The University Of Sheffield.

UK TOP FIVE FOR BIOLOGICAL RESEARCH FOR MORE THAN A DECADE

Research Excellence Framework 2014

Department Of Animal & Plant Sciences.

Study with us:

- Biology
- Ecology and Conservation Biology
- Plant Sciences
- Zoology





www.sheffield.ac.uk/aps

“The field trip to Arctic Sweden was definitely a once-in-a-lifetime experience. It was an amazing opportunity to learn about an ecosystem while being out in it – we regularly stopped while in the field to learn about a particular species and even had a mini talk half way up a mountain! Getting the chance to see the midnight sun was definitely a highlight, as were the amazing views and scenery in Abisko and the surrounding area.”

Yarrow Chia-Bendle, MBiolSci Biology

Find out more about fieldwork in Animal and Plant Sciences on p16

Hello

7th IN THE UK FOR BIOLOGICAL SCIENCES
The Times Good University Guide 2019

The University of Sheffield's degrees in Animal and Plant Sciences cover every aspect of life: from cells, genes and evolution, to behaviour and species interactions, to ecosystems and climate change. This breadth gives you the freedom to take a course that's flexible. You can specialise as much or as little as you like.

The Department of Animal and Plant Sciences is home to one of the highest concentrations of whole-organism biologists in the UK – our biology covers animals, plants, humans, microbes and ecosystems. We guide you on once-in-a-lifetime field trips and take you under our wings to complete research projects our labs. You'll be rubbing shoulders with world-leading scientists who are making ground-breaking discoveries.

All of our degrees give you cutting-edge training in the theory and practice of whole-organism biology, based on world-leading advances in science. We offer an exceptional range of modules covering the breadth and depth of biological science. We have four main programmes – Biology, Zoology, Plant Sciences and Ecology and Conservation Biology – and they all come with lots of options. You might add an extra year of research experience, spend a year abroad, or gain valuable work experience with a placement year.

Whichever you choose, you'll always have the freedom to study the areas that most interest you in a community of like-minded scientists.

Contents

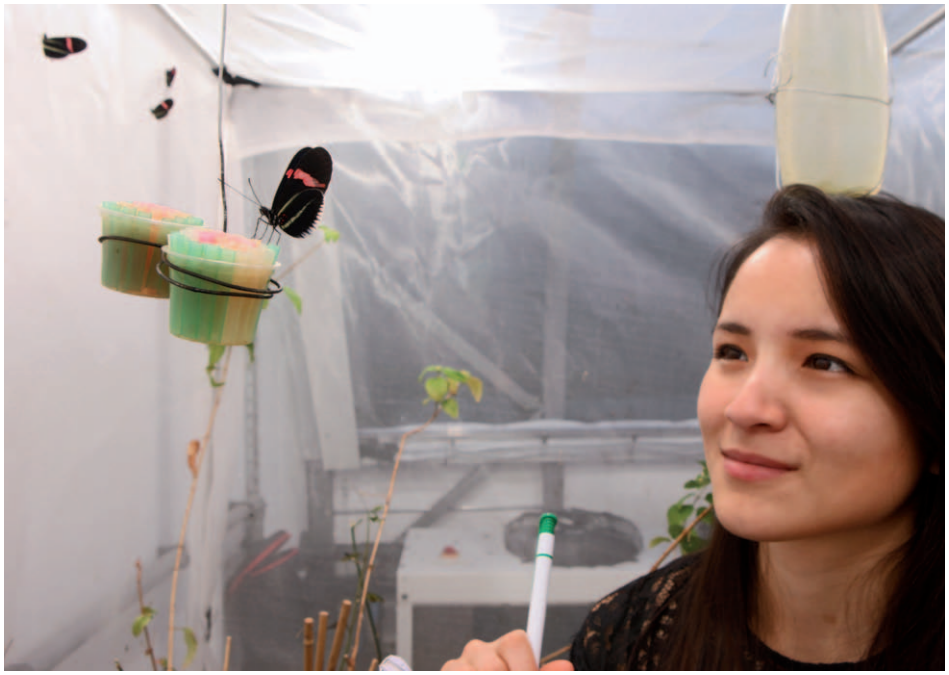
Biology at Sheffield

94%
RATING FOR STUDENT SATISFACTION
National Student Survey 2016

Biology in Animal and Plant Sciences at Sheffield is exceptionally broad and includes the study of animals, plants, humans, microbes and ecosystems. Our staff – your teachers – are world-class scientists working at all levels of biology and on a remarkable range of subjects, from the genetics and evolution of shark teeth and tropical conservation and biodiversity through to how soils and plants regulate climate change and sustainable agriculture.

We'll introduce you to cutting-edge ideas and teach you how to formulate scientific questions, design research experiments and interpret the data you collect. We put a big emphasis on the practical skills you develop out in the field and in our state-of-the-art labs. There are lots of opportunities to be creative, think independently and express your ideas. Your course is defined by four pillars of teaching: lectures, field and lab practicals, tutorials and research projects.

Sheffield is just the start – turn to p16 to find out what you can do out in the field.



All of our degree courses combine lectures, practicals in the lab and field, and small group learning via our tutorial programme. Everyone has a chance to go on an optional field course too (pages 16-21). The degree courses all culminate with a research project and a dissertation, allowing you to showcase your training as a scientist.

Lectures

Learn fundamental biological concepts from the experts and hear about the latest research alongside your coursemates. We offer a huge range of lecture modules on topics that cover cells, genes and behaviour through to conservation, climate change and ecosystems.

Tutorials

Work fortnightly in supportive small groups (6-7 students) with our academics throughout your degree. Look closely at scientific problems as our staff guide you through some of the most interesting and, sometimes, challenging topics. You'll work with data and develop your writing, presentation and critical thinking skills.

Practicals

Bring the theory to life by learning techniques that range from DNA extraction and insect physiology to conservation modelling and water quality monitoring. Sometimes you're in the lab, other times you'll get to make the most of Sheffield and Yorkshire's green spaces, including the Peak District National Park on our doorstep.

Example practicals

- Drosophila genetics
- Visualising gene expression
- Avian developmental biology
- Estimating animal population sizes
- Conservation modelling
- Productivity and biodiversity
- Water quality monitoring
- Plant ID (local flora)
- Insect anatomy and physiology
- Climate change evaluation

Research projects

Project work is built into our degrees from the beginning. There's a week-long field course based in Sheffield in your first week of university, and you'll carry on doing research projects throughout your degree with first and second year modules providing experience in genetics, computer modelling, behaviour, species interactions, conservation and climate change.

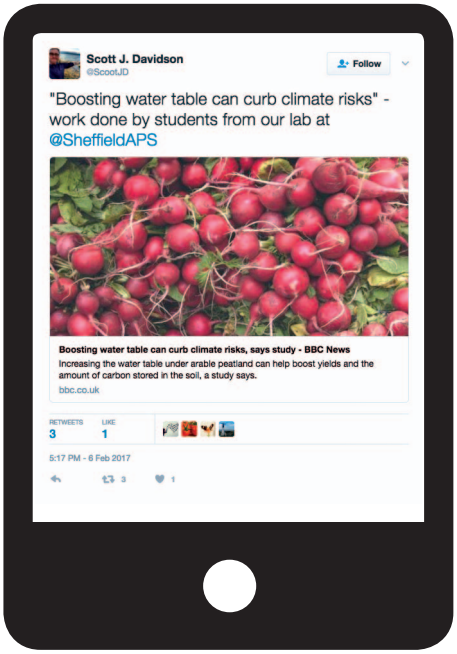
In the third year, you'll tie your scientific skills together with an in-depth research project and dissertation. Recent projects have focused on speciation in stick insects, the ecological genetics of plant and animal defence, social learning in butterflies, the immune system, cooperation in birds, sustainable agriculture, tropical biodiversity and marine conservation. If you opt to do one of our four-year research-intensive MBiolSci degrees, you get to do another, even bigger project in fourth year. There are also opportunities to spend a summer in our labs via the Sheffield Undergraduate Research Experience scheme.

"We give students the space to explore what they might want to do when they leave us. We have a course in which they learn to make wildlife documentaries with BBC science filmmakers and they can gain experience of working in the real world through teaching in local schools and working for conservation bodies."

Dr Fiona Hunter, Director of Learning and Teaching

Talking the Talk: Getting Science on Film

Many of our students are inspired to study biology by seeing the natural world captured on screen. This module gives our students the chance to make their own wildlife documentaries, with support and advice from professional filmmakers with BBC experience. Search 'Talking The Talk: Getting Science on Film' on YouTube to find out more and see some of the videos our students have made on topics including bed bugs, medical detection dogs, grey squirrels and ageing.



Undergraduate research project featured on BBC News

Some of our students' research gets published in academic journals. Undergraduate students Charlotte Atherton and Thomas Gomersall, and postgraduate Samuel Musarika, worked with Dr Donatella Zona on a project looking at the relationship between the water table in agricultural peatlands and the UK's greenhouse gas emissions. The work was published in the journal Science of the Total Environment and was covered by BBC News.

> "An Animal and Plant Sciences degree provides you with a solid core of biological knowledge whilst also promoting independent learning and degree personalisation thanks to the broad range of modules available to you. Providing this combination of core knowledge and hands-on research experience whilst retaining flexibility is rare, and so makes for a fantastic and highly rewarding degree."
>
> **Adam Gillis, MBiolSci Ecology and Conservation Biology**

Learning to communicate science

Inside our degrees, students can participate in our Ambassadors programme, working in local schools teaching biology as part of the third year dissertation. Outside of their degrees, lots of our students get involved in the science activities we run to inspire local schoolchildren and interest the public. As an Animal and Plant Sciences student, you can help us run lab sessions or public tours of the Alfred Denny Museum of Zoology. You can also get involved in the Christmas Biology Lecture we put on for over 1,000 South Yorkshire pupils every year.

> "I lead many of the 'Be A Scientist' visit days, where a class of schoolkids will come to the University to work in the lab and museum. It's great to see children enthused about learning science and it gives them an early insight into what university is, and many of them leave saying they want to come back as a student one day."
>
> **Andrew Jones, MBiolSci Biology**

A typical week – timetable

	Monday	Tuesday
9am	Lecture	Lecture
10am	Independent reading at library	Read paper for optional module
11am	Lecture	Lecture
Noon		
1pm	Departmental seminar	Revise library reading
2pm	Write up seminar abstract	Lecture
3pm	Work through data analysis booklet	Start activity from tutorial
4pm		IT drop-in session

95%
RATING FOR LEARNING RESOURCES
National Student Survey 2016

Wednesday	Thursday	Friday
Practical	Revise lecture notes	Career development session
		Lecture
	Lecture	Revise lecture notes
		Lecture
Sports / student society / volunteering	Practical	Revise lecture notes
		Data analysis assessment
		Independent reading at library
Finish tutorial activity	Tutorial	

Choosing your degree

All of our courses are shaped by an enthusiasm for the breadth of biological science, but it's important to choose the degree that's right for you. That's why we want you to have options and why we're flexible, no matter which path you choose. Here's a guide to help you make your initial decision.

Do you want the freedom to study a wide range of topics in biology, or do you want to graduate as more of a specialist?

The Biology degree programmes on page 12 give you the biggest choice of modules, so you can study the topics that interest you the most. It's designed for people who are looking for breadth, or who aren't sure what they'd like to focus on.

The Zoology, Ecology and Conservation Biology, and Plant Sciences degree programmes on page 14 have more compulsory modules tied to their subject areas. These are designed for people who have a particular passion for animals, plants or ecology and conservation, or who know they want to go into a particular area after graduation.

BSc courses

Do you want to take an extra year to get more research training and experience?

You'll get lots of practical and research experience on any of our three-year BSc courses. The MBiolSci courses add a fourth year, so that you can be embedded as a researcher in one of our world-leading research teams. You'll graduate with a masters degree, which can really help to make you competitive when applying for jobs in research and other areas where it's vital to show an understanding of data and science.

MBiolSci

Do you want to go abroad as part of your degree?

The Biology with a Year Abroad degrees on p12 give you a once-in-a-lifetime opportunity to study biology at another top university in the USA, Canada, New Zealand, Australia, Singapore or Hong Kong in your second year. You'll still get to pick a wide range of Sheffield biology modules in your first and third year, and you can still take the MBiolSci fourth year to graduate with a masters.

Year Abroad

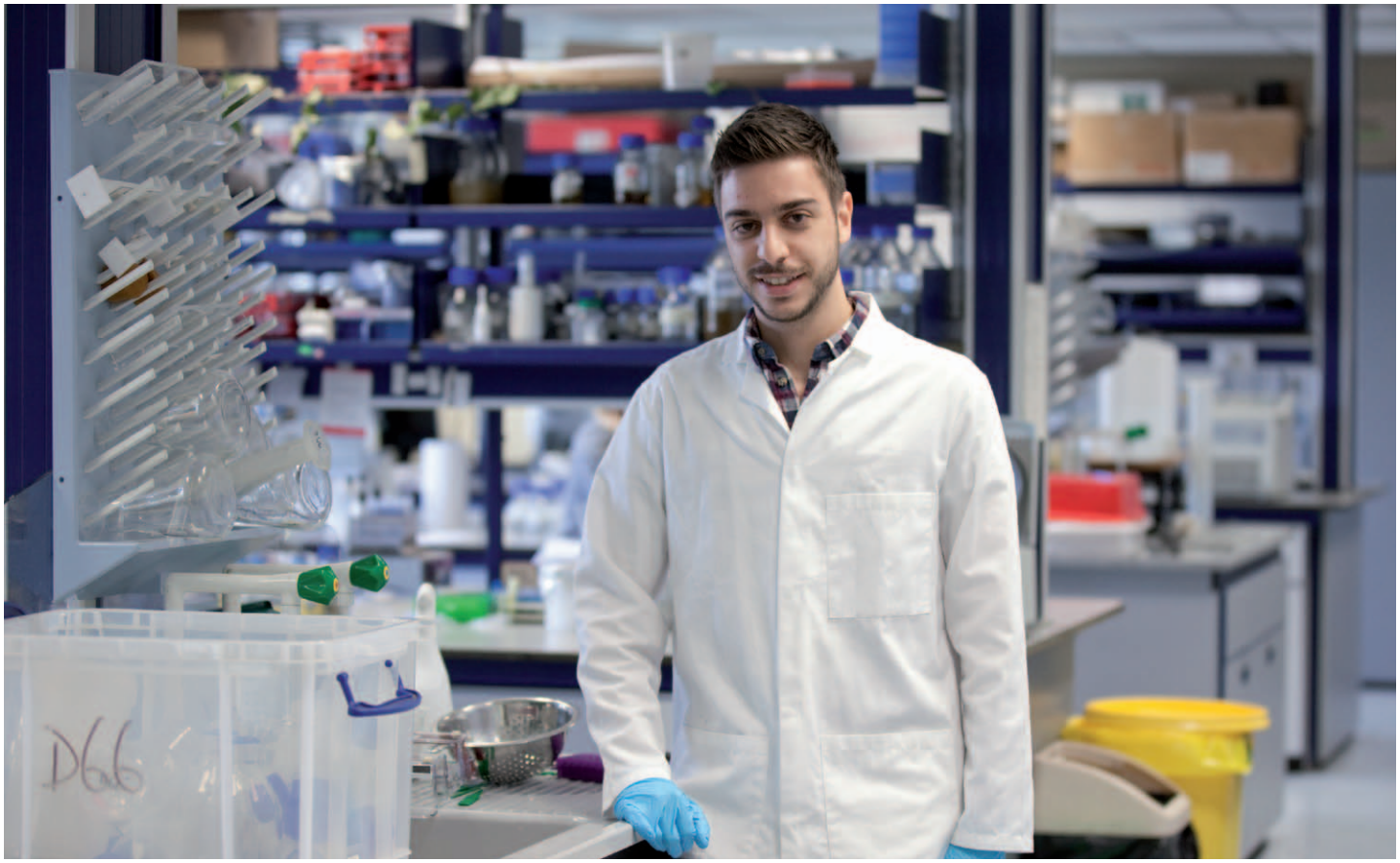
Do you want to do a work placement year during your degree?

Spending a year on work placement is a great way to gain significant work experience, develop transferable skills and increase your attractiveness to future employers.

You can do a year-long work placement as part of any of our degrees and graduate with 'Placement Year' in your degree title. Your placement will take place between the second and third year of your degree, making our three-year BSc courses into a four-year programme and our four-year MBiolSci courses into a five-year programme. Placements aren't guaranteed – it's your responsibility to secure one but we'll do everything we can to help.

Our students have done their placements with organisations that include Kew Gardens, Newquay Zoo and EMEC Ecology. Find out more and read about their experiences on page 22.

Placement Year



	BSc Three years	MBiolSci Four years	BSc + Year Abroad Three years	MBiolSci + Year Abroad Four years	BSc + Placement Year Four years	MBiolSci + Placement Year Five years
Biology C100 / C109 / C101 / C10C / C104 / C105	✓	✓	✓	✓	✓	✓
Zoology C300 / C309 / C304 / C305	✓	✓			✓	✓
Ecology and Conservation Biology C180 / C189 / C184 / C185	✓	✓			✓	✓
Plant Sciences C200 / C209 / C204 / C205	✓	✓			✓	✓

If you aren't sure if you'll get the grades for a MBiolSci degree, it's still worth applying – find out about the Sheffield Firmers' Guarantee on p33.

	UCAS code	Typical offer
BSc Biology	C100	AAB
MBiolSci Biology	C109	AAA
BSc Biology with Placement Year	C105	AAB
MBiolSci Biology with Placement Year	C104	AAA
BSc Biology with a Year Abroad	C101	AAA
MBiolSci Biology with a Year Abroad	C10C	AAA

Biology degrees

Breadth, depth and freedom – that's what makes our biology courses unique. Our huge range of modules, taught by world experts in their fields, means you can specialise as much or as little as you like. So whether you want to study genes, or ecosystems, or a bit of both with lots in between, it's your decision.

"For any biologist, the opportunity to study Australian ecosystems is an exciting one, and I was not disappointed. Regular field trips to the bush and the coast exposed me to unique plants and animals endemic to Australia, and as a result much of the teaching was given from a refreshing new angle."

Chris Buckley
MBiolSci Biology with a Year Abroad at Monash University in Melbourne, Australia

91%
STUDENTS IN WORK OR FURTHER STUDY SIX MONTHS AFTER GRADUATION
BSc Biology, Destinations of Leavers from Higher Education Survey, 2016-17

All of our students take compulsory modules designed to give you the essential skills that every professional scientist needs. Beyond that, you will also learn about:

- how evolution by natural selection works in animals, plants and humans
- which forces control organisms' behaviour
- why it's important to preserve biodiversity
- how DNA technologies have revolutionised biology
- the threats that ecosystems around the world face

If you take the Year Abroad course, you'll spend your second year studying biology at another top university in the USA, Canada, New Zealand, Australia, Singapore or Hong Kong. It's a great way to get an even bigger range of perspectives on the subject, explore habitats unlike anything here in the UK, and experience life in another part of the world.

If you choose the Placement Year course, your placement will take place between the second and third year of your degree. Our students have completed their placements with organisations that include Cadbury (Mondelez International) and the Centre for Integrated Research, Conservation and Learning giving you a great opportunity to explore career paths and learn new skills. Find out more on page 22.

Example modules

- Animal Behaviour
- Human Evolutionary Genetics
- Plant Habitat and Distribution
- Sustainable Agro-Ecosystems
- Tropical Forest Ecology and Conservation
- Biotechnology and Food Security
- Life in Extreme Environments
- The History and Philosophy of Science

Example student research projects

- Using crowd-sourced data to perform a genome-wide association study of handedness in humans
- Are urban invertebrates influenced by invasive plants?
- Managing grasslands for productivity and carbon sequestration in the face of climate change
- When is ecotourism useful for tropical conservation?

	UCAS code	Typical offer
BSc Zoology	C300	AAB
MBiolSci Zoology	C309	AAA
BSc Zoology with Placement Year	C305	AAB
MBiolSci Zoology with Placement Year	C304	AAA
BSc Ecology and Conservation Biology	C180	AAB
MBiolSci Ecology and Conservation Biology	C189	AAA
BSc Ecology and Conservation Biology with Placement Year	C185	AAB
MBiolSci Ecology and Conservation Biology with Placement Year	C184	AAA
BSc Plant Sciences	C200	AAB
MBiolSci Plant Sciences	C209	AAA
BSc Plant Sciences with Placement Year	C205	AAB
MBiolSci Plant Sciences with Placement Year	C204	AAA

Specialist degrees

Zoology

Zoology spans invertebrates, birds, fish, humans and other mammals: how they evolved, how they behave, and how they respond to global change. You'll gain lots of scientific skills as you study everything from an animal's genetic make-up to its behaviour and interactions among species, applying Darwinian principles and the latest DNA techniques.

Key zoology modules

Animal Physiology, Reproduction and Development

Genes in Populations

Animal Diversity

Example zoology research projects

An investigation into factors affecting grey squirrels' food-hoarding decisions

An investigation into the genetic basis for 'skin-teeth' in the small-spotted catshark

How do ducks distribute themselves in relation to their food?

Ecology and Conservation Biology

Ecology and Conservation Biology is about the ecosystems across the planet that are under threat, and what we can do to save them. You'll learn more about the interactions between humans, animals, plants and the Earth's atmosphere, covering topics such as biodiversity, climate change and environmental management.

Key ecology and conservation modules

Ecosystems and Environmental Change

Conservation Principles

Tropical Forest Ecology and Conservation

Example ecology and conservation research projects

The impacts of selective logging on Bornean birds

Preservation of agricultural peatlands using water table management under ambient and elevated levels of CO_2

The long-term effects of grazing on oak-birch woodland biodiversity and invasion in the Peak District National Park

Placement Year

Your placement will take place between the second and third year of your degree. Our students have completed their placements with organisations that include Cadbury (Mondelez International) and the Centre for Integrated Research, Conservation and Learning giving you a great opportunity to explore career paths and learn new skills.

Find out more on page 22.

Plant Sciences

Plant Sciences emphasises the central role of plants in understanding how the natural world works, and how it can be protected. You'll learn fundamental plant biology, through topics such as evolution, developmental biology, photosynthesis and disease. You'll also consider the role of plants in solving global food and energy shortages, and developing green technologies.

Key plant science modules

Plant Habitat and Distribution

Plant, Cell and Environment

Ecosystems and Environmental Change

Example plant science research projects

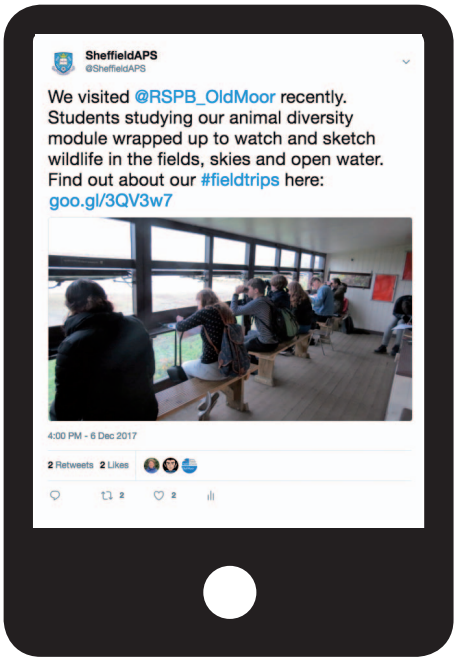
Are there biomechanical constraints on seed size between and within species?

Autumn leaf colouration: Testing the two main evolutionary hypotheses

The role of soil mycorrhiza in sustainable agriculture

Fieldwork

Sheffield is one of Britain's greenest cities, with four trees to every person – and we make the most of it. The city is filled with rivers, woods and parks, and in your first week you'll complete a week-long field course that introduces you to asking biological questions as you experience this incredible field site. The Peak District National Park is only a short distance from campus too, we're perfectly positioned for regular out-of-town trips, and between your second and third year, your optional field course can take you to some incredible locations around the world.



Intro week

We get you set up as a scientific researcher from day one: you'll spend the first week of your first term on a field trip in Sheffield, working on projects throughout the city's green spaces and out to the edge of the Peak District. You'll collect data in a spectacular environment, interpret your findings and present your conclusions as any other professional scientist would. It's a great introduction to the staff and the other students on your course, as well as the local green spaces that you'll have lots of opportunities to explore throughout your studies.

Field trips

Since Sheffield is pretty much in the centre of England, it's a great base for visiting scientific spots around the UK. We've run trips to Twycross Zoo in Warwickshire, The Deep aquarium in Hull, the Old Moor RSPB reserve in Barnsley, Yorkshire Wildlife Trust's Potteric Carr Nature Reserve in Doncaster, the rock pools at Filey in North Yorkshire, and the Tropical Butterfly House Wildlife and Falconry Centre a few miles outside Sheffield.

Field courses

For many of our students the optional field course between second and third year is the highlight of their degree. We give you a choice of fascinating habitats to explore, from dramatic landscapes in remote corners of the globe, to complex ecosystems operating right under our noses. It's a unique opportunity to fully immerse yourself in scientific study.

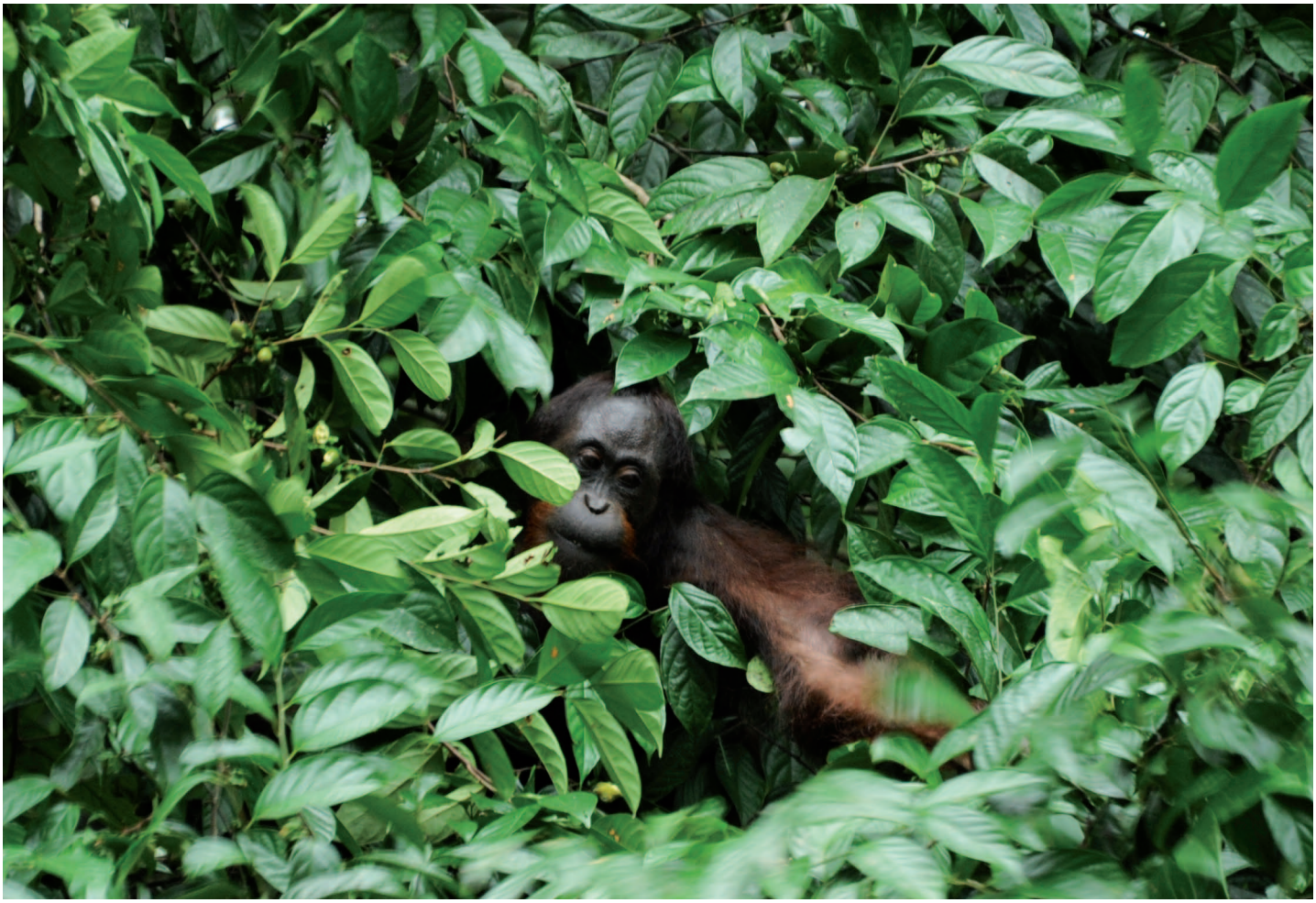
"The Borneo field course was fantastic! The jungle was an amazing environment, we saw tons of incredible animals like a wild orangutan, gibbons and beautiful birds, and trekked to waterfalls to cool off in. Seeing the sun rise over a misty forest with bird calls all around is an experience I will never forget. The field work was hard but well worth the effort and I would re-do it all for the chance to go back!"

Bethany Harvey, MBiolSci Biology

Tropical biodiversity: Borneo

Location: Danum Valley Field Centre, Sabah, Malaysian Borneo

The Danum Valley Field Centre is at the edge of 400km² of rainforest, where you can often see orangutans, elephants, gibbons, clouded leopards and many species of bird. Students learn about how the rainforest is structured, the threats it faces from the palm oil trade and ecotourism, and how scientists are working to conserve it.



"I really enjoyed the Sweden field course. On the trip I had the opportunity to plan and carry out a research project which gave me a much deeper understanding of the scientific process. I found the data collection really exciting, especially as the landscape we were surrounded by was so amazing. I enjoyed my project so much I decided to change my choice of dissertation topic!

I also made lots of new friends and it was great to work with so many new people with different ideas. It was a great adventure!"

Hannah Ravenswater, MBiolSci Zoology

Arctic ecosystems and climate: Sweden

Location: Abisko Research Station in sub-arctic Sweden

Students go to the Abisko Research Station in mid-summer, during a period of 24-hour daylight. Based on the shore of the Torneträsk lake, 200km north of the Arctic Circle, students study a range of organisms, from carnivorous plants to grazing reindeer. There are many ecological processes to consider in this region, where climate change is having a huge impact.

Animal ecology and behaviour: Portugal

Location: Quinta de Sao Pedro Field Centre, near Lisbon

The area around the Quinta de Sao Pedro Field Centre is full of insects that students can study – ants, aphids, territorial beetles and many more. The setting offers a unique opportunity to study how different species behave, interact and evolve.

"The Portugal field course was one of my best university experiences, as it enabled us to carry out a field project of our choice in an amazing location. One of the best aspects of the trip was having the help and expertise of four experienced academics for a whole week, meaning that everyone's presenting and field work skills improved beyond recognition.

There is a lot of work to do while in Portugal but the great weather and beautiful surroundings make it a really enjoyable week. Plus, you get to know everyone on the trip really well, and after the final presentations the staff treat everyone to a day at the beach!"

Luke Turner, BSc Biology

Animal ecology and behaviour: Peak District

Location: Across the Peak District National Park

This course focuses on biodiversity and resource/park management. Students explore invertebrate diversity, build their own insect collection and learn about the many conflicting pressures that affect the management of biodiversity in the Peak District National Park.

Marine biology: Anglesey

Location: A campsite by the shore in Anglesey

This course focuses on marine intertidal diversity and coastal ecosystems. Students are based at an adventure field station right by the sea where they do experiments and visit the seabird colonies and coastal habitats for which Anglesey is famous.

"The Anglesey marine ecology field course offered the chance to work with and study an ecosystem unlike anything we have here in Sheffield. It was very hands-on from the beginning, the entire group enjoying the childlike charm of rock pooling with the added rigour of scientific observation and study, as we developed our project ideas.

We learnt a huge amount in terms of species identification (from seaweed to snails to crabs) and also in the area of project design, learning how to craft a research topic that is interesting, exciting and achievable."

Richard Bourton, BSc Zoology

Environmental interpretation: Ireland

Location: West of Ireland

Students on our Ireland field course spend seven days in the west of Ireland covering geology, hydrology, soils and botany to develop their landscape-level understanding of environmental processes.

Degrees with a Placement Year

Doing a work placement is a great opportunity to put your scientific skills into practice. It's also a good way to make contacts and show employers that you're ready for the world of work when you're looking for jobs at the end of your studies.

Joel Rowlands
BSc Biology with Placement Year

Joel spent his year working as a UK Native Seed Hub Assistant at Royal Botanic Gardens, Kew. He was a key part of the team responsible for running Kew's seed bank, which is central to national and international seed conservation efforts.

After his BSc, Joel stayed in our department to do a masters degree, and now works at Mouchel Ltd, a civil engineering company working in road and other infrastructure development.

"There is no other way of gaining this type of experience during your degree. I was a valued part of an international organisation, I had responsibility, I earned money, I made contacts and I discovered what I want to do with my career. This is a MUST do for all students."

Olga Kondrashova
BSc Biology with Placement Year

Olga spent her placement year working at the Field Studies Council on the doorstep of Snowdonia in North Wales. During the year, Olga took part in biological surveys, conservation projects, outdoor education and adventure activities. Thanks to her placement, Olga feels less daunted about entering the world of work after graduation.

"My placement was with an environmental education charity called the Field Studies Council. Away from the daily grind and necessary tasks of stock checks, cleaning and preparing kit, the highlights of the job were taking part in biological surveys, conservation projects, outdoor education and adventure activities.

I also worked with a lovely team and was lucky to be living in North Wales, with Snowdonia on my doorstep I could scramble, swim and climb in my free time. The location was idyllic and something I considered for a long time when choosing what placement to apply for."

You can do a year-long work placement as part of any of our degrees and graduate with 'Placement Year' in your degree title. Your placement will take place between the second and third year of your degree, making our three-year BSc courses into a four-year programme and our four-year MBiolSci courses into a five-year programme. Placements aren't guaranteed – it's your responsibility to secure one but we'll do everything we can to help.

With help from a dedicated tutor in the department and the University's Careers Service you'll work full-time for a year, and you can earn a graduate-level salary. You'll pay reduced fees for the year and you'll still have access to your tutor and the support you need from the University.

Our students have done their placement year at:

- **Proctor and Gamble**
- **Cadbury (Mondelez International)**
- **Food and Environment Research Agency**
- **Kew Gardens**
- **Newquay Zoo**
- **Transport for London**
- **West Yorkshire Police (Forensics)**
- **Centre for Integrated Research, Conservation and Learning (Flamingo Land and the University of York)**
- **EMEC Ecology**

Abigail Collard
BSc Biology with Placement Year

Abigail worked for Mondelez International, the company behind major brands such as Cadbury. Her role was to develop new chocolate products and improve existing products for the seasonal market in Europe.

She first made contact with Mondelez at one of the careers fairs put on by the University of Sheffield Careers Service. After securing the placement, Abigail made such a good impression that she was offered a job in Chocolate Research, Development and Quality at Mondelez, to start after she graduates.

"It provided me with a great opportunity to use the scientific knowledge and skills I've gained throughout my degree course in a really different and creative way, and it's been extremely rewarding seeing the products I created being sold in shops since leaving.

I chose to do a placement year to both help me decide on a future career path, and to gain vital experience in the workplace, which would be extremely beneficial regardless of whether I chose to continue down this career path or not."

Emma Hazelwood
BSc Biology with Placement Year

Emma worked for Procter and Gamble (P&G), the company behind brands like Head and Shoulders and Braun as part of her degree. Being lab-based during her placement year enabled Emma to develop technical skills and build confidence and experience in designing her own experiments.

"I was working in a microbiology lab, on Flash antibacterial wipes. I had a lot of independence – my project had two main aims: to validate a new antibacterial wipes method in-house, and to develop a demo which could be used to show superiority to competitors. It was up to me how I went about achieving these aims (with guidance from my manager).

I really enjoyed how different it was from labs in my degree, in that I got complete freedom in how and when I did experiments. This means that my lab skills have not only improved from a technical point of view, but I have also had a lot of experience in designing my own experiments, and analysing the results (working with a statistician). I had real responsibilities meaning that other peoples' work relied on me getting results."

Careers

Lots of workplaces today are built around biological science graduates. In-depth knowledge of organisms and ecosystems is central to environmental policy, healthcare and conservation. Our students are also in a great position to work at the forefront of emerging disciplines such as data science and green technology.

Natalie Clamp
Content Digitiser
Kew Gardens

As an undergraduate, Natalie was an active member of our department. She sat on our Student-Staff Committee, co-founded APS Femwork to celebrate women in science and helped run school visits. She also volunteered with the National Trust, British Science Association and Twycross Zoo.

After graduating, Natalie went on to secure a position with the Soil Association in Bristol, working on their Innovative Farmers project, and in an environmental chemistry lab. She now works at Kew Gardens, on their Plants of the World Online project.

"There's such a breadth of academic expertise within the department, whatever you're interested in: from food security to animal behaviour, there's a member of staff that will help foster your knowledge and enthusiasm! Everyone is always happy to help and you'll be assigned a personal tutor to help you on your way too.

Studying within Animal and Plant Sciences has had an immense impact on my future career prospects – there are so many opportunities to build your skill base both within and outside of modules."

Joseph Earley
Associate
PricewaterhouseCoopers

Joseph pursued lots of different opportunities during his degree. He completed a placement at the Rothamsted Research Institute, worked in our labs, became a member of the Students' Union Council and founded the Union's Beekeeping Society.

Now based in Edinburgh, Joseph is training to be an accountant, and hopes to use his scientific knowledge to support sustainable business.

"Through networking and making the most of opportunities available, I was able to amass experience and enter what I think is a niche area ready for development – drawing from science's methodologies and applying this to ethical, sustainable business.

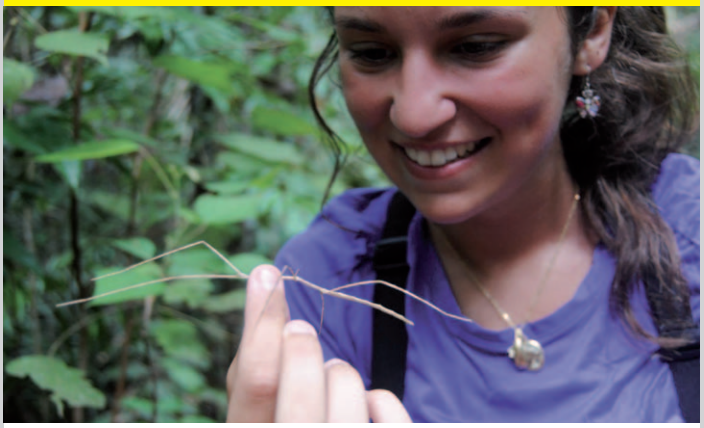
Overall, the University, Union and sheer amount there is to become involved in offered me lots of opportunities to develop myself, pursue my interests and construct a meaningful future."

Our students go on to inspire others, as teachers and museum curators, science journalists and wildlife filmmakers. Some enter academia, the charitable sector or government. Others join one of the many industry-based graduate schemes that are open to people with a good degree from a top university.

As a student in Animal and Plant Sciences, you'll get lots of support to help you work out what you want to do, and the steps you need to take to get there. The University runs workshops on CV writing, job hunting and preparing for interviews, and our Careers Service will continue to support you for three years after you graduate. You'll also learn important skills for excellent communication, teamwork, and quantitative and critical thinking.

One of our graduates, Emma Napper, has been interviewed by Vogue, Cosmopolitan and Wired about her work as a producer on the latest David Attenborough series, Planet Earth II. She's one of several of our alumni who gone into careers making wildlife documentaries.

Gabriela Montejo-Kovacevich
PhD Researcher
University of Cambridge



During her degree, Gabriela dedicated herself to research. She worked as a research assistant and volunteered in our evolutionary biology lab. This led to a funded field trip to California to study stick insects, and Gabriela co-authored the paper that came as a result.

Gabriela was also awarded the APS Alumni Award, which she used to research butterflies at the Natural History Museum. She developed her expertise in this area with a masters degree in Sheffield, before starting her PhD in Cambridge.

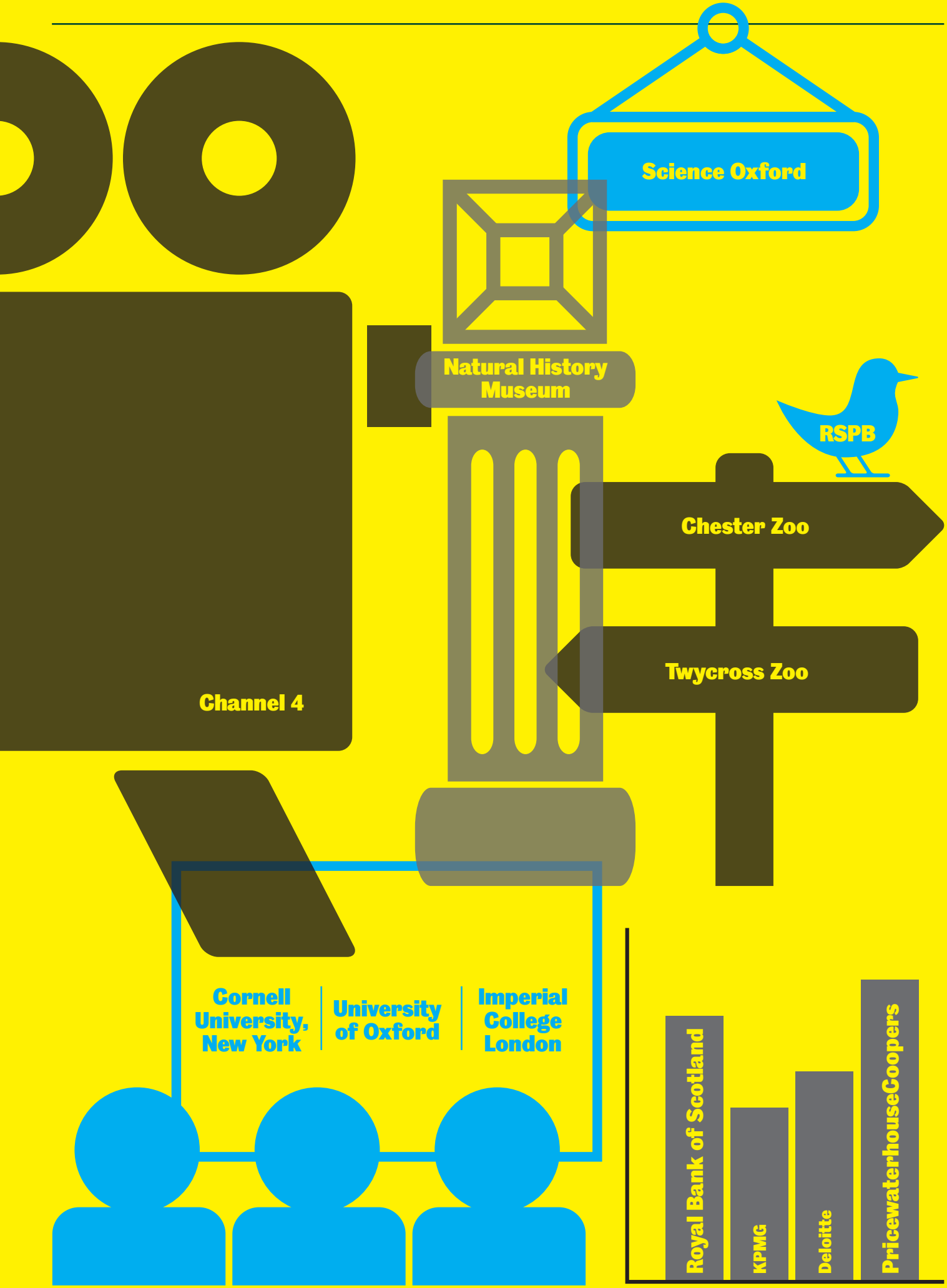
"It is very hard to choose a single 'best thing', but research excellence is what brought me to Sheffield and it has exceeded my expectations in all possible ways.

Studying at Animal and Plant Sciences has not only been fun, which is what science is about for me, but also made my CV highly competitive for postgraduate studies.

The opportunities that I have been given have certainly shaped my enthusiasm towards research, and I could not thank the department enough for these amazing three years."

Where our graduates go

Our graduates work for some great organisations, where they put the skills they've gained from their course into practice every day. We've pulled together data on some of the places our students have ended up working, to give you an idea of where your degree could take you.


Science Oxford
Natural History Museum
RSPB
Chester Zoo
Twycross Zoo
Channel 4
Cornell University, New York
University of Oxford
Imperial College London
Royal Bank of Scotland
KPMG
Deloitte
PricewaterhouseCoopers

Life in Sheffield

RANKED IN THE TOP FIVE UK UNIVERSITIES FOR BEST OVERALL STUDENT EXPERIENCE EIGHT YEARS IN A ROW

2011-2018 Times Higher Education Student Experience Survey

Sheffield's got it all: groundbreaking annual festivals, galleries with links to the Tate and the V&A, the world famous Crucible Theatre, and the biggest indie cinema outside London. More than a third of the city is inside the Peak District National Park, the first national park to be established in the UK.

Sheffield is a green, friendly and affordable place where you'll find incredible bars, restaurants, clubs and sports facilities, both on and off campus.

Clockwise from above
The Diamond
Sheffield street art
Sheffield Botanical Gardens
Students' Union
Millennium Gallery
Peddler food market
Climbing in the Peak District

Students' Union

Our Students' Union has a thriving nightlife, countless cultural events and hundreds of student societies. It's not surprising that it's been rated as the best students' union in the country for the last 10 years.

The Students' Union is also home to the Student Advice Centre and the Student Services Information Desk, while the university provides health and wellbeing support through the University Health Service and the University Counselling Service.

Many of our students join the Nature and Wildlife Society – find out more over the page.

THE BEST STUDENTS' UNION IN THE UK FOR TEN YEARS

2009–2018 Times Higher Education Student Experience Survey

Accommodation

University accommodation is another great place to meet new friends when you arrive. We offer a quality range of room types, affordable rents and three fantastic locations to choose from, all in walking distance from campus.

Your accommodation includes your bills, free internet and contents insurance. You'll also benefit from Residence Life events, sports activities and support from our Residence Mentors.

ONE OF THE 50 'MOST INTERNATIONAL' UNIVERSITIES IN THE WORLD

2018 Times Higher Education

International students

There is lots of support for international students when they come to Sheffield. You can be picked up from Manchester Airport when you arrive and take part in a range of activities to help you get to know the city, the University and other students.

The University's Student Services Information Desk can help with any academic, financial, personal, or social issues, with specially trained immigration advisers.

www.sheffield.ac.uk/international

Nature and Wildlife Society

When they start studying in Animal and Plant Sciences, lots of our students join the Nature and Wildlife Society, which is one of dozens of societies set up through the award-winning Students' Union at the University of Sheffield.

The group is dedicated to helping students explore the fascinating wildlife and scientific research that Sheffield and the surrounding area have to offer. Regular activities include:

- Stimulating Science, an informal discussion group with guest academics, as well as major talks – recent speakers have included BBC Wildlife's Professor George McGavin and former Animal and Plant Sciences student Elise Andrew, the founder of science blog IFLScience
- Walks around the Peak District National Park, which is just a few minutes' drive from campus
- Attenborough Nights, where students can watch nature films dating from as far back as the 1950s, as well as more recent wildlife spectaculars
- Trips and days out to zoos, aquariums, museums and more

Other popular societies amongst our students include the Biology Society, the Birdwatching Society and the pH7 team of science bloggers.

Search WildSoc

Apply and visit

You should submit your application through UCAS by **15 January** in the year that you plan to start your degree. Clearing and confirmation opens on A Level results day in mid-August, if your exam results are different to what you expected.

If you're taking a gap year, you can still apply before you get your exam results and we'll treat your application just the same. You'll need to meet all the conditions of our offer by **31 August** in the year that you plan to start your degree.

www.ucas.com

Open days

University open days take place throughout the summer. Explore the campus, take a tour of the Students' Union and accommodation, and find out more about us as a department. You can book your place at:

www.sheffield.ac.uk/opendays

If we offer you a place, you'll be invited to an applicant open day so we can get to know each other better. You'll get an in-depth overview of our courses, meet staff, see research in action and get a chance to talk to current students about what studying in Sheffield is really like.

We generally run these visits on a range of dates between December and March – we'll let you know.

Biosciences at Sheffield

Discoveries in bioscience can save and improve lives all over the world. Here at Sheffield our courses cover the full breadth of biology: from molecules and cells, right up to human anatomy and global ecosystems.

To explore our full range of courses in bioscience at Sheffield, visit the website:

www.sheffield.ac.uk/biosciences

Entry requirements

BSc courses (except Year Abroad)

A Levels: AAB, including Biology and a second science

A Levels + EPQ: AAB - ABB, including B from Biology and a second science + B

BTEC: DD in Applied Science with Distinctions in all Science Units, and either B in A Level Biology or A in another A Level science

International Baccalaureate: 34, including 6 in Higher Level Biology and a second science

Scottish Highers + one Advanced Higher: AAABB including a second science + B in Biology

Welsh Baccalaureate + two A Levels: B + AA, including Biology and a second science

MBiolSci courses (except Year Abroad)

A Levels: AAA, including Biology and a second science

A Levels + EPQ: AAB, including B from Biology and a second science + B

BTEC: DD in Applied Science with Distinctions in all Science Units, and A in A Level Biology or second science

International Baccalaureate: 36, including 6 in Higher Level Biology and a second science

Scottish Highers + one Advanced Higher: AAAAB including a second science + B in Biology

Welsh Baccalaureate + two A Levels: A+AA-B+AA, including Biology and a second science

BSc with Year Abroad

A Levels: AAA, including Biology and a second science

A Levels + EPQ: AAB, including B from Biology and a second science + B

BTEC: D*D in Applied Science with Distinctions in all Science Units, and either B in A Level Biology or A in another A Level science

International Baccalaureate: 36, including 6 in Higher Level Biology and a second science

Scottish Highers + one Advanced Higher: AAAAB including a second science + B in Biology

Welsh Baccalaureate + two A Levels: A+AA, including Biology and a second science

MBiolSci with Year Abroad

A Levels: AAA, including Biology and a second science

A Levels + EPQ: AAB, including B from Biology and a second science + B

BTEC: D*D in Applied Science with Distinctions in all Science Units, and A in A Level Biology or second science

International Baccalaureate: 36, including 6 in Higher Level Biology and a second science

Scottish Highers + one Advanced Higher: AAAAB including a second science + B in Biology

Welsh Baccalaureate + two A Levels: A+AA, including Biology and a second science

You can find out which other qualifications we accept, including English language requirements at:

www.sheffield.ac.uk/undergraduate/apply/international-qualifications

Biosciences Foundation Year

We offer a foundation year for students who want to study biosciences, but don't meet the entry requirements to go straight into first year. So if you've studied the right subjects but haven't achieved high enough grades, or you've achieved good grades in unrelated subjects, this could be the route for you. After successfully completing the one-year programme, you'll progress onto the first year of your chosen degree.

Visit www.sheffield.ac.uk/sefy for more information and entry requirements.

The Sheffield Firmers' Guarantee

If you apply for a MBiolSci degree but get AAB in your A Levels instead of AAA (or equivalent), you're still guaranteed a place on the equivalent BSc course. You just need to accept our offer of a place on the MBiolSci course as your firm first choice in UCAS.

Once you're on a BSc degree, it might be possible to upgrade to the MBiolSci, although we can't make any promises. The important thing is that there's no risk if you apply for a MBiolSci and don't get AAA – you'll still have the chance to graduate with a BSc if you get AAB.

Mature students

You can apply directly for Biology with a Foundation Year through the University's Department for Lifelong Learning if you don't meet our direct entry requirements.

www.sheffield.ac.uk/dll

International students

If you don't meet our entry requirements, our International College offers an International Foundation Year in Science and Engineering. The programme is designed to develop your academic level in your chosen subject, introduce you to the study skills that will be vital to success and help with language if you need it.

www.usic.sheffield.ac.uk

Tuition fees

Tuition fees for UK, European Union and international students are given on the University of Sheffield's webpages for undergraduates here:

www.sheffield.ac.uk/registration/tuitionfees

Information for disabled students

Specific information for disabled students can be found on our website:

www.sheffield.ac.uk/study/policies/disabled-applicants

Solving big problems

A lot of what we do in Animal and Plant Sciences is motivated by the need to find solutions to some of the biggest problems facing our planet. On your degree you'll learn about the many challenges we face, and learn first-hand from experts who are finding ways to overcome them. These are some of the areas where we want to help you make a difference.

Climate change and sustainability

We have a proud tradition of supporting the fight against climate change. Our Arctic ecology expert Professor Terry Callaghan was a lead author on the Intergovernmental Panel on Climate Change's work that was awarded the Nobel Peace Prize, alongside Al Gore. More recently, Terry was awarded the International Arctic Science Committee Medal for his contributions to major Arctic research projects.

Professor David Beerling is leading a new sustainability initiative, the £10 million Leverhulme Centre for Climate Change Mitigation. The centre focuses on how enhanced rock weathering can cool the Earth's temperature by safely removing greenhouse gases from the atmosphere. David, who was elected a Fellow of the Royal Society in 2014, also wrote the popular science book The Emerald Planet and worked on the major BBC Two series How to Grow a Planet.

Professors Duncan Cameron and Jurriaan Ton lead the new Institute for Sustainable Food at the University of Sheffield which finds dynamic solutions to the challenges of food security and sustainability. Duncan's expertise led to him presenting at the pivotal 2015 United Nations Framework Convention on Climate Change in Paris. He also attended the Marrakech conference in 2016, alongside his PhD student Niall Bradshaw, one of our former undergraduates.

Tim was elected a Fellow of the Royal Society in 2004, and has won several awards for his teaching, including the UK Higher Education Bioscience Teacher of the Year Award. He's also the author of several popular science books. His latest, The Most Perfect Thing, looks at the science behind birds eggs and was shortlisted for the Royal Society Insight Investment Science Book Prize – the "Booker Prize of science writing". He even has a fly named after him, Leiomyza birkheadi, and appeared on a recent episode of the BBC's Natural World alongside Sir David Attenborough.

Conservation

Professors Tim Birkhead and Ben Hatchwell have been working on the Skomer Island nature reserve, off the coast of Wales, since 1972. The island's population of guillemots has fallen from around 100,000 in the 1930s, to just 2,000 by the time Tim and Ben started their long-term studies. Several of our former undergraduates are now working on the project, which is devoted to understanding population fluctuations by monitoring adult and chick survival, reproductive success, timing of breeding and the diet of the guillemot population.

Professor David Edwards has studied the extinction crisis faced by tropical birds when forests are converted into farmland. The study suggested that conversion of forests into farmland causes massive losses of avian phylogenetic diversity – a measure of the evolutionary history of tropical bird species. With an international research team, David examined the effects of intensive farming practices in Colombia and found that farming intensively in one area while leaving large natural reserves untouched will save more evolutionary distinct species of bird than farming in more areas but with low intensity.

Evolution

Males and females across the animal kingdom often look and behave very differently, with important consequences for many aspects of biology, ranging from biomedical research to conservation. Dr Alison Wright studies how and why sex differences arise, with a particular focus on the relative importance of the sex chromosomes. Alison's research has shown that sex chromosomes in birds play a key role in female fertility and egg production. More recently, she investigated sex differences in colour in the Trinidadian guppy and found that the Y chromosome is key for the evolution of male ornamentation. The significance and quality of Alison's research was recognised internationally by the Young Investigator Award from the American Society of Naturalists in 2017.

"My philosophy is that teaching should be inspiring. I encourage all my students to get out in the field, to get involved in research, because I believe this makes them better scientists and better citizens."

Professor Tim Birkhead FRS, Professor of Zoology

Any questions?

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www.sheffield.ac.uk/aps

apsadmissions@sheffield.ac.uk

Follow us on social media:

/SheffieldAPS
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@SheffieldBiosciences

The content of our courses is reviewed annually to make sure it's up-to-date and relevant. Individual modules are occasionally updated or withdrawn. This is in response to discoveries through our world-leading research; funding changes; professional accreditation requirements; student or employer feedback; outcomes of reviews; and variations in staff or student numbers. In the event of any change we'll consult and inform students in good time and take reasonable steps to minimise disruption.

We timetable teaching across the whole of our campus, the details of which can be found on our campus map. Teaching may take place in a student's home department, but may also be timetabled to take place within other departments or central teaching space.

This publication is correct as at the time of print, but please see www.sheffield.ac.uk/aps for the most up-to-date information about these programmes.