Animal Biology Degrees at Glasgow

Dr Stewart White

Talk will begin at 15.30
What should you be looking for in a degree course?

- A subject that interests you
- An up-to-date course, taught by experts
- A course that gives you flexibility
- A course that offers opportunities to extend yourself and broaden your horizons
- A course that teaches you valuable skills that increase your job prospects
Three degrees in the Animal Biology group:

1. Zoology (Hons) - 4 Years

2. Marine and Freshwater Biology (Hons) - 4 Years

3. Animal Biology - 3 Years

Also Zoology and Marine & Freshwater Biology can be done as MSci degree - an additional work placement year
Animal Biology degrees encompass:

- *Evolution and animal diversity* – understanding the nature and origins of the diversity of animal life
- *Ecology* - how animals interact with their environment
- *Development* - how animals develop from egg to adult
- *Physiology* - how animals function in different environments
- *Animal behaviour and life histories* – what animals do and why
- *Genes, inheritance and molecular processes*
Animal biologists study animals at different biological levels: molecular, cellular, organ, whole organism, population, species, ecosystem.
Integrative approach

How do Elephant seals manage to dive to a depth of 1550 m and stay underwater for over 100 min?

Need to look at their physiological adaptations
Integrative approach

How does a storm petrel, weighing just 25g (same as a mouse), live to be over 33 years old?

And why does a queen ant live to be 28 when the workers only live a few months?

Molecular mechanisms to protect against ageing
Who would be teaching you?

Prof. Colin Adams – Effects of introduced fish on aquatic communities

Dr Simon Babayan – Host-parasite interactions in wild animals

Dr David Bailey – Ways to improve success of marine conservation areas

Dr Davide Dominoni – Effects of urban environments on wildlife

Dr Roman Biek – Dynamics of rabies epidemics in wild mammals

Prof. Sarah Cleaveland – Transmission of diseases by African carnivores

Dr Kathryn Elmer – Evolution and adaptive radiation in fish, salamanders and lizards

Prof. Heather Ferguson – Effect of mosquito behaviour on malaria transmission
Prof. Dan Haydon – Disease dynamics in the Serengeti ecosystem, Tanzania

Prof. Shaun Killen – The costs and benefits of group living in animals

Dr Ashley Le Vin – Animal behaviour, kin recognition in animals

Dr Martin Llewellyn – Parasites, and impacts of gut microbiota on hosts

Dr Jan Lindstrom – The evolution of antibiotic resistance in parasitic nematode worms

Prof. Barbara Mable – Effects of gene duplication on reproduction and mating systems

Dr Anna McGregor – Marine mammal behaviour, noise pollution

Prof. Jason Matthiopoulos – The analysis of animal movement and habitat choice
Dr Dominic McCafferty – thermal biology, biology of marine mammals

Prof. Neil Metcalfe – Links between metabolic rate, behaviour and ecology in fish

Prof. Pat Monaghan – How early-life stress affects the rate of ageing in birds

Dr Ruedi Nager – The welfare and breeding ecology of birds

Prof. Rod Page – Developing methods to measure and record biodiversity

Dr Kevin Parsons – The evolution and development of body shape in fish

Dr Victoria Paterson – The biology of parasites

Prof. Colin Selman – Factors affecting the rate of ageing in mammals

Dr Sofie Spatharis – The productivity and dynamics of marine ecosystems

Dr Stewart White – Ornithology/Tropical rainforest ecology
Structure of Animal Biology Degrees

Level 1 is general biology

Level 2 is a bit more specialised

Choose degree at end of 2nd year:

Level 3
- Zoology
- Marine & Freshwater Biology
- Animal Biology (3 yrs, not Honours)

Level 4 Senior honours
Course 2A: Animal Biology, Evolution & Ecology

Theme 2: Evolution & diversity

Theme 1: Radiations & extinctions

Theme 3: Living together

Theme 4: Anthropocene
**Course 3A:**
- Field course at SCENE
- Core skills
- Invertebrate biology
- Aquatic ecosystems
- Field course at Millport FSC
- Applied evolution
- Vertebrate life
- Applications & careers week

**Course 3B:**
- Animal physiology
- Parasite biology
- Ecological & developmental biology
- Quantitative skills

**Mini project programme**
Ecology / Freshwater Biology Field Courses

run at the Scottish Centre for Ecology and the Natural Environment – the University’s own field station on Loch Lomond

Level 3
New teaching building opened in 2014

Level 3
Field course on freshwater ecology
Also residential field course for terrestrial ecology based on surrounding oak woods and mountains
Marine Biology Field Course, Millport, Isle of Cumbrae

- One week residential field course at Millport Field Studies Council
- Investigate biology of rocky and sandy shores, marine ecosystems
Quantitative skills

✓ Designing effective experiments
✓ Statistical analysis

Applied evolution

✓ Molecular methods
✓ Applications for animal conservation
Mini-projects
Put training into practice!
Design, Run & Write up a small research project

Cochno Farm
SCENE
Millport
GK Teaching Labs

Level 3
Senior honours

- Three 10-week courses - choice of option courses
- Core Skills – critical analysis, essay
- Honours research project – work individually on unique project, lasting almost 6 months (starting in summer vacation or at start of 1st Semester), supervised by member of staff
Wide variety of Honours projects

- Impact of urbanisation on leatherback turtle nesting behaviour
- Impact of elephants on woody vegetation in South Africa
- Effect of wolves’ presence on residents’ attitude in Finland
- Chronic stress responses in dancing monkeys in Pakistan
- Diversity of primates in Peru
- Plumage development in wandering albatross chicks
- Acoustics as indicator for biodiversity in coral reefs in Sri Lanka
- Microplastics in aquatic sediments and birds
- Tick bite risk in people of the Outer Hebrides
- Role of farm management on parasite abundance
- Association between diet and cellular senescence in mice
- Changes in immunoglobulin G in grey seal milk
Different options:

Evolution: Pattern and Process
Ecology and Conservation of African ecosystems – field course in Kenya
Tropical Marine Biology –
field course in Red Sea

Level 4
Freshwater Ecology
Behavioural Ecology

Level 4
Ecological speciation
Fisheries and Aquaculture
Applying Ecology: Conservation and Management of Populations
Our ‘Work Placement’ Degree
MSci Zoology / Marine & FW Biology

- **First 3 years** identical to honours course
- **Year out on work placement** between Level 3 and 4
- **5th year** – is the level 4 honours course
Work Placement Destinations

Apply to do this degree option in 3rd year – competitive, so academic performance is critical
Zoological Society

- Student organisation
- Organises scientific talks, trips
- Social events
Exploration Society

✓ Student society runs many expeditions each summer

✓ Destinations include Cyprus, Ecuador, Guyana, Iceland, Sri Lanka, Tobago, Trinidad

✓ Can conduct Honours project as part of an expedition
Recent Animal Biology Graduates

• Research officer studying fur seals for British Antarctic Survey
• Biodiversity officer, Glasgow city council
• PhD in environmental impact of whale watching off Scotland
• Biology teacher
• Researcher in lizard conservation in Australia
• Conservation organiser for a reserve in Ecuador
• Researcher for wildlife documentary company
• Research assistant studying ageing in meerkats, Cambridge University
• Researcher studying Marine Protected Areas, Natural England
Recent Animal Biology Graduates

• Assistant Marine Survey technician, Orkney Island Council.
• Principal Aquatic Ecologist, Jacob’s Engineering
• Phytoplankton Ecologist, SEPA
• Conservation biologist, Kakapo research, New Zealand
• Head of habitats and species for RSPB Scotland
• Animal nutritionist, Chester Zoo
• Wildlife film maker, National Geographic
• Elephant conservation officer for a game park in South Africa
• Fisheries biologist, Environment Agency
Recent Animal Biology Graduates

• Molecular ecologist studying fish genetic diversity, Marine Lab, Aberdeen
What our graduates thought of our degrees

Look at the National Student Survey at:

[discoveruni.gov.uk](http://discoveruni.gov.uk)

97-100% of our students are satisfied with the course
Any questions?
Raise them at the webchat from **16.00 - 17.00** via the online registration form: