



THE UNIVERSITY  
*of* EDINBURGH

Postgraduate Opportunities

2021

# Biological Sciences

[www.ed.ac.uk/biology](http://www.ed.ac.uk/biology)

Open to  
the world



THE UNIVERSITY  
of EDINBURGH

# Top 50<sup>†</sup>

We're consistently ranked one of the top 50 universities in the world. We're 20<sup>th</sup> in the 2021 QS World University Rankings.

# 19<sup>TH</sup>

We're ranked 19<sup>th</sup> in the world's most international universities‡. Since 2010, we have taught students from 160 countries.

# 4<sup>TH</sup>

We're ranked fourth in the UK for research power, based on the 2014 Research Excellence Framework.†

# Top 100

We're ranked in the top 10 in the UK and in the top 100 in the world for the employability of our graduates.§

# 7<sup>TH</sup>

Edinburgh is ranked the seventh best student city in Europe and 15<sup>th</sup> in the world.\*

# 19

There are 19 Nobel Prize winners who are alumni of the University or who have been members of academic staff here.

# Online leader

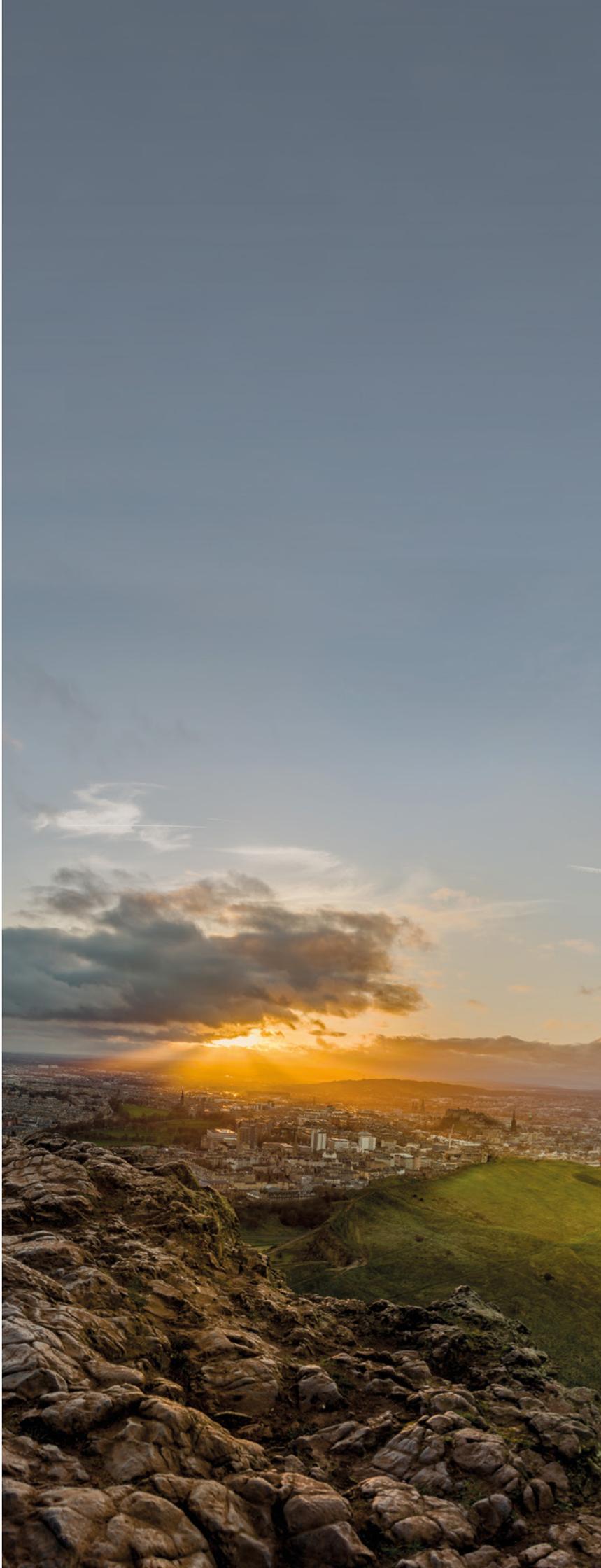
Edinburgh is one of the largest providers of online postgraduate programmes in the UK.

‡ *Times Higher Education*, The World's Most International Universities 2020

† *Times Higher Education*, Overall Ranking of Institutions

§ *Times Higher Education*, Global Employability University Ranking 2019

\* QS Best Student Cities 2019



## Open to the world

We're open to the world today so we can influence the world tomorrow. The University brings people with new ideas and perspectives together in a spirit of interdisciplinary innovation and collaboration. This has already shaped the world in so many ways, from the great thinkers of the Scottish Enlightenment, to the discovery of the Higgs boson particle and the development of a genetically engineered vaccine for Hepatitis B. Our 21 Schools, across three academic Colleges, embody our approach.







# About the School of Biological Sciences

Our School features a vibrant community of staff and students continuing a 400-year history of scientific exploration with innovative work that seeks to shape tomorrow's world.

We are constantly striving to shed light on the secrets of life through our wide-ranging research. More than half of our research in biological sciences (56 per cent) was rated 4\* world-leading in the Research Excellence Framework (REF) 2014 which places us in the UK's top three by research quality (Research Fortnight REF 2014) and confirms our position as one of the world's leading biological science research groups.

Through our membership of Scottish Universities Life Sciences Alliance, we work with colleagues in other institutions to maintain the country's world-class research base. Our commitment to pioneering science, supported by a healthy flow of grant funding, helps create an environment where world firsts are possible. For example, the first genetically engineered vaccine against hepatitis B was developed here at the School of Biological Sciences. By joining us you will experience a unique opportunity to examine life processes at the very highest level.

## Thriving community

Our School houses about 130 principal investigators, both academic teaching staff and independently funded senior research fellows, about 400 research assistants and technicians and more than 200 PhD students.

Some 90 administrative and technical staff support the School's academic activities.

## Research institutes

Our world-class research takes place in six research institutes:

- Institute of Cell Biology
- Institute of Evolutionary Biology
- Institute of Immunology and Infection
- Institute of Molecular Plant Sciences
- Institute for Regeneration & Repair (Centre for Regenerative Medicine)
- Institute of Quantitative Biology, Biochemistry and Biotechnology.

Many of our researchers also participate in one or more of our numerous cross-disciplinary research centres.

## Teaching

Postgraduate teaching takes every advantage of our School's expertise to give you outstanding opportunities to study within your chosen field, from programmes taught at the world-famous Royal Botanic Garden Edinburgh to those that develop biofuels and new medicines. Our students can be found discovering how to develop new products for human and animal health, or applying the latest engineering principles to the exploration of biological networks.

## Effective outcomes

The School of Biological Sciences continues to make its mark on the future. We offer entrepreneurial opportunities supported by Edinburgh Innovations, the University's commercialisation office, with a dedicated business development team embedded in the School. Across the University, Edinburgh Innovations has helped create more than 400 companies during the last 50 years.

# Our community

The School forms one of the largest academic groupings of biological scientists in the UK. Whether you are following a taught postgraduate programme or embarking on research, you will be welcomed into a supportive and enthusiastic community of students and staff.

## The MSc experience

As an MSc student, there is always something to keep you motivated and inspired – from the University's Festival of Creative Learning to the Edinburgh International Science Festival. Each of our MSc degrees has a dedicated administrator who is there to help you with any queries.

## Support

All postgraduate students are members of our Graduate School, which enjoys an active academic and social calendar. The Graduate School offers you every opportunity to join in – from peer support groups and journal clubs to BioDocSoc, our society run by and for research students and staff.

## Inspiring environment

Our environment of shared knowledge and expertise has led to groundbreaking and globally recognised research achievements. Our research institutes provide a forum for development of ideas, collaboration and dissemination of results, along with an environment for training and mentoring research students and early career researchers. BioSkills, a database developed by our own researchers, makes it easy to identify fellow researchers in Edinburgh who can share their skills and expertise with you.

## Links and partnerships

We participate in a variety of interdisciplinary research centres reflecting the importance we place on a collaborative approach to research. Through these connections, you'll come into contact with researchers from varied academic backgrounds and gain insights into new approaches and techniques. We are linked with:

- Centre for Infection, Immunity & Evolution
- Centre for Regenerative Medicine
- Centre for Translational & Chemical Biology
- Edinburgh Infectious Diseases
- SynthSys – Centre for Synthetic and Systems Biology
- UK Centre for Mammalian Synthetic Biology
- Wellcome Centre for Cell Biology.

Many of our research projects also involve collaborations with Scotland's Rural College (SRUC), the Royal Botanic Garden Edinburgh and many other academic and commercial organisations.

The School is lead partner in the EASTBIO Doctoral Training Partnership, which has provided PhD training for students at the Universities of Aberdeen, Dundee, Edinburgh and St Andrews since 2012. It recently expanded to include the University of Stirling, SRUC, the James Hutton Institute, the Moredun Research Institute, the Industrial Biotechnology Innovation Centre, the Scottish Universities Life Sciences Alliance (SULSA) and the Cool Farm Alliance. Renewed funding (see page 6) will provide 32 PhD studentships per year beginning in 2020. Additional funding will be drawn from across the partnership and industry to create a cohort of around 60 students per annum.

More information:  
[www.eastscotbiodtp.ac.uk](http://www.eastscotbiodtp.ac.uk)

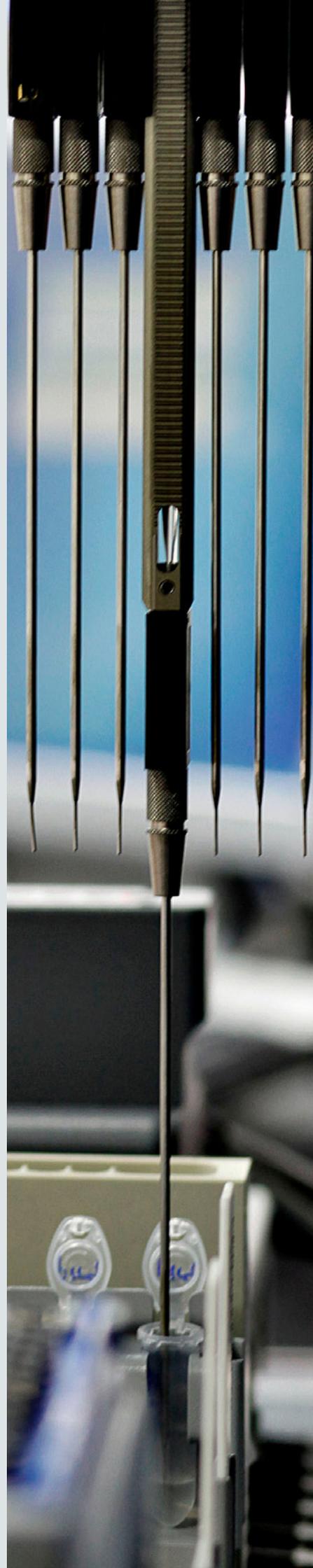
## The Innovation Forum

Edinburgh hosts a local branch of the Innovation Forum, a global network of researchers and entrepreneurs active at the universities of Cambridge, Oxford, London, Edinburgh, Copenhagen, Lausanne, Barcelona, Hong Kong and Tokyo. This is a student-led initiative seeking to promote innovation by building bridges between academia, industry and government, and linking innovative minds across disciplines.

More information:  
[www.inno-forum.org](http://www.inno-forum.org)



Our research students produce regular podcasts about School news and events:  
[www.ed.ac.uk/biology/biopod](http://www.ed.ac.uk/biology/biopod)



# Employability and graduate attributes

We offer a research-rich environment in which to develop and gain skills that will benefit your personal and professional development whichever direction your career takes. The University provides a range of services and opportunities to help you make the most of your time here and we offer professional internship schemes to MSc and PhD students.

We have outstanding links with leading research labs throughout the world, facilitating career development for those wishing to pursue a research career.

## Professional internships

We offer EASTBIO PhD students the opportunity to pursue a professional internship, supported by a Postgraduate Placements Coordinator. All EASTBIO students spend three months of their PhD programme pursuing a non-academic internship. This is designed to help you develop a broad range of professional skills and explore potential career options.

## Science communication

The School is very active in science communication and public engagement, with many opportunities to gain valuable skills and experience. You might find yourself sharing your research at the annual Edinburgh Science Festival or Midlothian Science Festival, helping school pupils and teachers across Scotland with modern lab techniques and topics, or using science to connect with and support local deprived communities. You can also write for the student-run EUSci magazine, or help produce the student-run BioPOD (see page 8), a podcast covering stories from across the School.

## Institute for Academic Development

All postgraduate students can benefit from our Institute for Academic Development (IAD), which provides information, events and courses to develop the skills you will need throughout your studies and in the future. IAD events also offer the perfect opportunity to meet and network with other postgraduates from across the University.

Further information is available online:  
[www.ed.ac.uk/iad/postgraduates](http://www.ed.ac.uk/iad/postgraduates)

For taught postgraduates, the IAD provides a popular study-related and transferable skills support programme. It is designed to help you settle into postgraduate life, succeed during your studies and move confidently to the next stage of your career. It offers on-campus and online workshops and one-to-one study skills consultations, as well

as online advice and learning resources in the Study Hub ([www.ed.ac.uk/iad/studyhub](http://www.ed.ac.uk/iad/studyhub)). The programme and learning resources cover key study skills tailored to different academic stages, including prearrival sessions; getting started with your studies; critical reading, writing and thinking; managing your exams; and planning for and writing up your dissertation.

IAD also provides a comprehensive programme of transferable-skills training, resources and support for researchers completing a doctorate. The programme consists of workshops that are designed to help you successfully prepare for the various milestones of your PhD, from getting started with your research to writing up and preparing for the viva, as well as developing personal and professional skills that can be transferred to your future employment. Workshops cover topics such as writing skills, reference management tools, statistics, preparing for conferences, delivering presentations, time and project management, and personal development. IAD also offers online resources and planning tools to help get your research started, as well as support for tutoring and demonstrating, and public engagement and communication.

## Careers Service

Our Careers Service plays an essential part in your wider student experience at the University, offering a range of tailored careers and personal development guidance and support. We support you to recognise the wealth of possibilities ahead, while at university and after graduation, helping you explore new avenues, tap into your talents and build your employability with confidence and enthusiasm.

From exploring career options to making decisions, from CV writing to interview practice, from Employ.ed internships to graduate posts, and from careers fairs to postgraduate alumni events, we will help you prepare for the future.

We sustain and continually develop links with employers from all industries and employment sectors, from the world's top recruiters to small enterprises based here in Edinburgh. Our employer team provides a programme of opportunities for you to meet employers on campus and virtually, and advertises a wide range of part-time and graduate jobs.

More information:  
[www.ed.ac.uk/careers/postgrad](http://www.ed.ac.uk/careers/postgrad)

## Platform One

We provide opportunities for students to draw on the knowledge and experience of our worldwide alumni network through lectures, workshops and panel discussions, and online via Platform One. This supportive environment allows students, alumni, staff and volunteers to gather to share their knowledge and experiences and discuss ideas, plans and possibilities.

More information:  
[www.ed.ac.uk/platform-one](http://www.ed.ac.uk/platform-one)

## Open to new ideas

If you consider yourself something of an entrepreneur, you'll be interested to know that Edinburgh is an entrepreneurial city, home to two of the UK's \$1 billion-valued unicorn companies. We boast one of the most entrepreneurial student bodies in the UK and have helped students launch nearly 100 startups in the last two years. One in five of those startups was a social enterprise. Edinburgh Innovations, the University's commercialisation service, offers free support to student entrepreneurs including one-to-one business advice and a range of workshops, bootcamps, competitions and networking events. Successful recent clients include Orfeas Boteas, creator of the Dehumaniser sound effects software used by Hollywood movies and blockbuster video games; Douglas Martin, whose company MiAlgae aims to revolutionise the global aquaculture and pet food industries; and Aayush Goyal and Karis Gill, whose gift box enterprise Social Stories Club brings ethical products to a wider market: [www.ed.ac.uk/edinburgh-innovations/for-students](http://www.ed.ac.uk/edinburgh-innovations/for-students)

# Open to the world

The University of Edinburgh has been influencing the world since 1583. Our Schools have a long history of making a difference but it isn't one we take for granted. To this day, we strive to deliver excellence and help address tomorrow's greatest challenges.

Here's a snapshot of what your School's community has been up to recently.

## Internship scheme extended to 2025

A professional placements scheme for biological sciences students has secured funding to ensure it can continue to run until 2025.

The East of Scotland Doctoral Training Partnership, known as EASTBIO DTP, allows students to undertake a three-month professional internship as part of their UKRI Biotechnology and Biological Sciences Research Council (BBSRC) -funded degree.

The internships help students understand the context of their research and expose them to a wider range of career opportunities open to them after graduation.

EASTBIO DTP professional internships are designed around four key principles:

- They are student-led, building students' capacity to identify their own career aspirations.
- Student and supervisor jointly decide when the internship fits best into their PhD.
- Students develop their own internship ideas, apply to an established internship programme or choose an EASTBIO pre-negotiated internship.
- A dedicated placement coordinator supports students to communicate professionally with organisations, engage proactively to obtain approval prior to starting their internship and submit an online report to the BBSRC.

The University of Edinburgh has been a part of EASTBIO DTP since it was founded in 2012. To find out more about the professional internship opportunities, see: [www.eastscotbiotdp.ac.uk](http://www.eastscotbiotdp.ac.uk)





# Combating pollution

**Organic waste matter known as biochar could be instrumental in combating pollution, a student dissertation project has shown.**

Graduate student Zhansaya Assil collaborated with Dr Andrew Free, programme director for her MSc Biotechnology degree, for her dissertation studying the microbial biodegradation of oil in soils supplemented with biochar.

Zhansaya's work demonstrated that biochar was able to adsorb diesel oil and enrich microorganisms capable of degrading the oil in situ. This discovery has potential benefits for dealing with oil contamination in the field.

Zhansaya joined the School of Biological Sciences from the Kazakh National University in Almaty, Kazakhstan, in 2018. Her work here was recognised with second prize at a conference of young scientists organised by the Institute of Plant Biology and Biotechnology in Almaty upon her return home.

Biochar, a carbon product made from waste organic matter, has been a recent focus for research at the University of Edinburgh.

# Royal Society trio named

**Three School of Biological Sciences academics have been made fellows of the Royal Society and Royal Society of Edinburgh in the 2020 cohort.**

Professor Francisca Mutapi, Professor of Global Health, Infection and Immunity, and Professor Alexandra Rowe, Professor of Molecular Medicine, were both named Royal Society of Edinburgh (RSE) Fellows. RSE Fellows are leading thinkers and experts from Scotland and around the world, whose work has a significant impact on our nation.

Professor Keith Matthews, Professor of Parasite Biology, has been elected a Fellow of the Royal Society in recognition of his outstanding contribution to science. The Fellowship is made up of eminent scientists, engineers and technologists from the UK and the Commonwealth.

Professor Mutapi's work on schistosomiasis, an infection caused by a parasitic worm that lives in fresh water in the tropics, has had an enormous impact on policy and practice, in particular for the benefit of millions of children in Zimbabwe. She is also Deputy Director of the Tackling Infections to Benefit Africa Partnership, a multidisciplinary research programme seeking new solutions to neglected tropical diseases and emerging epidemics in Africa.

Professor Rowe studies why malaria disease severity differs between individuals. Half a million African children die from malaria every year but many more suffer milder, non-life threatening forms of the disease. Professor Rowe's work has identified a number of contributory factors and continues to explore whether variation in disease severity is due to the properties of the malaria parasites, differences in their human hosts, or a combination of the two.

Professor Matthews' research on the lifecycle of trypanosome parasites, which are spread by the Tsetse fly and are responsible for epidemics of sleeping sickness, has led to significant advances in understanding the disease severity and spread in sub-Saharan Africa.

**"For me, as I suspect is the case with most of the Fellows, to be elected to the RSE is not the end of a process, it is a beginning. This is an opportunity for us to build on the RSE's influential platform for bettering the current and future human condition."**

**Francisca Mutapi**  
**Professor of Global Health, Infection and Immunity**





## Students relaunch community podcast

Biological Sciences PhD students have revived and relaunched an official podcast for the School.

BioPOD, which is produced and presented by enthusiastic student volunteers, brings together a selection of the latest biology news and fascinating interviews with scientists.

The podcast team, led by producer Sam Haynes, a PhD researcher and bioinformatician, investigates projects and people in every field of biology from around the University of Edinburgh, in addition to presenting think-pieces on topics related to the interviews.

BioPOD relaunched in 2019 after a short hiatus. The all new team hope to build on the legacy of a hugely popular podcast series which was first released in 2007.

Six episodes of BioPOD are available for download now on the Apple, Google and Spotify podcast platforms and at:  
[www.ed.ac.uk/biology/biopod](http://www.ed.ac.uk/biology/biopod)

# 2020 Hooke Medal for self-renewing cell discovery

Professor Ian Chambers, Group Leader and Professor of Pluripotent Stem Cell Biology at the MRC Centre for Regenerative Medicine, has won the 2020 Hooke Medal for his contribution to UK cell biology.

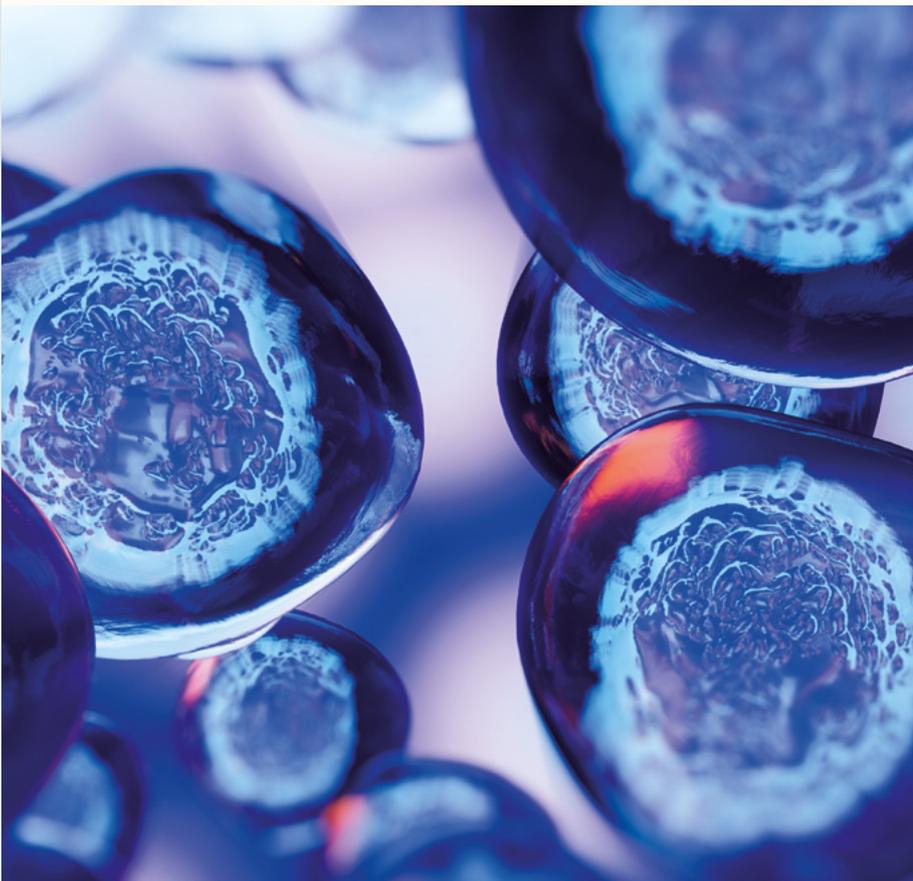
Professor Chambers' research studies how transcription factors control pluripotent stem cell identity and how this changes as cells differentiate, particularly into the germline – the embryonic precursors to egg and sperm cells.

He co-discovered a transcription factor, named NANOG after Tir nan Og, the Celtic Land-of-the-Ever-Young, that can allow embryonic stem cells to self-renew.

The Hooke Medal is awarded annually by the British Society for Cell Biology to recognise an emerging leader in the field. The medal is named after Robert Hooke, the eminent 17th century natural philosopher and author.

“I am very honoured to be awarded the Hooke Medal in recognition of our work on the control of pluripotent cell function by transcription factors. Experimental science is a team effort and I would like to thank all my colleagues, especially the many members of my lab past and present, who made this award possible.”

**Professor Ian Chambers**  
MRC Centre for Regenerative Medicine



# Brain prize awarded for Rett Syndrome research

Professor Sir Adrian Bird has been announced as a joint winner of the world's most prestigious neuroscience prize.

Sir Adrian, Buchanan Professor of Genetics based at the Wellcome Centre for Cell Biology and member of the Simons Initiative for the Developing Brain, shares the 2020 Brain Prize with Professor Huda Zoghbi for their outstanding contribution to Rett Syndrome research.

Rett Syndrome is a rare neurological disorder that results in severe mental and physical disability in children. Most cases of Rett Syndrome are caused by a mutation in a gene known as MECP2. Sir Adrian's work demonstrated it was possible to reverse Rett Syndrome in laboratory mice, eliminating symptoms of the disease, even at advanced stages. This suggests Rett Syndrome in humans will be curable and has stimulated an international search for therapies.

Since 2010, the Brain Prize has been awarded annually by the Lundbeck Foundation, Denmark's largest private funder of neuroscience research, to scientists who have a groundbreaking impact on brain research. Winners are awarded DKK 10 million – approximately €1 million.

Sir Adrian has spent most of his academic career with the School of Biological Sciences, receiving his PhD in 1970 then returning to work at the MRC Mammalian Genome Unit in 1975. He became Buchanan Professor of Genetics in 1990.

“I am truly honoured to be awarded the Brain Prize. I have been fortunate to work with outstanding people over the years, and this recognition from the Lundbeck Foundation is also a credit to them. Like so many discoveries that have turned out to be biomedically important, the work we began in the 1990s started out as blue-skies research with no obvious practical benefit. I am grateful for all the generous support I've received from the University, the Wellcome Trust and the Rett Syndrome Research Trust since those early days.”

**Professor Sir Adrian Bird**  
Buchanan Professor of Genetics



# Our teaching

Our taught masters degrees are designed to deepen knowledge in a subject you will typically have studied at undergraduate level, though they can also offer a new direction in your academic career.

## MSc and Diploma

Our taught Master of Science (MSc) degrees last 12 months, consisting of two semesters of taught courses followed by an individual supervised research project. An alternative option is the Postgraduate Diploma (PgDip), which lasts nine months from September to May, consisting of the taught courses only.

At the time of printing, our planned taught degrees for 2021 are:

- **Animal Breeding & Genetics** (MSc/PgDip)
- **Biochemistry** (MSc/PgDip)
- **Biodiversity & Taxonomy of Plants** (MSc/PgDip)
- **Bioinformatics** (MSc/PgDip)
- **Biotechnology** (MSc/PgDip)
- **Drug Discovery & Translational Biology** (MSc/PgDip)
- **Evolutionary Genetics** (MSc/PgDip)
- **Human Complex Trait Genetics** (MSc/PgDip)
- **Quantitative Genetics & Genome Analysis** (MSc/PgDip)
- **Synthetic Biology & Biotechnology** (MSc/PgDip)
- **Systems & Synthetic Biology** (MSc/PgDip)

Please check our online degree finder for the most up-to-date information available on our taught postgraduate opportunities and to make an application: [www.ed.ac.uk/postgraduate/degrees](http://www.ed.ac.uk/postgraduate/degrees)

## See also...

You may also be interested in taught masters degrees offered elsewhere in the University, particularly by the College of Medicine & Veterinary Medicine or the Schools of Chemistry, Informatics or Engineering.

[www.ed.ac.uk/studying/prospectus-request](http://www.ed.ac.uk/studying/prospectus-request)



# Facilities and resources

Whatever tools you need to conduct your research, you'll find the latest at the School of Biological Sciences.

Our Edinburgh Genomics sequencing service plays host to the National Environment Research Council National Sequencing Facility and Medical Research Council Hub Facility.

Advanced microscopy and flow cytometry are two of our major strengths. Our microscopy facilities house state-of-the-art widefield and confocal fluorescence, and transmission and scanning electron microscopes. Our flow cytometry facilities offer cutting-edge analytical and sorting capabilities.

## Extensively equipped

We have protein production and biophysical characterisation facilities, including surface plasmon resonance, ITC and spectroscopic equipment. We host more than 1,000m<sup>2</sup> of controlled environment growth space and glasshouse space, and have computing resources for evolutionary biology, including four dedicated computer clusters for phyloinformatics, comparative genomics, population genetics and quantitative trait locus genetics.

## Excellent facilities

We are based almost wholly at the University's King's Buildings campus, about 15 minutes by bus from the city centre. You can take advantage of the Noreen and Kenneth Murray Library, named after the pioneers of the first genetically engineered hepatitis B vaccine, as well as the Learning and Teaching Cluster and the social and sports facilities at King's Buildings House. All postgraduate research students are given their own desk space in shared student offices.

“From the beginning of my PhD, I was exposed to the most advanced analytical thinking and to the most modern technology in the field. I had to utilise the maximum intellectual capacity to make the most out of simpler, easy-to-learn methods of investigation, and I acquired a very complex mechanism of thinking in a relatively short time.”

Simona Nistor-Grahl  
PhD Cell & Molecular Biology



# Research at the School of Biological Sciences

We're one of the largest and most highly rated centres of our kind in the UK and one of the top 25 worldwide for biological sciences (QS World University Rankings by Subject 2020).

With 91 per cent of our biological sciences research rated either 4\* world leading or 3\* internationally excellent on the overall quality profile of the Research Excellence Framework (REF) 2014, and with a successful record of research grant applications, we can offer an environment that boasts cutting-edge equipment and facilities to encourage research excellence and innovation. You'll be part of an active Graduate School and will benefit from the support of around 130 principal investigators, many of whom hold independent personal fellowships funded by prestigious bodies. Through our innovative skills database, you'll have access to a broad range of expertise within our comprehensive research areas, the output of which was ranked third in the UK for research quality (Research Fortnight REF 2014).

## Research routes

Our six discipline-based research institutes cover biology from molecular structure to evolutionary and population biology.

## PhD

As a PhD candidate you pursue a research project under continuous guidance, resulting in a thesis that makes an original contribution to the sector. You will gain specialist background knowledge for your intended research and develop the skills to research in that field. You will be required to submit your thesis within four years.

## MPhil

The Master of Philosophy (MPhil) resembles a PhD but generally takes two years and does not carry the same requirement for original contribution to knowledge. You'll pursue your individual research project under supervision and submit a thesis.

## MSc by Research

An MSc by Research is based on a research project tailored to your interests. It lasts one year full time or two years part time. The project can be a shorter alternative to an MPhil or PhD, or a precursor to either – including the option of an MSc project expanding into MPhil or doctorate work as it evolves.

## High rate of career success

We find the overwhelming majority of our students have an academic career in mind when applying for research programmes. Our latest figures show that of those graduates in employment, 78 per cent enter an academic research or teaching career on graduation, and are now establishing themselves in universities and other research institutions worldwide. It's a significant achievement, one that demonstrates the quality of both our research and our standing within the international academic community. We also fully support our students who plan to develop careers outside academia.

## Research opportunities

At the time of printing, our planned postgraduate research opportunities for 2021 are:

- Cell Biology (PhD/MPhil/MScR)
- Evolutionary Biology (PhD/MPhil/MScR)
- Immunology & Infection Research (PhD/MPhil/MScR)
- Molecular Plant Sciences (PhD/MPhil/MScR)
- Quantitative Biology, Biochemistry & Biotechnology (PhD/MPhil/MScR)
- Stem Cell Research (PhD/MPhil/MScR)

Please check our online degree finder for the most up-to-date information available on our postgraduate research opportunities and to make an application.

## Research degree index:

[www.ed.ac.uk/studying/postgraduate/degrees/research](http://www.ed.ac.uk/studying/postgraduate/degrees/research)

## PhD research projects:

[www.ed.ac.uk/studying/phd-research-projects](http://www.ed.ac.uk/studying/phd-research-projects)

## Advice on finding a research supervisor:

[www.ed.ac.uk/studying/postgraduate/research](http://www.ed.ac.uk/studying/postgraduate/research)

“I completed a PhD in Structural Biology at the University of Edinburgh. I originally joined the Walkinshaw group as a bioinformatics PhD candidate but through Professor Walkinshaw's supportive and motivational mentorship took up the exciting challenge of X-ray crystallography, which I continued to investigate through a postdoctoral fellowship at the University of British Columbia, Vancouver, Canada.”

Liam Worrall  
PhD Structural Biology

## See also...

Much of our research is interdisciplinary and collaborative. You may find your preferred research area in the prospectus of the College of Medicine & Veterinary Medicine, or those of the Schools of Chemistry, Informatics or Engineering.  
[www.ed.ac.uk/studying/prospectus-request](http://www.ed.ac.uk/studying/prospectus-request)



## Case study

### Edinburgh's research with impact

## New hope for Rett syndrome sufferers

Rett syndrome is a severe autistic-spectrum disorder with delayed onset that affects one in 10,000 girls, which includes around 16,000 in the US, and an estimated 2,400 here in the UK. This regressive disease causes loss of speech and hand movement, coupled with autistic behaviour, an undersized brain (microencephaly) and growth retardation. A cure or therapy was thought to be most unlikely. However, leading geneticist Professor Sir Adrian Bird from the University's School of Biological Sciences may have found the answer to this devastating disease.

#### Project background

The syndrome was previously believed to be a developmental or neurodegenerative disease because of its early appearance and the gradual deterioration of those affected. However, leading-edge research led by Professor Bird has presented the very real prospect of a future cure. By developing a genetic mouse model for Rett syndrome that mimics the genetic mutation that causes its symptoms, Professor Bird opened up a new avenue of research. In 2007, Dr Jacky Guy and other scientists in Professor Bird's team introduced a modified MeCP2 gene into Rett model mice, which allowed controlled expression of normal MeCP2 protein – a lack of which had been determined to be the cause of Rett syndrome.

Mutant female mice carrying this modified gene exhibited the characteristics of Rett syndrome until normal MeCP2 expression was activated, after which they rapidly regained normal behaviour. This striking result indicated that the developmental or degenerative changes seen in Rett patients are reversible, and overturned previous understanding of the disease.

#### Project results

These potentially life-changing findings by the research team at the University have inspired worldwide awareness campaigns, a documentary, and fundraising programmes aimed at supporting further research. They underpin the rationale of multiple clinical trials now under way in both Europe and the US to test both symptom-relieving drugs and gene therapy to combat the underlying cause.

**Leading-edge research led by Professor Bird has presented the very real prospect of a future cure.**

See more online: [www.ed.ac.uk/research/impact](http://www.ed.ac.uk/research/impact)

# Funding

A large number of scholarships, loans and other funding schemes are available for your postgraduate studies. It is only possible to show a small selection in print. To see the full range, please visit: [www.ed.ac.uk/student-funding/postgraduate](http://www.ed.ac.uk/student-funding/postgraduate)

Awards are offered by the School of Biological Sciences, the University of Edinburgh, the Scottish, UK and international governments and many funding bodies.

Here we list a selection of potential sources of financial support for postgraduate students applying to the School of Biological Sciences. This list was correct at the time of printing but please check the full and up-to-date range online (see above).

## University of Edinburgh Alumni Scholarships

We offer a 10 per cent scholarship towards postgraduate fees to all alumni who graduated from the University as an undergraduate, and to all students who spent at least one semester studying at the University on a visiting programme: [www.ed.ac.uk/student-funding/alumni-scholarships](http://www.ed.ac.uk/student-funding/alumni-scholarships)

### Key

- Taught masters degrees
- Masters by Research degrees
- Research degrees

## Scholarships at the University of Edinburgh

### • China Scholarships Council/University of Edinburgh Scholarships (China) ●

A number of scholarships for PhD study to candidates who are citizens and residents of China. Participating schools to be confirmed: [www.ed.ac.uk/student-funding/china-council](http://www.ed.ac.uk/student-funding/china-council)

### • Principal's Career Development PhD Scholarships ●

These prestigious scholarships give access to any applicant from around the world to undertake discipline training and additional skills development. Students are encouraged to engage with entrepreneurial training, teaching, outreach and industrial engagement. Each award covers the tuition fee and full stipend: [www.ed.ac.uk/student-funding/development](http://www.ed.ac.uk/student-funding/development)

### • School of Biological Sciences Research Scholarships ●

Within the School of Biological Sciences, a number of highly competitive research scholarships are available each year to new postgraduate research students, including funding from BBSRC, EPSRC, NERC, MRC, Wellcome Trust and our School International Scholarships: [www.ed.ac.uk/biology/prospective-students/postgraduate-research](http://www.ed.ac.uk/biology/prospective-students/postgraduate-research)

### • School of Biological Sciences Taught Postgraduate Bursaries ●

The School of Biological Sciences offers a limited number of awards to overseas students joining taught masters programmes: [www.ed.ac.uk/student-funding/biological-bursaries](http://www.ed.ac.uk/student-funding/biological-bursaries)

## Research council awards

Research councils offer awards to eligible masters and PhD students in most of the Schools within the University of Edinburgh. All studentship applications from the research councils must be made through the University, through your School or College office. Please check the eligibility criteria for each opportunity online: [www.ed.ac.uk/student-funding/research-councils](http://www.ed.ac.uk/student-funding/research-councils)

## Loans available for study at the University of Edinburgh

The University of Edinburgh is a participating institution in the following loans programmes, meaning we certify your student status and can help with the application process.

### • The Canada Student Loans Program ●●●

The University is eligible to certify Canadian student loan applications: [www.ed.ac.uk/student-funding/canadian-loans](http://www.ed.ac.uk/student-funding/canadian-loans)

### • Postgraduate Doctoral Loans England ●

Student Finance England offers postgraduate loans for doctoral study, payable to eligible students and divided equally across each year of the doctoral programme: [www.gov.uk/doctoral-loan](http://www.gov.uk/doctoral-loan)

### • Postgraduate Doctoral Loans Wales ●

Student Finance Wales offers loans for postgraduate doctoral study, payable to eligible students, divided equally across each year of the doctoral programme: [www.studentfinancewales.co.uk/postgraduate-students/postgraduate-doctoral-loan](http://www.studentfinancewales.co.uk/postgraduate-students/postgraduate-doctoral-loan)

### • Postgraduate Loans (PGL) England ●●

Student Finance England offers postgraduate loans for taught and research masters programmes, payable to eligible students: [www.gov.uk/postgraduate-loan](http://www.gov.uk/postgraduate-loan)

### • Postgraduate Loans (PGL) Northern Ireland ●●

Student Finance Northern Ireland offers eligible students a tuition fee loan for taught and research programmes, at certificate, diploma, and masters level, which will be paid directly to the University: [www.studentfinancenir.co.uk](http://www.studentfinancenir.co.uk)

### • Postgraduate Loans (SAAS) ●●

The Student Awards Agency Scotland offers eligible students tuition fee loans for taught and research programmes at diploma and masters level, which will be paid directly to the University. Eligible students can also apply for a non income-assessed living cost loan: [www.saas.gov.uk](http://www.saas.gov.uk)

- **Postgraduate Master's Finance Wales** ●●

Student Finance Wales offers eligible students postgraduate finance for taught and research masters programmes:  
[www.studentfinancewales.co.uk](http://www.studentfinancewales.co.uk)

- **US Student Loans** ●●●

The University is eligible to certify loan applications for US loan students. Full details on eligibility and how to apply can be found online: [www.ed.ac.uk/student-funding/us-loans](http://www.ed.ac.uk/student-funding/us-loans)

### Other sources of funding

The following are examples of the many scholarships and support schemes available to students from particular countries who meet certain eligibility criteria.

- **Chevening Scholarships** ●●

A number of partial and full funding scholarships are available to one-year masters students: [www.chevening.org](http://www.chevening.org)

- **Commonwealth Scholarships** ●●●

Scholarships available to students who are resident in any Commonwealth country, other than the UK:  
[www.dfid.gov.uk/cscuk](http://www.dfid.gov.uk/cscuk)

- **Marshall Scholarships (USA)** ●●●

Scholarships available to outstanding US students wishing to study at any UK university for at least two years:  
[www.marshallscholarship.org](http://www.marshallscholarship.org)





# What's next?

## Contact us

For more information about taught MSc programmes, please contact:

### Claire Black

Biology Teaching Organisation  
2105, James Clerk Maxwell Building  
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Tel +44 (0)131 650 8637  
Email [pgtbiol@ed.ac.uk](mailto:pgtbiol@ed.ac.uk)  
[www.ed.ac.uk/biology/taught-masters](http://www.ed.ac.uk/biology/taught-masters)

For more information about the application and admissions process for taught MSc programmes, contact:

College of Science & Engineering Recruitment and Admissions Team  
Tel: +44 (0)131 650 5737  
[www.ed.ac.uk/science-engineering/contact/ug-pgt-enquiries](http://www.ed.ac.uk/science-engineering/contact/ug-pgt-enquiries)

For more information about our postgraduate research programmes, please contact:

### Helena Sim

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[www.ed.ac.uk/biology](http://www.ed.ac.uk/biology)

To discuss your PhD proposal, you should identify potential supervisors at:  
[www.ed.ac.uk/biology/people](http://www.ed.ac.uk/biology/people)

## Find out more

We offer many opportunities for you find out more about the University, including Online Information Sessions to access from the comfort of your own home and Open Days you can attend online or, when possible, in person. Find out what event we're hosting next: [www.ed.ac.uk/visit/open-days](http://www.ed.ac.uk/visit/open-days)

The School of Biological Sciences welcomes visitors when possible, for a tour of the campus or a meeting with your potential Programme Director. If you are unable to visit, we can arrange a video call.

## Virtual Visit

Can't visit Edinburgh in person? Our Virtual Visit allows you to virtually explore the University and the city. View a range of videos, 360° photos and image galleries to find out what it is like to live and study here: [www.virtual-visit.ed.ac.uk](http://www.virtual-visit.ed.ac.uk)

## Chat online

Wherever you are in the world, we offer you opportunities to get in touch and speak directly to us about studying here.

We offer all postgraduate students online information sessions. To find out more and see when the next session will be: [www.ed.ac.uk/postgraduate/online-events](http://www.ed.ac.uk/postgraduate/online-events)

## Our visits to you

If you are unable to visit the University, we attend events worldwide whenever possible during the year. Find out about your next opportunity to speak to us in person: [www.ed.ac.uk/postgraduate/meet-us](http://www.ed.ac.uk/postgraduate/meet-us)



We know these are uncertain times but at the University of Edinburgh your safety is our priority. We hope to welcome you on campus and are committed to ensuring you're taught as safely as possible during the pandemic. To find out about the steps we're taking, in line with Scottish Government guidance, visit: [www.ed.ac.uk/news/covid-19](http://www.ed.ac.uk/news/covid-19)

**Published by:**

Communications and Marketing, The University of Edinburgh

**Designed by:**

Parkhouse

**Photography by:**

Paul Dodds  
Shutterstock  
Getty Images

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The UK formally left the European Union (EU) on 31st January 2020. UK and Scottish Governments have confirmed that most non-UK EU students commencing study in 2021/22 will no longer be treated as 'home' students in relation to fee status or access to funding. Final fee regulations are not yet available but are expected to clarify fee status for those with settled status and for Irish citizens (under the Common Travel Agreement). For the latest information for students and applicants from the EU, please visit our website: [www.ed.ac.uk/news/eu](http://www.ed.ac.uk/news/eu)

The University's standard terms and conditions will form an essential part of any contract between the University of Edinburgh and any student offered a place here. Our full terms and conditions are available online: [www.ed.ac.uk/student-recruitment/terms-conditions](http://www.ed.ac.uk/student-recruitment/terms-conditions)

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# Biological Sciences

“I was very excited to be able to attend one of the best universities in the world. The programme is intensive and the professors kept us busy. Sometimes I struggled but I was happy because I gained so much as a student here.”

**Stamatina Fragkogianni,**  
MSc Bioinformatics

Open to  
the world