Durham University

Earth Sciences

Top 35

Earth Sciences department in the world*

*As ranked by the QS World University 2011.

Postgraduate study opportunities 2012/13

World-class research degrees to PhD

95%
of our research is internationally recognised, with 70% classed as internationally excellent.

Earth Sciences

The Department of Earth Sciences is a research-led department which offers postgraduate research students state-of-the-art facilities in purpose built accommodation (the Arthur Holmes Building) located on the University's Science Site. The Department does not offer taught postgraduate degrees but focuses on postgraduate training through research.

ABOUT THE DEPARTMENT

We are a leading Earth Science department with researchers and teachers of the highest calibre. The Department participated in the 2008 Research Assessment Exercise (RAE). 95% of our research is internationally recognised, with 70% classed as being internationally excellent (3*) and 15% world-leading (4*).

The Department has approximately 60 full-time research students, co-located with academic and postdoctoral research staff within the Arthur Holmes Building. The majority of our research students are studying for a PhD, but we also offer Masters-level research degrees (MSc by Research and MPhil). The Department also participates in the University's prestigious Natural Sciences degree programme.

The Department contains a number of major research units including the Northern Centre for Isotopic and Elemental Tracing (NCIET); the Centre for Research in Earth Energy Systems (CeREES); the Kingsley Dunham Earth Imaging Laboratory; and a new Rock Deformation Laboratory. It also hosts the NERC UK Ocean-Bottom Instrumentation Facility (OBIF).

POSTGRADUATE RESEARCH DEGREES

The Department offers three levels of postgraduate research degrees.

PhD

3 years full-time/6 years part-time

A PhD leads to 'an original and significant contribution to knowledge' and includes a substantial body of work suitable for publication in peer-reviewed scientific journals.

MPhil

2 years full-time/4 years part-time

An MPhil should lead to 'a contribution to knowledge worthy of publication' in a peer-reviewed scientific journal.

MSc by Research

1 year full-time/2 years part-time

An MSc by Research will demonstrate an advanced level of knowledge in the chosen field of study. The MSc does not necessarily include matter worthy of publication, but the Department strongly encourages all of its research students to publish their work.

RESEARCH AREAS & RESEARCH ENVIRONMENT

The Department has expertise across the full range of Earth Science disciplines, including:

- Environmental geosciences and climate change
- Geochemistry, geochronology, volcanology and petrology
- Geodynamics and geophysics
- Geo-energy, petroleum geosciences, hydrogeology and carbon capture and storage
- Sedimentology, stratigraphy and basin analysis
- Tectonics and structural geology.

I came to Durham as an undergraduate and this course was advertised to me by a lecturer, who is now my supervisor, as they knew that I was interested in climate and environmental research. I attended a conference in May of this year and presented some of my initial research results there. This was an opportunity to gain feedback from academics in like fields, who are based at institutions all over the UK. Presenting was also a good confidence-booster and, as it is something I will have to do many times during my PhD, it was valuable practice.

I have enjoyed so many aspects of postgraduate life in Durham. I am beginning a PhD in October and I aim to secure a postdoctoral position which will allow me to go on to a career in academia.

Living in my college is very beneficial as it is easier to attend a variety of academic and social events, play in sports teams, and have access to college facilities. Durham is a small place, and this makes it very easy to feel at home here.

Alexander Baker, UK, MSc Earth Sciences.

All postgraduate students are supervised by at least two members of academic staff, who are recognised experts in your chosen field of research. Most postgraduate students are members of a thematic research group, with active links to other research institutions and external sponsors (for example the Durham-led Volcanic Margins Research Consortium – **www.durham.ac.uk/vmrc**).

Our postgraduate research students – together with our rapidly expanding community of postdoctoral researchers – are at the heart of the Department's research activities. Postgraduate students run the weekly 'Research Reactor', which offers the chance to discuss and develop research ideas in a relaxed environment. Postgraduate students also have their own Research Forum seminar series, which complements the weekly Departmental Seminars given by visiting experts.

RECENT THESIS TITLES

- "Modelling the growth rate and oxygen isotope composition of stalagmite calcite: influence of cave ventilation and isotopic fractionation processes through Earth's hydrosphere"
- "The thermal evolution of subduction zone lithosphere: Evidence from the chemical development of Mt Ruapehu and surrounding vents, New Zealand"
- "Mineralogical health hazard assessment of Sakurajima volcano, Japan"
- "Carbon Budgets of Managed Upland Peat"
- "Strain accumulation at the lateral tips of active normal faults: a combined LiDAR and field structural geology study of extensional deformation in the Apennines, Italy"
- "Axial Volcanism on the Mid-Atlantic Ridge"
- "Seismic interpretation of silica diagenetic fronts, Russian Far East".

POSTGRADUATE RESEARCH FACILITIES

Postgraduates are housed in a purpose built open-plan office, designed to encourage interaction and discussion. Postgraduate students have access to state-of-the-art research facilities, including:

- NCIET (Northern Centre for Isotope and Element Tracing) analytical geochemistry laboratories, comprising the stable isotope laboratory, ICP-OES, PIMMS, TIMS and ICP-MS facilities
- Environmental Geochemistry Laboratories, including ion and gas chromatographs, IR gas analysers, DOC analysis and field-based equipment
- OBIF (Ocean Bottom Instrumentation Facility), the national seabed geophysical equipment pool
- Seismic data processing, interpretation and visualisation facilities in the Earth Visualisation Laboratory
- Microscopy and textural analysis, including the faculty electron microscopy facility (SEM, TEM)
- Terrestrial laser scanner, hosted by the Centre for Terrestrial Laser Scanning (CeTLS)
- Micropalaeontology and sedimentology laboratories.

All postgraduates are invited to join the CeREES (Centre of Research into Earth Energy Systems) Geo-energy Scholarship Programme, which offers monthly lectures, workshops and fieldtrips led by visiting experts from the geo-energy sector. Students working on energy-related research projects may also apply to join the Durham Energy Institute's multidisciplinary Centre for Doctoral Training in Energy, which provides additional funding and training opportunities.

TYPICAL ENTRY REQUIREMENTS FOR RESEARCH DEGREES

It is our policy to consider each application on its merit and without discrimination. The minimum entry requirements are as follows:

An upper second class Honours degree (or equivalent) in a relevant subject (e.g. Geology, Geophysics, Earth Sciences, Chemistry, Physics, Mathematics, Environmental Sciences or related subjects);

OR a Masters degree in a relevant subject;

AND suitable references (normally two academic references or, where an applicant has been out of education for some time, one academic reference and one employer's reference).

Applicants whose first language is not English will need to demonstrate proficiency in written and spoken English. This is normally an IELTS score of 6.5 or above with no category less than 6.0. We may accept applicants with alternative English language qualifications or those who have successfully completed a recognised course at a UK university within the past five years and whose English reading, writing, speaking and listening skills are at least equivalent to IELTS 5.5.

In addition to meeting the minimum entry requirements, applicants will be judged on the following four criteria:

- Their suitability to undertake research in a relevant field, including, where appropriate, proficiency in the English language
- Their suitability to undertake a research project in the proposed field of study within the allotted time span
- The availability of a supervisory team which is qualified to supervise the applicant in the proposed research project
- The availability of resources to support the applicant's research project to a successful conclusion.

Supervisors may wish to call the applicant for either a face-to-face interview or an interview by telephone to support decision making.

FUNDING OPPORTUNITIES FOR POSTGRADUATE RESEARCH STUDENTS

In addition to University studentships (e.g. Durham Doctoral Studentships), the Department offers the following funding opportunities:

RESEARCH COUNCIL STUDENTSHIPS

The Department usually offers a number of NERC and NERC CASE studentships. These are awarded annually on the basis of competitive interviews. Interviews are held in early March. Studentships pay a tax-free stipend (currently around £13,590 pa), tuition fees and major research expenses. Full Research Council studentships are available to UK residents only.

CEREES GEO-ENERGY SCHOLARSHIP PROGRAMME
A number of industry-sponsored studentships are available through the CeREES (Centre for Research into Earth Energy Systems) Geo-energy Scholarship Programme. Scholarships are awarded on the basis of competitive interviews. CeREES scholarships pay a tax-free stipend at the nationally agreed rate, tuition fees and major research expenses. Opportunities on the CeREES Petroleum Geoscience PhD Scholarship Programme arise throughout the year and are open to UK and EU nationals.

The programme seeks motivated geoscience graduates (BSc and MSc) who want to undertake a PhD and aspire to work in the upstream oil and gas industry. This initiative is unique in the UK as it provides monthly short courses and an annual field trip taught by industry experts.

These are designed to provide regular interaction with industry professionals and give the student a greater appreciation of the energy industry. PhD topics are across a broad range of geology and geophysics disciplines.

To find out what support you could be eligible to receive see our online funding database at **www.durham.ac.uk/study/postgraduate/fees/search**

CAREER OPPORTUNITIES
Our graduates go on to a variety of careers upon completion of their study at Durham including academic and applied research, upstream oil and gas industry, environmental management, carbon capture and storage and working in government agencies.

CAREERS AND EMPLOYABILITY
For further information on career options and employability, including the results of the Destination of Leavers survey, student and employer testimonials and details of work experience and study abroad opportunities, please visit **www.durham.ac.uk/earth.sciences/postgraduate/employability**

Name:
Madeleine Bell

Home Country:
UK

Postgraduate Course:
PhD Environmental Science

I was attracted to Durham University not only because of its world-class reputation as a university, but also due to the reputation of the members and work produced in the Department of Earth Sciences on soil carbon.

As a research student my work has involved a combination of fieldwork, lab-work and computer based desk research. It is this variety of work environments and the different situations experienced each day which has been the highlight of my course. There have been many opportunities to present my work to a variety of audiences nationally, and my attendance at an international conference to share and generate research findings and ideas was also a particular highlight.

Three years of in-depth research has not only provided me with a much greater level of knowledge than having not done any postgraduate research, but it has also allowed me to learn many new skills which will be of great benefit in terms of future employment. My lab skills, computer skills and communication skills (both verbal and written) have improved considerably as a result of my research.

Durham is a beautiful small city in which to study, and the surrounding areas of countryside and coastline mean it is easy to escape the pressures of work and enjoy all that North East England has to offer.

Durham University

Contact details

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