OUR **HOME!**

This is where our academic staff are based, students meet with tutors and have their practical class…

- The Life Sciences Building – Opened 2010
- We also have labs at the Southampton General Hospital

Over the next decade, we plan to invest more than

£300m

in our infrastructure and facilities

Show you around

13.55

An introduction to our research, our degree programmes and some reflections on ‘ists’ and ‘isms’ through a career journey so far.

14.20

- Colleagues and students
- Teaching labs
- Research facility tours

Answer any questions you have

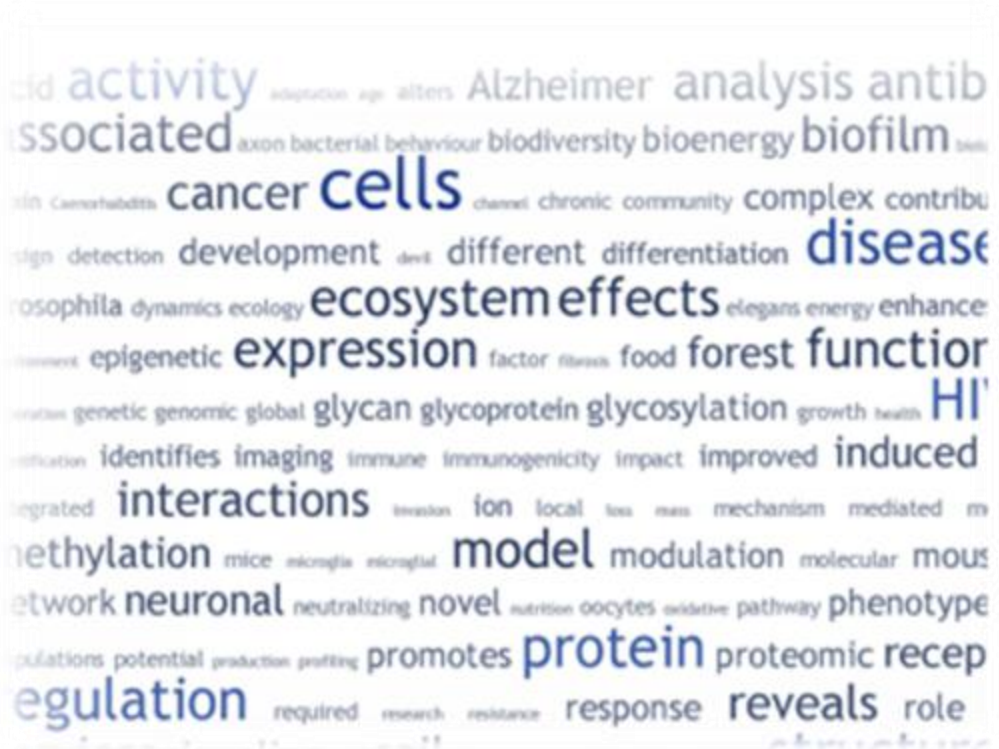
- 15.15

Back to ground floor concourse

University of Southampton

WE DELIVER A **RESEARCH-LED EDUCATION**

- From biodiversity through to biomedicine
- 85% of our research is world-leading or internationally excellent.
- We are in the TOP TEN in the UK for our research impact that tackles real-world problems. (REF 2021)



Global **Top 100** University*
and founding member
of the **Russell Group**

*QS World University Rankings 2023

University of Southampton

WE DELIVER A **RESEARCH-LED EDUCATION**

What does this mean? …who would it suit?

This means that students will

…be taught by experts in their field who are passionate about the topic

…be stretched and challenged

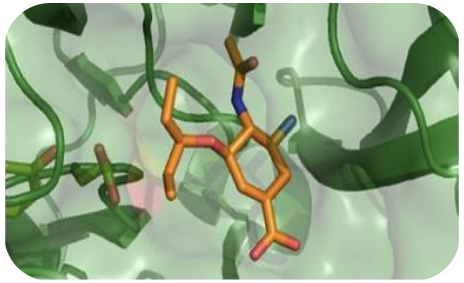
…have access to multi-million £ equipment and labs

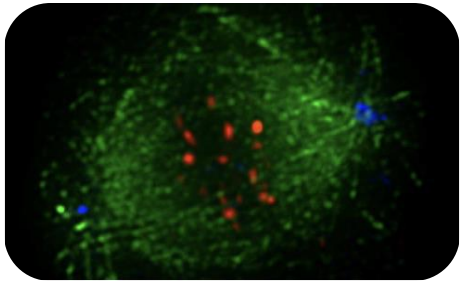
Top 15
UK university*
*The Complete University Guide, 2023

RESEARCH LED EDUCATION ACROSS THE BIOSCIENCES…

University of Southampton

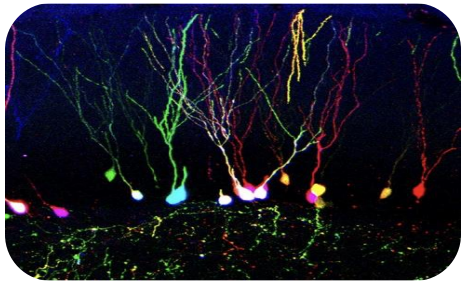
Molecular & Precision Bioscience

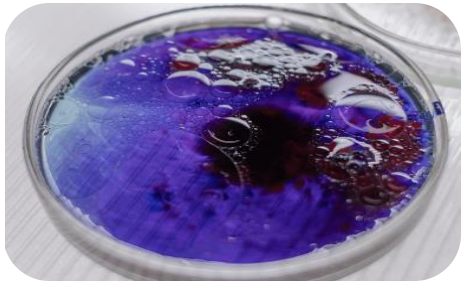




Cell & Developmental Biology

Neuroscience





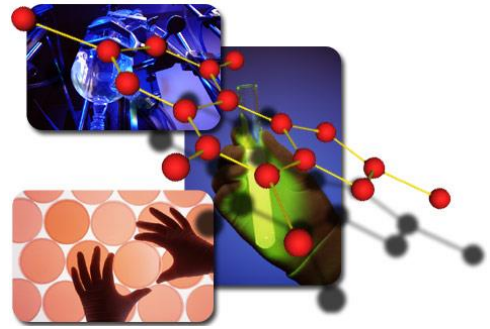
Microbiology

Plants and Food Security

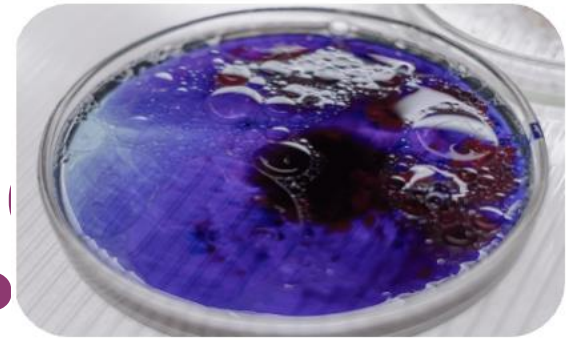
Ecology and Evolution

BIOLOGY

ZOOLOGY



BIOMEDICAL SCIENCES



P S

NEUROSCIENCE

Microbiology

PHARMACOLOGY

BIOCHEMISTRY

‘Modern’ zoology

Professor Mark Chapman

Professor

Accepting applications from PhD students.

Connect with Mark

Email: M.Chapman@soton.ac.uk

Tel: +44 23 8059 4396

Southampton features in prime time Sir David Attenborough documentary

Published:15 December 2023

A computer animation of the pliosaur produced for the programme. Credit: BBC Studios

Researchers from the University of Southampton are set to appear in a new BBC Natural History programme revealing the secrets of a giant pliosaur, a ferocious predator which inhabited our seas at the same time as dinosaurs roamed the Earth about 150 million years ago.

The documentary, titled ‘Attenborough and the Giant Sea Monster’ (BBC One and iPlayer, 8pm, 1 January 2024), follows Sir David Attenborough on a journey of discovery as he explores the fascinating story of an enormous marine reptile whose skull was found buried on the Dorset coast near Kimmeridge Bay.

For questions about Biology or Zoology programmes in the modern era

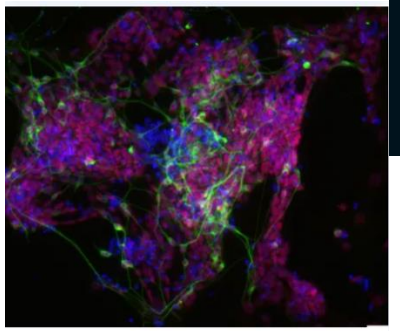
Interdisciplinary

MRC Lifecourse Epidemiology Centre

University of Southampton

Research theme: Living systems

Research in this area includes cell and molecular biology which is a core activity for life sciences.



Research theme: Insights through data

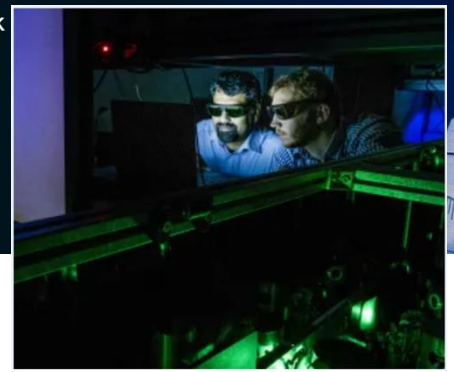
Our researchers use mathematical and computational methods to understand large data sets relating to life sciences.

Research institute

Institute for Life Sciences

We bring together researchers with expertise across the themes of health and medicine, living systems, disruptive life technologies, and insights through data. We have an established reputation for working collaboratively, taking disruptive approaches and risk through interdisciplinary team science.

Part of **Archaeology**, **Biological sciences**, **Business**, **Engineering**, **Mathematical sciences**, **Medicine**



Research theme: Disruptive life technologies

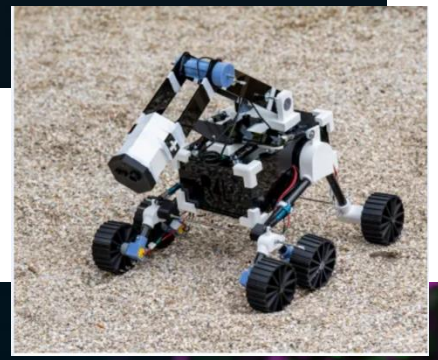
Research in this area includes interdisciplinary activity across engineering and biomedical sciences.

Research group

Bioengineering Group

Our research focuses on the application of engineering principles and life sciences. We're exploring ways to solve problems across topics such as biology, medicine and healthcare.

Part of **Engineering**



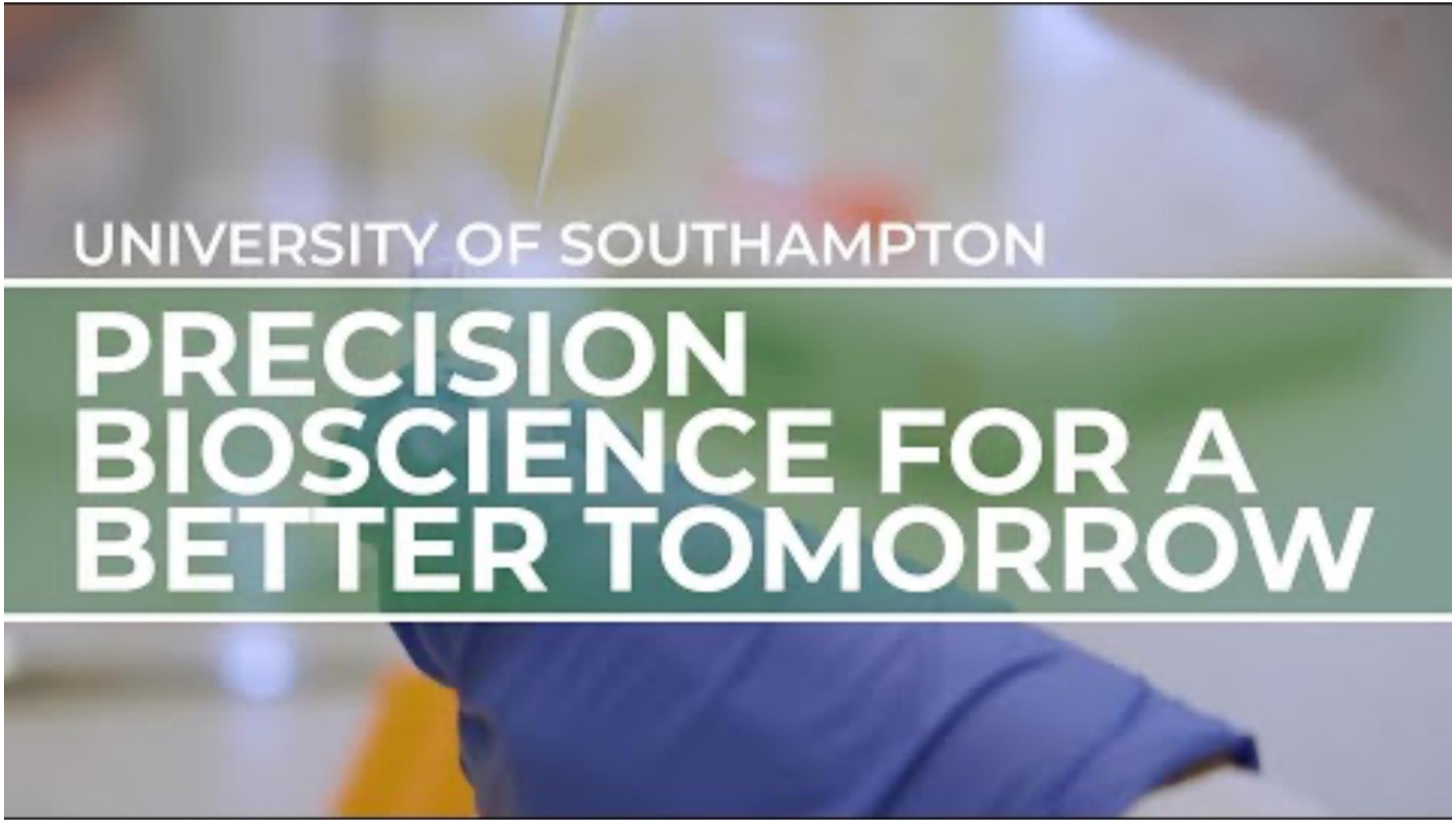
Research centre

Centre for Human Development, Stem Cells and Regeneration

The CHDSCR brings together researchers studying stem cells and development and ways to promote the regeneration of diseased or injured tissues. We aim to provide an environment where excellent scientists can make exciting discoveries for patient benefit.

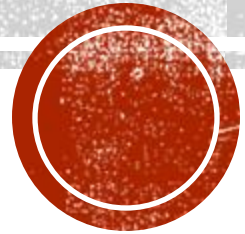
Precision biosciences

University of Southampton



AN EXAMPLE JOURNEY

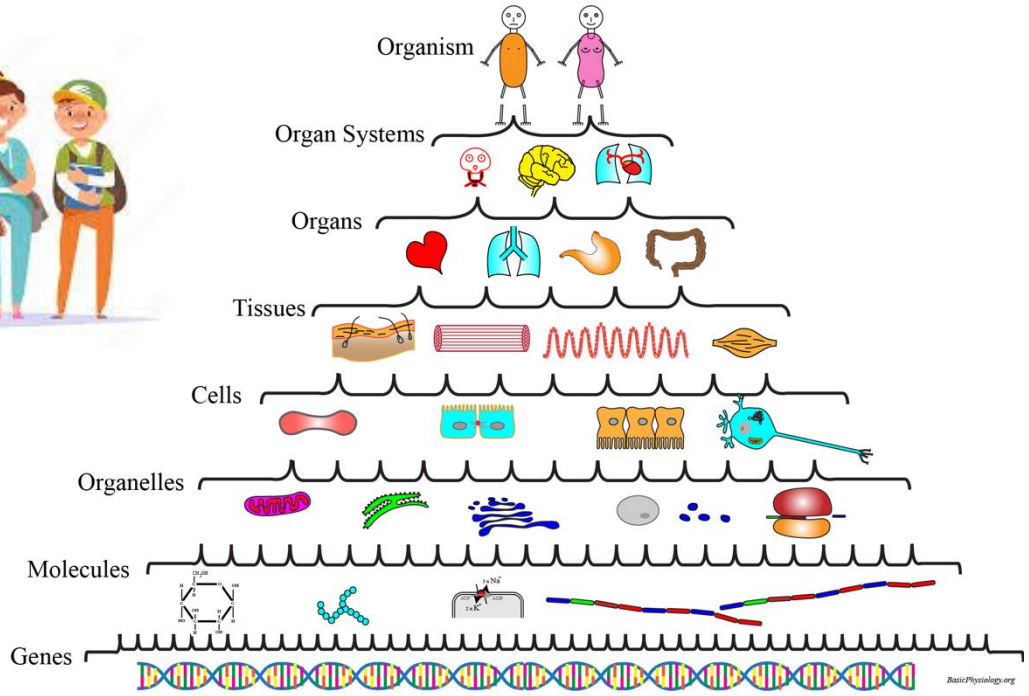
(Mine)



SCHOOL

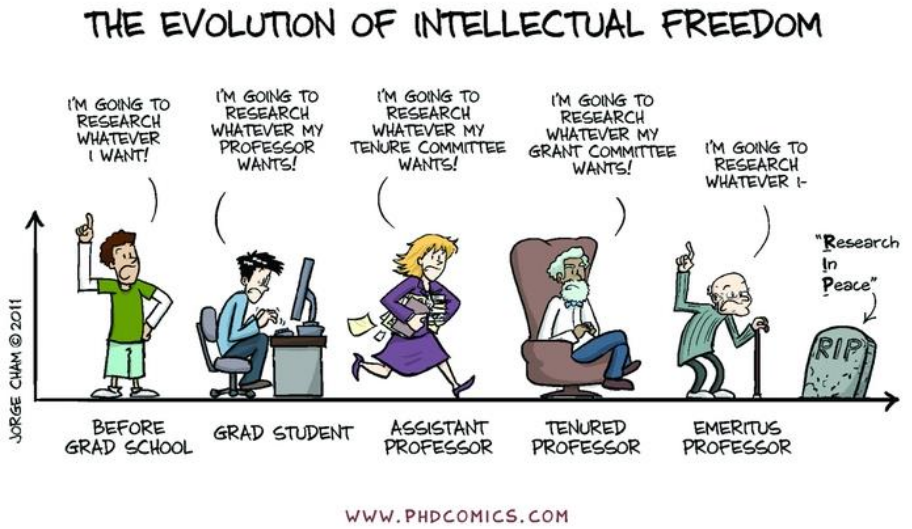
- I started 6 A-levels
- I finished 4 (academic 'progress' rarely linear)
- The main ones were Geography, Biology and Chemistry
- I wanted to do **sports science** in 2000
- I ended up doing **Physiology** in 2001 because I lost a tennis match…

UNDERGRADUATE



- I really enjoyed **Physiology** but it clicked late
- Final year (3) project
- Then I "worked" – I loved the scientific process
- I wanted to become a proper **physiologist** (in paradise preferably)
- I got a Phd position in Tooting

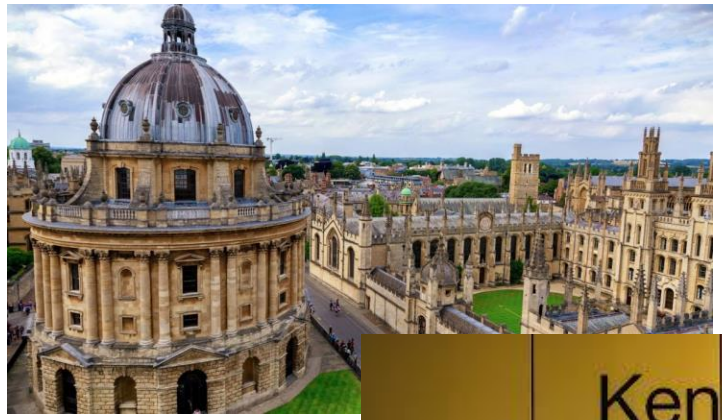
POST GRADUATE AND ON



- My PhD supervisor was fantastic
- I wanted to do more **cell** and **molecular biology**.. preferably in paradise
- I took a PDRA in Stepney in **Bioengineering**
- I had another great boss (an **engineer**)
- I took **physiology-biology-bioengineering** and made a discovery that **clinicians** were interested in

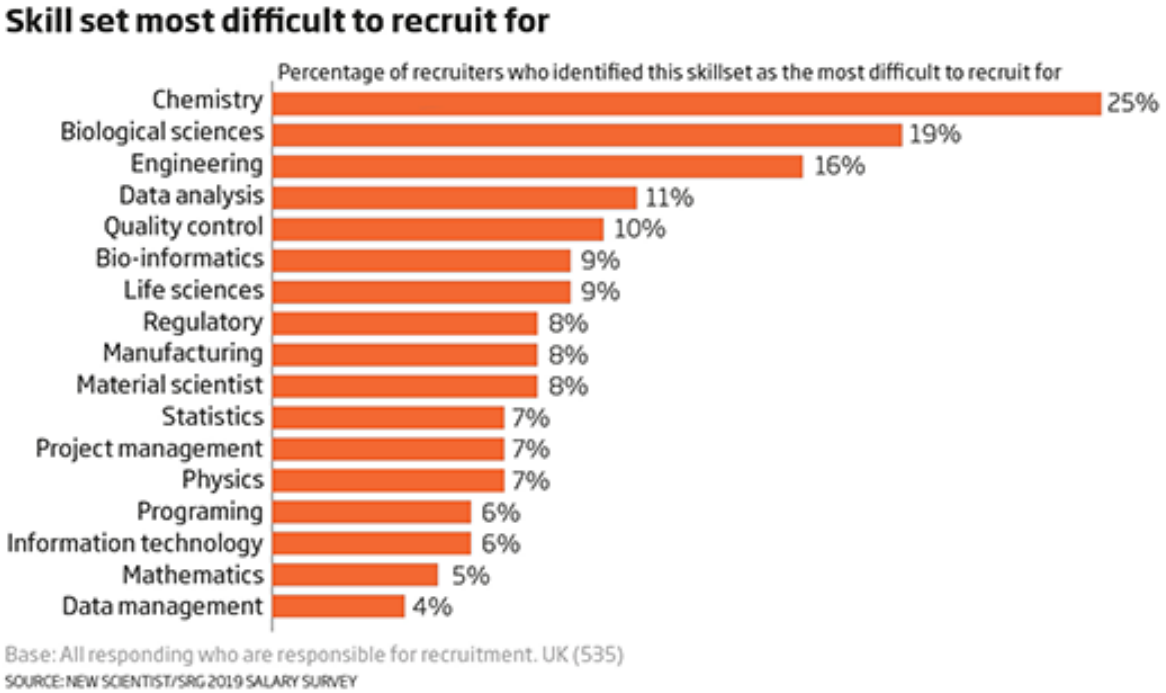
SINCE

- My discovery created a **Fellowship**
- But only once I'd met a **clinician**
- I wanted to run a lab
- She helped me make this possible in Oxford
- I ran a lab …
- I loved Oxford but…
- I now live in (MY) paradise



SUMMARY

- Expect change
- Paths are not straight, linear nor predictable
- **People (of all ists and isms)** to **skill up**
- Work with **people you like doing work the way you like to**
- strategic EYES OPEN for opportunities
- Identify **gaps** that fascinate
- Science is **interdisciplinary** these days – work/inhabit in the interfaces and build skills and interests accordingly – **learn the vocabulary**
- If not sure, choose the broadest and most flexible path



MY SCIENCE

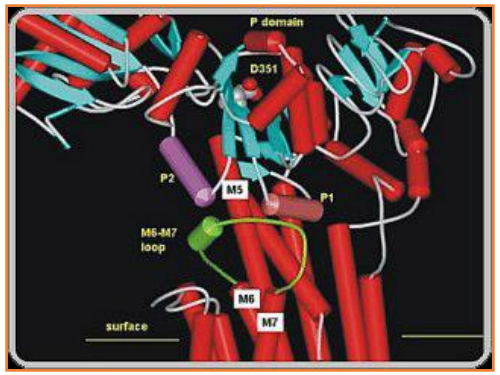
- How forces shape biology
- Molecular biology-imaging-bioengineering-stem cells-adolescent health-disease-ageing
- Axolotl to anisotropy in tissue pathology
- A varied journey of interdisciplinary science and ideas
- Why here ?

WHY DID I BUILD MY RESEARCH LABORATORY HERE?

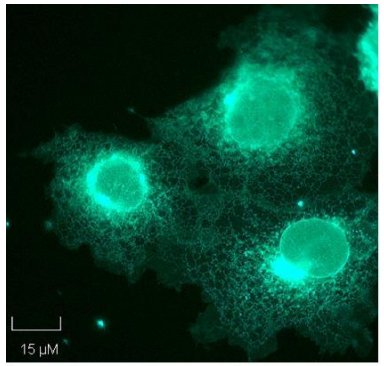
- Why here ?
- World class research, across scales and through disciplines embedded in rich interdisciplinary environment (IFLS)
- Broad educational agenda associated and woven into research
- Supportive (P.A.T), flexible, career realistic training environment

Breadth
DEGREE PROGRAMME….

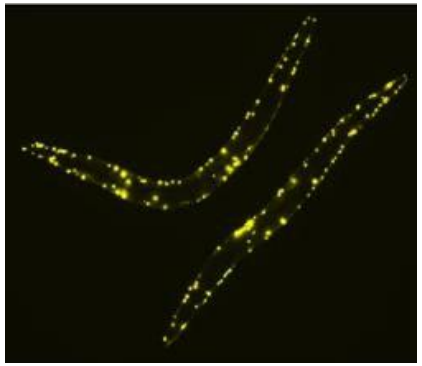
Biological Science is the study of life….



Molecules



Cells

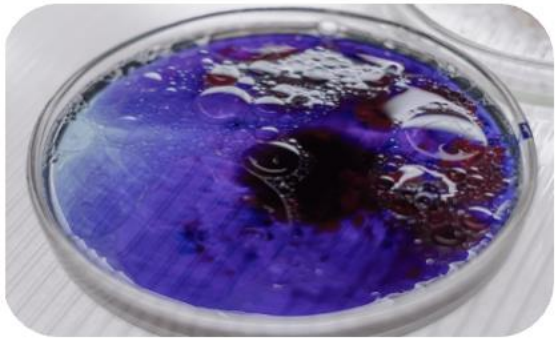


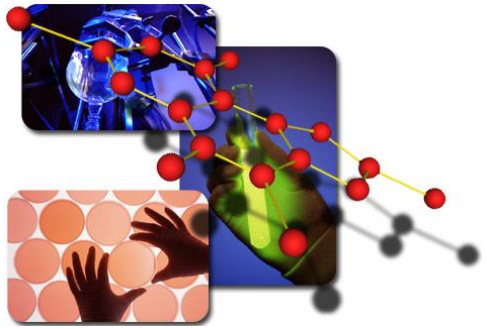
Tissues

Organisms/
Ecosystems

BIOLOGY

ZOOLOGY





BIOMEDICAL SCIENCES

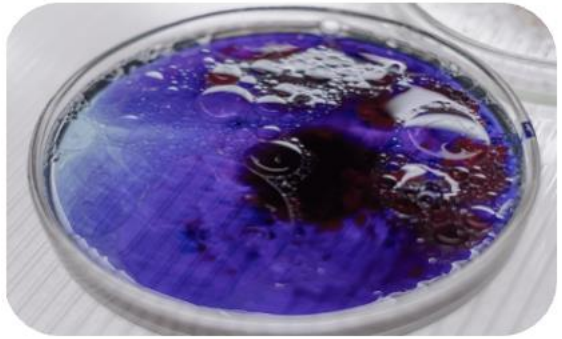
NEUROSCIENCE

Microbiology

PHARMACOLOGY

BIOCHEMISTRY

BSc & MSci Microbiology



- New 3 and 4 year programmes in Microbiology, from human to planetary health, including the latest in microbiome research.

- Exploring the **global importance of microbiology**, including in:
  - antimicrobial resistance,
  - climate change,
  - infectious diseases,
  - food and water security,
  - global health,
  - sustainability.

Microbiology

Career opportunities

Once you've graduated from this course, you'll be prepared for career opportunities across a range of industries, including:

- → agriculture, water, and oil
- → marine
- → medical and pharmaceutical industries
- → education
- → communication and management

You'll also be in an ideal position to continue building your expertise through further study.

- **With opportunities to learn about current research and from industry, and graduate with a wide range of skills relevant to many careers from clinical to environmental and beyond.**

ROYAL SOCIETY OF BIOLOGY **ACCREDITATION**

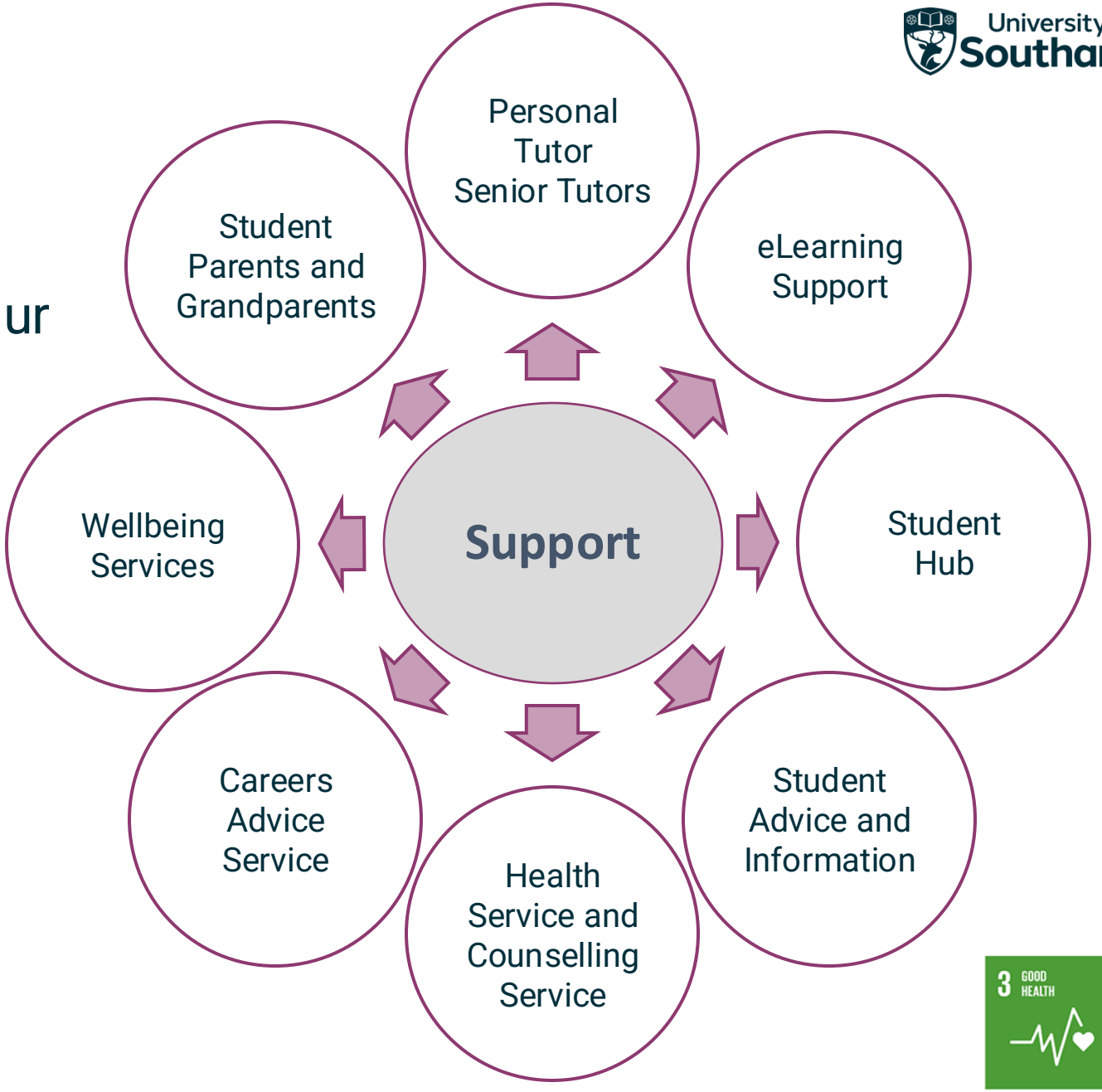
- All offered as 3 Year BSc or 4 Year MSci
- Possibility to change across programs
- Options to change from BSc to MSci
- Royal Society Accreditation

Royal Society of Biology
Accredited Degree

Royal Society of Biology
Advanced Accredited Degree

SUPPORTIVE

Support from your **Personal Academic Tutor** throughout your degree.



OUR **DEGREE PROGRAMMES**

1st Year	**Foundations** for your degree and a **practical training** (in the lab or the field)
2nd Year	**Programme Specific Modules.** A range of **lab practical** and **specialist field courses**, with an **opportunity to study abroad**.
Year in Employment	
3rd Year	Your **Capstone Project** and **Specialist Modules**
4th Year (Masters)	**Research Projects** in our research labs and **Advanced Skills Modules**

A typical week:

- 8 hours of lectures
- 3 hours of practicals
- 2 hours of workshops
- 1 hour of tutorial
- Independent Learning

FIRST YEAR:
LECTURE TOPICS

- What are the building blocks of life and how do they lead to the complexity seen in biology?
- How do systems work? Cells, organs, organisms, ecosystems

FIRST YEAR:
PRACTICAL SKILLS

How do scientists answer these questions:

- Module (course) "***How to think like a scientist***"
- **Residential Field Course** (Biology, Zoology), or
- **Lab week** (Biomedical Sciences, Biochemistry, Neuroscience, Pharmacology)
- **Practicals** and **workshops** each week, small group **tutorials** every two weeks

SECOND YEAR

Flexibility to shape your degree to suit your interest/career aspirations: optional modules alongside compulsory modules

SECOND YEAR: **SPECIALIST LECTURES**

- Modules allow you to choose subjects that fascinate and challenge you:
  - Food security
  - Environmental sustainability
  - Immune therapy
  - Replacement organs
  - Novel drug design
- Modules outside Biological Sciences are also available (Interdisciplinary, Languages, Global Climate Change, Chemistry…)

SECOND YEAR: **PRACTICAL SKILLS**

University of Southampton

Continue to hone your **hands-on practical skills** at the lab bench or in the field.

Develop your ability to **analyse**, **interpret** and **communicate** science

- **Field Course** (Biology & Zoology)
- **Labs** (Biomedical Sciences, Biochemistry, Neuroscience & Pharmacology)

SECOND YEAR: **STUDY ABROAD**

University of Southampton

- Semester 2 (January –June)
- No extra fees
- European Universities
- (Gothenburg, Oslo)
- Hong Kong and other SE Asia
- Australian and New Zealand
  - James Cook University
  - University of Western Australia
  - University of Adelaide
  - University of Sydney
  - University of Auckland
  - Deakin University
  - University of Tasmania
- USA/Canada

BETWEEN YEARS 2 AND 3: **SUMMER PLACEMENTS**

University of Southampton

wellcome trust

BIOCHEMICAL SOCIETY

S R F
Society for Reproduction and Fertility

society for applied sfam microbiology

Leading the fight against dementia
Alzheimer's Society

gs the geneticssociety

The Physiological Society

The Excel Southampton Internship Programme

BSCB
British Society for Cell Biology

SUMMER PLACEMENTS

YEAR IN EMPLOYMENT

- Between Years 2 and 3
- Opportunities with big pharma, charities, local organizations
- Can be in sectors other than Biological Sciences
- Supported by university framework and local tutors

University of Southampton

gsk GlaxoSmithKline

Pfizer

Game & Wildlife CONSERVATION TRUST

IBM

LLOYDS BANK

PURIDIFY

NHS

PORTON BIOPHARMA

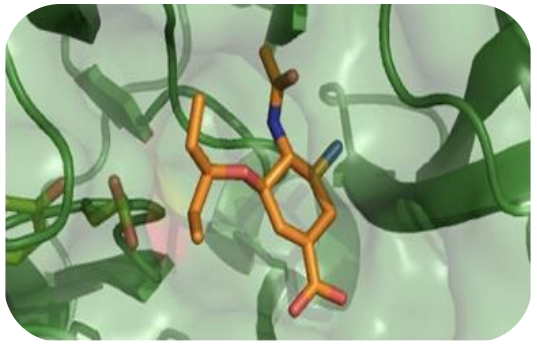
SANOFI

Lilly

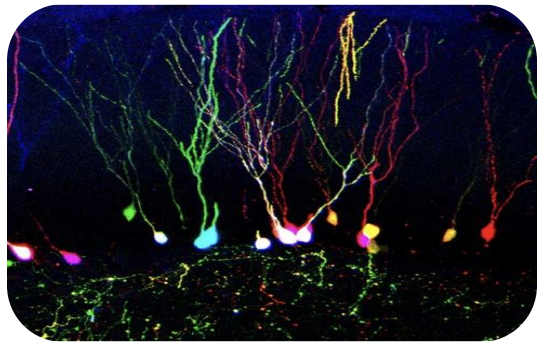
THIRD YEAR: **TIME TO SPECIALISE**

University of Southampton

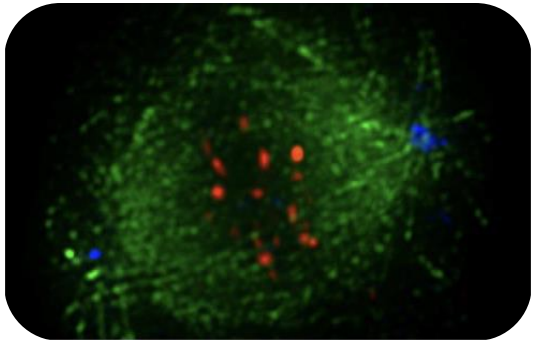
Molecular & Precision Bioscience



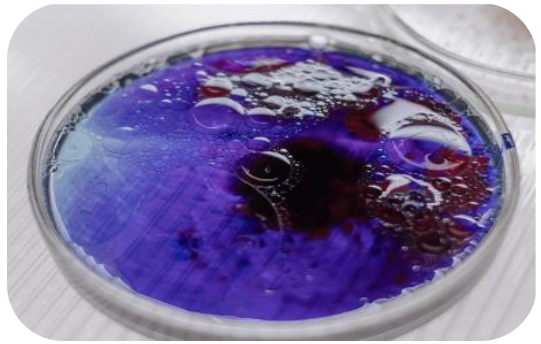
Neuroscience



Plants and Food Security



Cell & Developmental Biology



Microbiology

Ecology and Evolution

Specialist modules/courses taught by our internationally recognized scientists

THIRD YEAR:
INDEPENDENT RESEARCH

University of Southampton

Your own independent research project:

- **Laboratory Research** (Gene Editing, Protein Structure, Developmental Biology, Genome Sequencing, Microbial Evolution)
- **Field Research** (Mammal Behaviour, Bird Foraging, Prey Choice)
- **Big Data (in silico)**
- **Bioscience Business**
- **Bioscience Education**
- **Science Communication**

Develop your skills in **project management**, **communication**, **data acquisition and analysis**, **teamwork**…

Contribute to the **scientific knowledge** base through published papers.

INTEGRATED MASTERS
A **RESEARCH FOCUSSED** 4TH YEAR

University of Southampton

Graduate with a Masters in Science

- 50% research project
- 50% in depth/technique-focused modules

Entry Requirements:

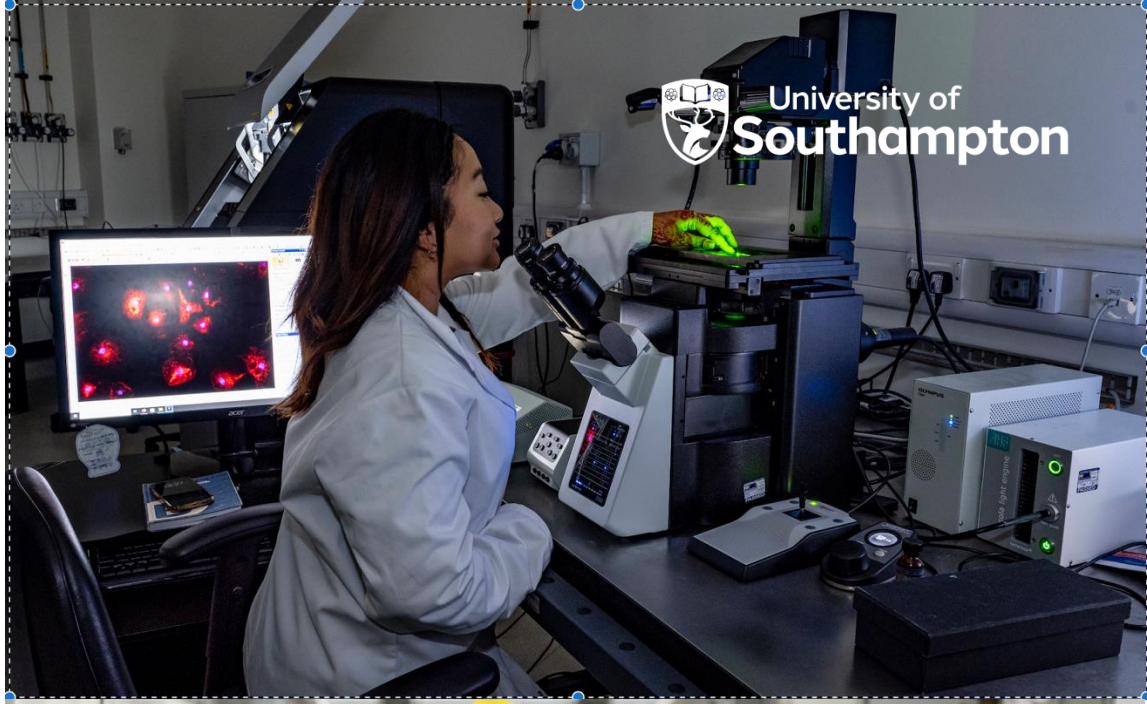
- Higher entry requirement (AAA offer versus AAB for BSc)
- We will still recruit to BSc if you miss your Masters offer
- Opportunities to switch from BSc to Masters (and vice versa) during the course

Biochemistry
Biology
Biomedical Sciences
Pharmacology
Neuroscience
Zoology

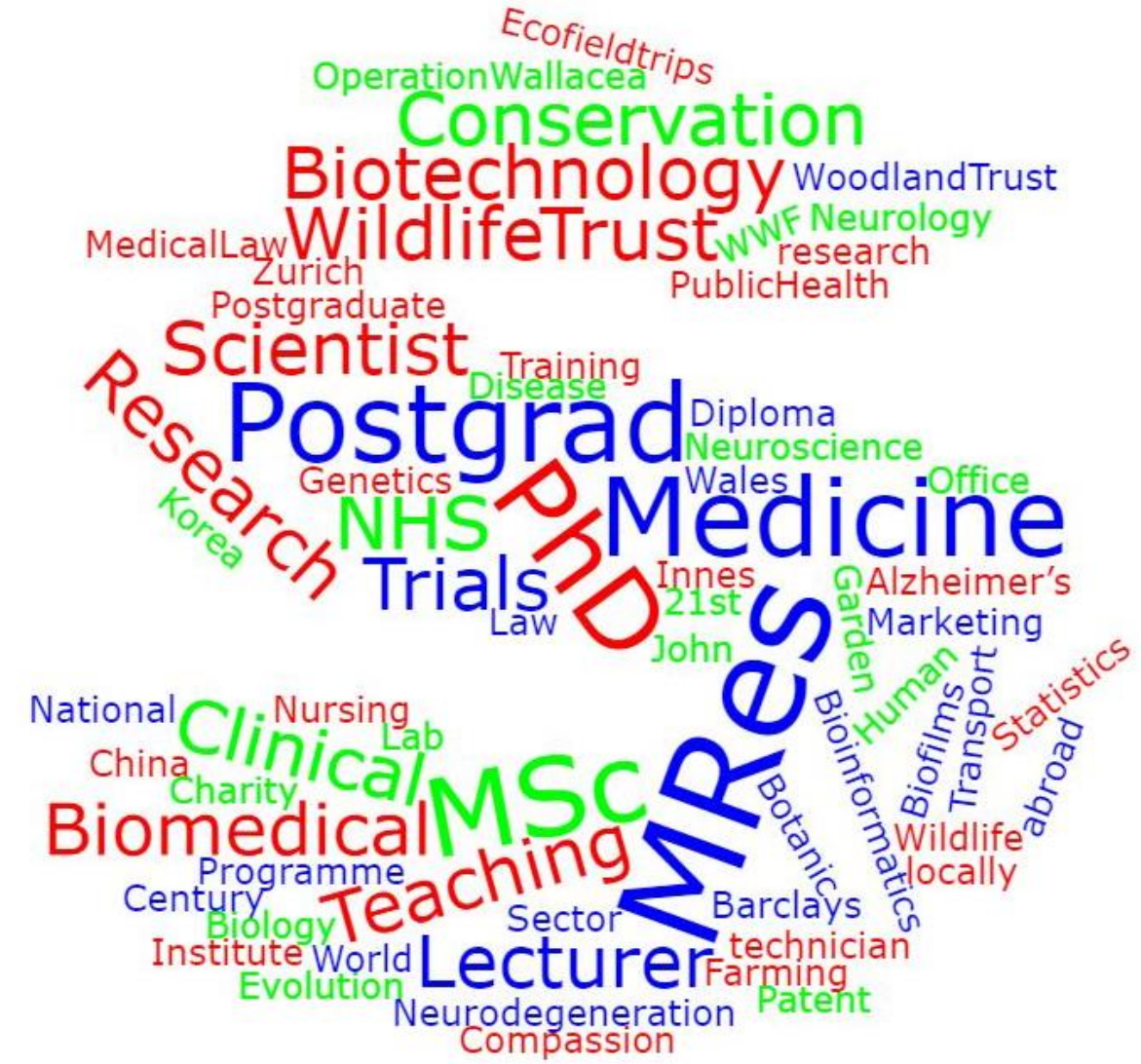
WHY **HERE**?

Flexibility is built into our degrees

- Common modules in first year
- Not committed to a specific degree from day one
- Wide range of modules available
- Select some modules outside Biological Sciences
- Range of third year research project options
- Ability to continue in Masters programmes



STUDENT **DESTINATIONS**



UCAS Applications

- We do not routinely interview
- Our offer is AAB for BSc or AAA for MSci
- We select based on your UCAS application
- Personal Statements:
  - why are you interested in the degree programme?
  - what experiences have informed your decision (work placements or voluntary work)?
  - about you as a person: involvement in school/community activities, hobbies accomplishments?
  - what you hope to get out of your university education – career aspirations, personal goals?