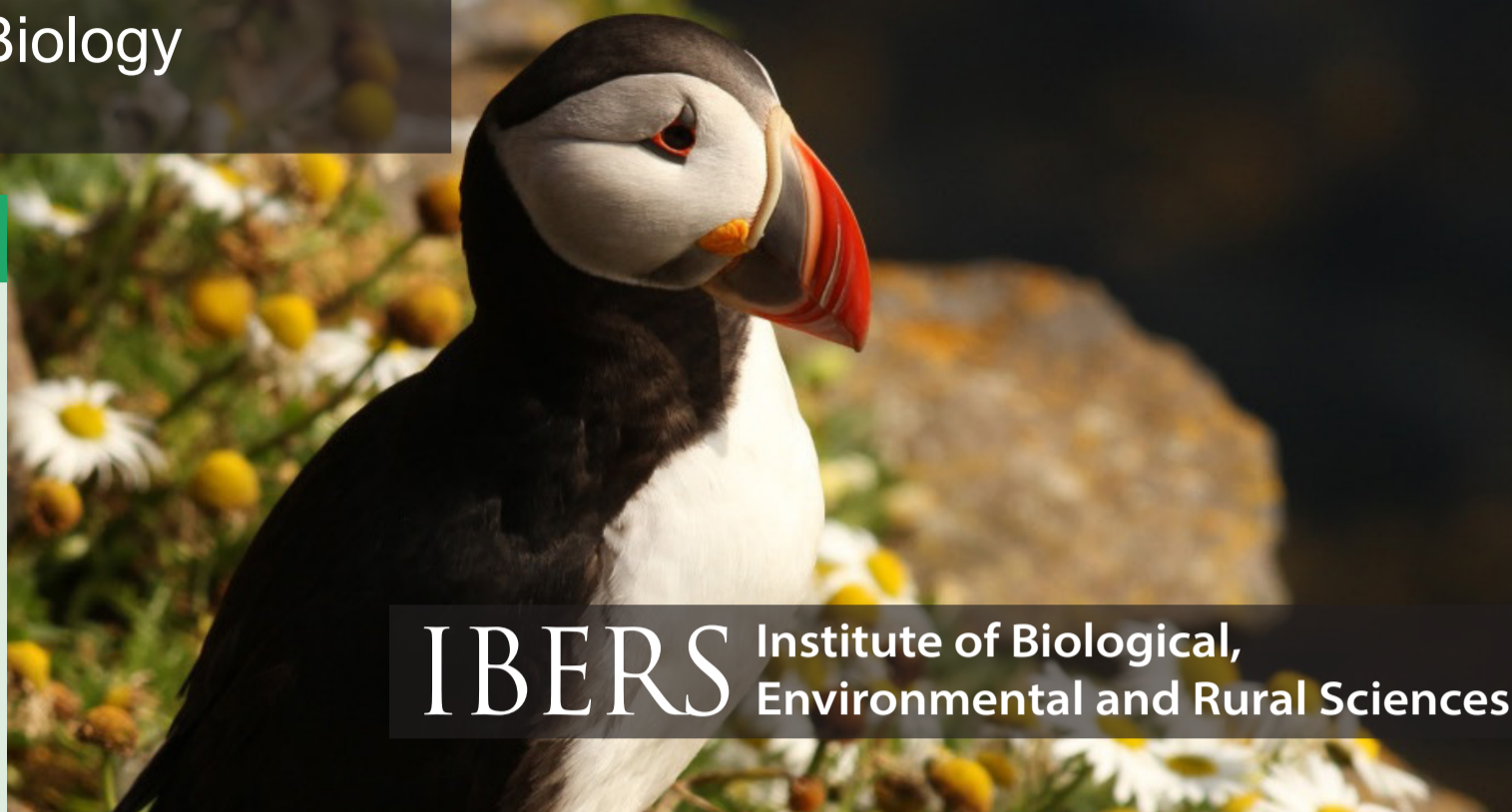
Biology and Plant Biology
 Newsletter 2022

List of Courses

- BSc**
- Biology
- Life Sciences
- Plant Biology
- MBiol**
- Biology
- MSc**
- Biotechnology
- M.Res**
- Biosciences

Interested?

Phone Claire Risley on 01960 622231 or email clr25@aber.ac.uk



IBERS Institute of Biological, Environmental and Rural Sciences

Research assistant at the Jenner Institute, University of Oxford

I am working as a research assistant in the emerging pathogen vaccine group at the Jenner Institute, University of Oxford. Within this role I have helped develop vaccines against Malaria, Ebola, MERS and most recently the Oxford/AstraZeneca vaccine against Covid-19. I use blood samples from volunteers in clinical trials to understand the type and extent of immune response generated by vaccination.

My time studying Biology at Aberystwyth set me up with the skills and knowledge to succeed in my current role. Specifically, the modules in cell biology and bioinformatics as well as learning lab skills in my final year dissertation.

Sarah featured in a Guardian picture essay from December 2020: "Inside Oxford's coronavirus vaccine development: From a small discovery to producing at scale, photojournalist David Levene documents the groundbreaking work of the scientists of Oxford University during the development of a vaccine which is now poised for approval by medicines regulators."

Read the full story here:

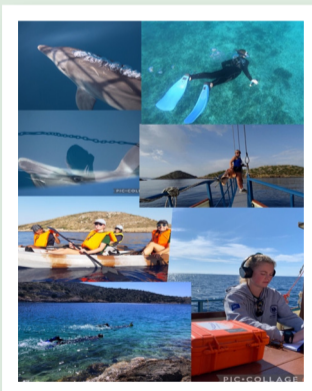
<https://www.theguardian.com/artanddesign/2020/dec/21/inside-oxfords-coronavirus-vaccine-development>



Helen Sanders, BSc Biology (2014-2017)

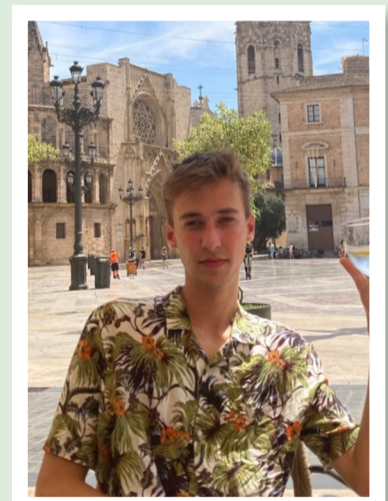
Surveying marine mammals and microplastics

The theme of the BSc Biology scheme is very broad with options to take modules from our other schemes. Here we give an example of opportunities available in marine biology and wildlife conservation. For her Integrated Year in Industry placement, BSc Wildlife Conservation student Charleigh Mallard worked as a Marine Mammal Research Intern at the Archipelagos Marine Institute of Conservation, Greece. During her 10 month placement, she spent over 200hrs on boat surveys where she collected data on marine mammal behaviour, bioacoustics, water chemistry, floating marine litter, microplastics, seabird diversity, and photo ID, and was lucky enough to see three species of dolphin, and record the live feeding calls of a sperm whale! Charleigh's personal project involved the analysis of microplastics in water samples. "These 10 months gave me a great variety of new skills and an abundance of knowledge that I will now keep forever. It has developed my awareness of the need for conservation even more and I hope my experience has prepared me for my future job".



International Year in industry placement

Spending time in a different country offers many benefits and gives students to opportunity to develop personal skills, self-confidence, and intercultural understanding. During the third year of his 4-year Genetics degree Wojciech Kuziuta travelled to Valencia, Spain, to join the research group of Dr Alberto Carbonell at The Institute of Molecular and Cellular Biology of Plants. Dr Carbonell's research group examines different areas of RNA biology in plants and seeks to understand how RNA controls diseases and how genetic engineer can be used to regulate gene expression.



During his placement Wojciech was trained to carry out a broad range of lab techniques and was given his own research project to work. He carried out experiments that involved cloning DNA, analysing RNA, and genetic engineering. On top of having the experience of working in a professional lab, Wojciech enjoyed life in Valencia. He said "I fell in love with Spain and its culture. I met many amazing people from all over the world and had the chance to participate in different events and trips across Spain. I feel like this experience has been one of the best in my life". Since returning to complete his degree Wojciech has continued to carry out research in the same area for his final year research project. Following the completion of his degree Wojciech plans to pursue a career in plant biotechnology and this experience will greatly aid him achieve this ambition.

Aberystwyth University to lead major research project on greenhouse gas removal with crops

Scientists at Aberystwyth University will play a leading role in a major government-funded drive to remove greenhouse gases from the atmosphere.

As part of a UK Research and Innovation (UKRI) investment of £30 million over four-and-a-half years, researchers at Aberystwyth's Institute for Biological, Environmental and Rural Sciences (IBERS) will lead a consortium of partners to develop biomass crops.

The work will be led by Aberystwyth University in collaboration with Aberdeen University, Rothamsted Research, Gloucestershire University, the UK Centre for Ecology & Hydrology, and will benefit from the industrial expertise of Terravesta Ltd and Willow Energy.

The research also involves new field trials at Bishop Burton College, Yorkshire and Myerscough College, Lancashire.

Alongside project partners, they will be demonstrating the latest technologies for planting willow and Miscanthus, the two perennial biomass crops that are best suited to UK conditions.

Both crops grow well on land that is less suited to food production, and can be harvested every one to three years.

Since they remove carbon dioxide from the atmosphere as they grow, they are regarded as a renewable and low carbon source of electricity.

The team will also undertake detailed measurements of carbon flows in order to more accurately account for this carbon.

Professor Iain Donnison, Head of the Institute of Biological, Environmental & Rural Sciences (IBERS)

at Aberystwyth University, commented:

"It's a great privilege to have been selected to take a leading role in this very important investment in efforts to tackle climate change. The project we lead, along with the others, will make important contributions to meeting the net zero climate targets which are so vital to protecting the future of our planet."



Energy crop breeding plots at Aberystwyth University's Upland Research Station at Pwllpeiran.

Wildlife encounters close to home!



A barn owl at RSPB Ynys Hir, photographed during our visit by Aber student Jay Burk.

At Aber, our degree courses make full use of the natural habitats and charismatic species on our doorstep, and we were glad to return to RSPB Ynys Hir in February 2022 to observe avian behaviour for the first time since covid restrictions were imposed. Those who braved the cold were rewarded with spectacular views of a barn owl hunting late in the afternoon. It's interactions with wildlife like these that make Aber such a special place to be a biologist!

Research-Led Teaching - Staff profiles:

Prof Hazel Davey

Hazel Davey worked with a local spin-out company, Aber Instruments Ltd, while she was doing her PhD and still maintains links with them today for the benefit of undergraduate students as well as for her research. Aber Instruments make systems for monitoring biomass in breweries and biotechnology companies worldwide. The equipment measures the health of cells such as yeast before and during fermentations. This leads to financial benefits for the companies and enhances product quality.



To ensure that our graduates are trained in the latest technology used in the biotech sector, the instruments and the data Aber Instruments produce are introduced to students in the third year Biotechnology module. This forms the basis of an 'authentic assessment' where students take the role of an employee writing reports for their company. This develops skills in research and evaluation as well as understanding the necessity for companies to have a competitive edge. Students also have the opportunity to adapt the assessment to their own interests within the biotechnology sector, including production of meat alternatives and probiotics.



You can follow us on Twitter @IBERSbio