

NERC Doctoral Training Partnerships: Summary of Awards and Partnerships



Please note: set titles and roles for partners were not prescribed by NERC for this funding opportunity. Therefore, the partner roles and titles used below are unique to each DTP.

The numbers assigned to each DTP within this summary do not correspond to any ranking and are merely used to assist navigation within this document.

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1. The Oxford DTP in Environmental Research

Number of Notional Studentships Awarded: 24

Partners: University of Oxford, BGS, Birdlife International, Bond Disaster Risk Reduction Working Group, CAFOD, CEH, Elsevier, European Space Agency, Max Planck, Met Office, Natural England, NCAS, NCEO, NOC, Operation Wallacea, RBG Kew, Rutherford Appleton Laboratory (RAL), Science Oxford & Shell Research Ltd

Summary:

The Oxford DTP in Environmental Research will offer a world-class, multidisciplinary training environment for the next generation of researchers working at the frontiers of Environmental Research. The annual cohort will comprise 30 - 35 students, 24 supported by NERC and 5-10 supported by College and University scholarships and industrial partners. This group will be embedded within a wider cohort of over 400 graduate students working in internationally excellent research teams, both on environmental science and on the physics, mathematics, chemistry, and biology that underpins it. Graduates from the Oxford DTP will become the scientific and research leaders of the future, tackling the leading environmental problems that will confront society over the 21st century.

The DTP will offer a novel training environment across three broad science streams, each of which includes the influence of, and consequences for, human-environment interactions:

- a. The 'Biodiversity, Ecology and Evolutionary Processes' stream will span research into biological processes, systems and their interactions, at scales ranging from the organism to the population, in spheres ranging from human health to natural ecosystems, over all timescales.
- b. The 'Physical Climate System' stream will span research across all aspects of the Physical Climate System, present, past and future, with strong links to climate impacts and mitigation.
- c. The 'Dynamic Earth, Surface Processes and Natural Hazards' stream will span activities from theoretical seismology and isotope geochemistry to the analysis of natural resources, quantification of surface processes over all timescales, and geophysical hazards and risk.

The cohort will be selected on the basis of academic excellence and research potential, and will form a diverse group of UK and international scholars. Students will receive tailored training in personal, professional and research skills through a mix of cohort-wide, streamed and individual activities, and will develop a critical understanding of the wider contexts (societal, political, economic) of their research. Our training will build on innovations that have already proved highly successful in Oxford (including paperless classrooms, online learning environments and project-partner-led problem-solving workshops). Training will address many of the critical skills gaps recently identified in NERC's 'Most Wanted' report of 2012. Graduates from Oxford's DTP will be trained in a multidisciplinary environment, including working in teams in a range of problem solving contexts. They will become highly numerate, have modelling skills, be engaged with the protocols and practices of data management, will understand the challenges of translating research into practice, and have well-

developed communication skills. We shall encourage students to develop and extend their own interpersonal, networking and leadership skills within and beyond the cohort.

Each student will engage with a significant research problem, tackling cutting-edge questions that span the breadth of NERC's portfolio, and playing an integral role in setting the agenda beyond the tenure of their studentships. Research and training will be sustained by our vital relationships with, and continued commitments from nineteen Partners from research organisations, business, education and the third sector. These Partners bring important perspectives to the DTP, in helping to define the problems that will need to be addressed by Environmental Researchers of the future, and by offering insights into the world beyond the laboratory. Student engagement with our Partners is a key component in cultivating long-term sustainable partnerships, and ensuring impact. The DTP will also benefit substantially from links with Isis Innovation, Oxford's technology transfer company, who offer insight and training opportunities in the creation and development of spinouts and emerging businesses.

Website: www.environmental-research.ox.ac.uk

Twitter: @OxfordEnvRes

2. SCENARIO. Postgraduate centre in the SCience of the Environment: Natural and Anthropogenic pRocesses, Impacts and Opportunities

Number of Notional Studentships Awarded: 12

Host Partners: University of Reading, University of Surrey, BGS, CEH, NCAS & NCEO

Public Sector Partners: Met Office, Environment Agency, National Physical Laboratory, RAL Space & Satellite Applications Catapult

Industry Partners: Thames Water, Wessex Water, Surrey Satellite Technology, National Grid, BMT Argoss, Deloitte, EDF Trading & Willis

International Universities: California Institute of Technology, University of Oklahoma & University of Hamburg

Summary:

Postgraduate centre in the SCience of the Environment: Natural and Anthropogenic pRocesses, Impacts and Opportunities

Mission Statement

SCENARIO will develop individuals capable of playing a major role in advancing the quantitative science of the environment, in understanding the two-way interaction between humankind and environmental change, and in the stakeholder exploitation of environmental science and engineering.

Vision

The scientific scope of SCENARIO will be broad, spanning the physical, chemical and biological processes within the overarching theme of “environmental risk and sustainability” over a broad range of time and space scales. SCENARIO will provide PhD training ranging from in-depth disciplinary underpinning science, to projects that explore and deepen the links between disciplines. SCENARIO aims to attract high-quality graduates from science, mathematics and engineering degrees. It will develop their skills in environmental sciences by exploiting diverse training opportunities. The focus will be on quantitative environmental science but, in some cases, project scope will extend to links with engineering, social sciences and the humanities.

SCENARIO is led by the University of Reading (UoR), which attracts a high volume of NERC funding (ca. £29M p.a.) across a broad swath of NERC’s remit, including weather and climate science, earth observation, space weather, hydrology, soil science, freshwater science, palaeoclimate and biogeochemical cycles. There are three further Host Partners (where lead supervision of students will also take place): the University of Surrey (UoS), the NERC Centre for Ecology and Hydrology (CEH) and the NERC British Geological Survey (BGS).

Scientific Challenges and Wider Societal Context

Key scientific challenges addressed by PhD students in SCENARIO include:

- Climate change, and the influence of natural and anthropogenic factors, on global, regional and local scales
- Understanding extreme events both as natural hazards and as responses to human activity
- Improving predictability and understanding the limits to predictability
- Novel approaches to observing the environment
- Factors influencing air, soil and water quality
- Disrupted biogeochemical cycles
- Changes in land and freshwater use
- Changes to ecosystems and biodiversity loss
- Interpreting evidence from past climates.

SCENARIO will work with partners in industry and government to deliver answers to important, societally driven, environmental questions. For example, working with weather-sensitive businesses, such as those in the energy, space communications, water and insurance sectors, to develop new ways of approaching the risks associated with natural hazards, reducing their vulnerability and increasing their market edge. For issues operating on longer timescales, the DTP and its partners will produce integrated assessments of environmental change, social vulnerability and resilience, and thereby produce recommendations informing robust governance and policy.

Website: <http://www.met.reading.ac.uk/nercdtp/home/>

3. ENVISION: Developing next generation leaders in environmental science

Number of Notional Studentships: 12

Partners: University of Lancaster, University of Bangor, University of Nottingham, 3D Laser Mapping Ltd, 4DGeo, Advanced Geochemical Systems Ltd, APEM Ltd, Arid Agridtec, Atkins Ltd, BGS, Bowleven PLC, British Trust for Ornithology (BTO), Cairn Energy, CEFAS, CEH, Crops for the Future Research Centre, Dwr Cymru Welsh Water, Ecological Continuity Trust, EDP Renewables (EDPR), Environment Agency, Forest Research, Game and Wildlife Conservation Trust, Getech, Guangzhou Institute of Geochemistry, CAS, JBA Trust, LEAF, Macaulay Scientific Consulting Ltd, Monkfield Nutrition, Natural Resources Wales, NCAS, NOC, Nuclear Decommissioning Authority, Partrac Consulting, Plant Bioscience Ltd, Plant Impact PLC, Rothamsted Research, Royal Zoological Society Scotland (RZSS), Scottish Water, Small World Consulting Ltd, Stopford Projects Ltd, Strategic Energy Consulting Ltd, The REACH Centre Ltd, Triskem International, Tropical Agricultural Research and Higher Education Centre (CATIE), United Utilities, World Agroforestry Centre (ICRAF), WT Infotech & Yorkshire Water

Summary:

The aim of ENVISION is to provide new breed of environmental scientist who, in addition to their subject knowledge, has leadership skills, the ability to work across disciplines and can support business. Our purpose is to develop a cohort of graduate students carry out world-class research that delivers knowledge, innovation and new practices which make a difference to our understanding of the environment and sustainability of the planet, but who are also capable of leadership in science, policy and business. Our doctoral graduates will think in novel ways: they will embrace the culture and challenges of multidisciplinary; understand the importance of their science in advancing knowledge of both how the earth system functions and they will take cognisance of the impact of their research on the economy, policy and innovation.

To deliver this vision we have assembled a team of HEIs and Research Institutes with complementary expertise, worldclass research and facilities, a track record of connecting with business and government and a commitment to high level innovative and exciting postgraduate training. The consortium is coordinated by the Lancaster Environment Centre, Lancaster University and includes the Universities of Nottingham and Bangor, the Centre for Ecology and Hydrology, the British Geological Survey and Rothamsted Research.

ENVISION has the following key features:

- A world-class multidisciplinary research training environment, that includes supervisors working at the cutting edge and world class research platform.
- Broad research themes.
 - + Achieving the sustainable use of natural resources
 - + Environmental change

+ Environmental hazards and risks

- Close ties with business and Research Institutes through our 40+ CASE and partners.
- Every student will have the opportunity to gain employment experience either through an industrial placement, a CASE project, an international placement at one of our international partners or through working in one of the Research Institute Partners.
- Multiple research organisations that complement each other and offer the potential for new science and collaborations.
- A multidisciplinary training programme that will offer our students

+ the highest quality training opportunities

+an exciting programme of generic skills, personal development and research skills training;

+ a stimulating environment for the students to work in.

Alongside the more traditional generic and research training modules, we will run a series of high level cohort development events focused on developing leadership, teamwork, science communication and multidisciplinary skills. These will be facilitated and include inputs from industry and government and give the students a chance to promote NERC science at a leading science festival. Our generic and research training modules will be available across the partner institutes and student mobility between partners will be facilitated through our cohort development and mobility fund. The cohort will come together virtually for monthly seminars and through social media to discuss their research and share experiences.

Website: www.envision-dtp.org

Twitter: @ENVISIONDTP

4. The London NERC Doctoral Training Partnership

Number of Notional Studentships Awarded: 24

Core Partners: University College London (UCL) (Administrative Lead), Birkbeck University of London, Brunel University (BU), King's College London (KCL), Queen Mary University of London (QMUL), Royal Holloway University of London (RHUL), Institute of Zoology (IoZ), Kew Royal Botanic Gardens (Kew) & The Natural History Museum (NHM).

Project Partners: Microsoft International, BHP Billiton & Ove Arup and Partners Ltd.

CASE Partners (Existing): Agip, Arcadis Ltd, AstraZeneca, Astrium, British Antarctic Survey, Broads Authority, BUCEFAS, CEFAS, CEH Wallingford, ChemTrust, DEFRA, Department of Health, Environment Agency, FERA, Fluid Dynamics, Forestry Research*, Glaxo, Highlands Birchwoods, Infoterra Ltd, Natural England, National Lobster Hatchery*, Met Office, MI Swaco, Permian Capital Ltd, Pfizer, Proudman Labs, Quantemol*, Rezatec*, Risk Management, Solutions*, RSPB*, SAFHOS, Scottish Crop Research Institute, SERCON*, STFC Laboratories, Thames Water, UHI, Willis Ltd*, ZSL*.

CASE partners (future): Ove Arup*, Air Worldwide*, BHP Billiton*, CABI*, DMCii, Geospatial Research*, Bright Club*, Royal Geographical Society*, Lloyds*, Microsoft International*, National Physics Laboratory*, Royal Surrey County Hospital NHS Trust*, Thames Estuary Partnership*, Science Museum*, Supraregional Assay Service, Surrey Satellites, South-West Water*, Water Research Centre*, WCMC*, WCS of Europe*.

*(*asterisk indicates who has provided partner support forms).*

Summary:

The London NERC Doctoral Training Partnership brings together nine of the world's leading research centres in environmental science. The Partners have a shared vision of the importance of adopting integrated approaches to train environmental scientists in ways that cross the boundaries between established disciplines and fields. The Partners have diverse and complementary expertise and have created an exciting doctoral training programme that builds on our existing strong research collaborations. This Partnership provides a unique opportunity for world-renowned research institutes such as Institute of Zoology, Kew and Natural History Museum to supervise NERC students and to fully engage with research intensive universities in the multi-disciplinary training of each cohort of students. Our training will provide cross-disciplinary, disciplinary and transferable skills with special attention being paid to the skill requirements highlighted by recent Government report. The ultimate aim of the London NERC DTP is to produce skilled, highly employable, environmental scientists who will enhance the prosperity of the UK's knowledge-based economy. The London NERC DTP will provide a unique and exciting student experience in the heart of one of the great World Cities. Our aim is to attain new standards of excellence in environmental science research training and to deliver a transformative interdisciplinary experience for PhD students. Students will be trained by world leading research centres, which not only cover a huge range of the environmental sciences but also represent a wide variety of scientific practice.

The Partnership has been developed to ensure a balanced broad but deep environmental sciences portfolio within the NERC remit as well as enabling interdisciplinary interfaces with other Research Councils. Our research training is focused on seven broad and one crosscutting pathway: 1) Biodiversity and Ecology, 2) Environmental Pollution, 3) Earth, Atmosphere and Ocean processes, 4) Evolution and Adaptation, 5) Natural and Biological Hazards, 6) Past Life and Environments, 7) Solid Earth Dynamics and 8) Pan-disciplinary. We have a critical mass of world-class researchers in these study areas, ensuring that students will thrive in environments of research excellence. The four-year PhD programme is divided up into distinct period of training. There will be an intensive programme of interdisciplinary core research and professional development training in the first Term. In Term 2 the students plan their PhD in detail and have further training on the joint Biology-Earth Sciences field-class in California and in the whole scope of computer modelling within the environmental sciences.

Students will also be given the opportunity to have employability and entrepreneurship training and to become science ambassadors within state-funded secondary schools. The Partners are united in seeing the DTP as an ideal opportunity to exploit the existing synergies and foster multiple new research links between institutions. This DTP is ideally placed to become the central hub of environmental research training in London.

Website: www.london-nerc-dtp.org

Twitter: @London_NERC_DTP

5. NERC Science @ Leeds and York - Site for PhD Training in Environmental Research (SPHERES)

Number of Notional Studentships Awarded: 15

UK HEI Partners: University of Leeds (Administrative Lead) & University of York

Key Academic Partners and NERC Centres: Met Office, British Geological Survey, Centre for Ecology and Hydrology & National Centre for Atmospheric Science

UK National Organisations: Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Diamond Light Source (DLS), Food and Environment Research Agency (FERA), Parliamentary Office of Science and Technology (POST), National Nuclear Laboratory (NNL) & National Physical Laboratory.

Non-Governmental Organisations: British Trust for Ornithology (BTO), Freshwater Biological Association, Geological Survey of Northern Island, Lake District National Park Authority, National Trust, Natural England, Nidderdale AONB, Royal Botanic Gardens, Edinburgh, Royal Society for the Protection of Birds (RSPB), Wildfowl and Wetlands Trust (WWT), Yorkshire Dales National Park Authority & Yorkshire Wildlife Trust (YWT).

Small and Medium Enterprises (SMEs): Anatune Ltd, Asymptote Ltd, Getech, JBA Trust, Markes International, Midland Valley, NPA Satellite Mapping, RDR & Rockfield Software Ltd.

International Commercial Organisations: Arup, GDF SUEZ, HydroIsotop, ION Geophysical (ION-GXT), Klondike Gold Corporation, Syngenta, Thermo Electron Manufacturing Ltd (“Thermo Fisher”) & Yukon Geological Survey

International Research Organisations: International Center for Tropical Agriculture (CIAT), International Water Management Institute, Karlsruhe Institute for Technology (KIT), Germany, NASA-JPL, National Center for Atmospheric Research (NCAR), USA, Peruvian Amazon Research Institute (IIAP), States Geological Survey (USGS), University of Illinois, Center for Watershed Science & World Conservation and Monitoring Centre.

Summary:

The distinctive nature of our proposed DTP is our ability to train a large and well integrated cohort of students across a wide range of the NERC science remit, within a vibrant, multi-disciplinary research environment, mostly on a single site in Leeds. Students will be part of an organisation that has a long and successful track record of blending outstanding disciplinary research with imaginative cross-disciplinary initiatives.

Our DTP is a partnership between five academic units at the University of Leeds, the Academic Lead Partner, and the Department of Chemistry at the nearby University of York, which collaborates closely in the area of atmospheric science. Together, Leeds and York provide one of the UK's largest cohorts of NERC-facing university-based researchers.

Our DTP spans an array of disciplinary and multidisciplinary research themes related to the Earth's Atmosphere, Geosphere and Biosphere, and includes over 100 permanent academic staff, organised loosely into 10 major interdisciplinary NERC-facing research clusters which span our internal

organisational divisions. Amongst our 48 partner institutions we have four designated Key Partners, the Met Office, the Centre for Ecology and Hydrology (CEH), the British Geological Survey (BGS), and the National Centre for Atmospheric Science (NCAS). Colleagues at these partners will be fully involved in the design and supervision of PhD projects, further increasing our supervisory and training capacity. Additional CASE partners will also provide external supervision and training, and access to their specialised facilities.

Based on our very strong track record of NERC research, and excellent laboratory and computing facilities, we will offer PhD projects which address some of the major challenges in the environmental sciences today and in the coming decades. Our PhD projects will focus on both fundamental and applied research questions. All of our DTP students will be immersed in a multidisciplinary training environment. We will recruit highly qualified postgraduate students with a range of scientific backgrounds, including the Earth and environmental sciences, physical science and natural science. Our students will interact with those from other doctoral training centres and partnerships that our departments host, such as those funded by EPSRC, ESRC and BBSRC.

Our DTP will have a comprehensive training programme to ensure that our students make best use of their time studying for a PhD, and to increase their range of career options on graduation. The close geographical proximity of the universities involved (<1 hour travel from Leeds campus to York campus) means that we will develop a tightly-knit cohort of students able to access all the developmental opportunities available to them, and who can support each other through peer-to-peer learning. Our DTP will use a combination of existing and new transferable skills training initiatives, combined with new courses in a range of technical subjects, to provide a comprehensive training programme, linking to the Researcher Development Framework. There will be a range of delivery mechanisms, including class-based, group, online, peer-to-peer and social media. Our external partners will be heavily involved in the design and delivery of training. All students, not just CASE students, will have the opportunity for a placement of at least 1 month with our external partners, broadening their experience beyond Leeds and York.

Website: www.nercdtp.leeds.ac.uk

Twitter: @LeedsYorkDTP

6. Central England NERC Training Alliance (CENTA)

Number of Notional Studentships Awarded: 12

Partners: University of Birmingham, University of Leicester, University of Loughborough, Open University, University of Warwick, British Geological Society and the Centre for Ecology and Hydrology.

Summary:

CENTA is a geographically and scientifically coherent consortium offering a wide range of excellent NERC science embedded in a vibrant multidisciplinary environment. The Universities (Birmingham, Leicester, Loughborough, Open and Warwick) and Institutes (British Geological Survey and Centre for Ecology and Hydrology) have a strong track record of producing PhD graduates fit for further research or other relevant employment. We will advance PhD training significantly by offering broad and holistic educational opportunities in the environmental sciences, including innovative approaches to cohort training, supported by the Open University's Virtual Research Environment learning platform. Where we offer leading national capability, we will offer training to other NERC consortia in addition to CENTA students. We are match-funding this bid for 20 studentships annually.

CENTA defines its four areas of science excellence as follows:

- 1) Anthropogenic impacts and environmental sustainability. Key areas of strength include pollutants in the atmosphere and terrestrial hydrosphere, hydrogeology, hydroecology, atmospheric chemistry, nanoparticles in the environment and
- 2) Evolution of organisms and ecosystems. Key areas of strength include modern and ancient ecosystems, responses to environmental change, vertebrates, exceptional preservation, micropalaeontology.
- 3) Dynamic Earth. Key areas of strength include magma dynamics, tectonics, Earth surface processes, rates and timescales of geological processes, palaeoenvironments and palaeoclimates, all underpinned by cross-cutting excellence in geochemistry.
- 4) Organisms, 'omics and biogeochemical cycling. Key areas of strength include microbial processes in global biogeochemical cycles and genomic approaches to aquatic ecotoxicology.

CENTA institutions are matching the funding that they are requesting from NERC including a cash input of around £1.2 M per year permitting a 75% increase in the number of students in the programme as well as fully-costed training provision. The financial model ring-fences the key costs of administration and research student expenses to protect the smooth running of the consortium. The match-funding arrangement allows the individual priorities of institutions to be expressed without harming the collective CENTA ethos or the focus on student excellence during recruitment.

In the new training portfolio, there will be a step-change in the experiences offered to PhD students with support for supervisors engaged in this enhanced training agenda and drawing on its extensive existing postgraduate training as well as many new bespoke offerings. Through, shared training in a cohort with diverse backgrounds we will facilitate peer-to-peer learning. Sixty days of front-loaded formal skills training per student will be balanced between our science excellence, Vitae's

Researcher Development Framework and the NERC-led "Most Wanted" reports. Hence students' skills and insight will be rapidly developed making them fully aware of the range of approaches that they can choose to implement in their research. All students will also be given an opportunity to develop an extended placement, either in a different research laboratory, or in a different arena (e.g. industry, government, media).

CENTA is well-placed to provide a multidisciplinary training and research environment in environmental science, combining NERC led research with a wide range of activity funded by other research councils, the EU and industry, having in-house expertise in environmental social science and departmental affiliations in the physical, bio- and geo-sciences as well as engineering.

Website: www.centa.org.uk

Twitter: @CENTA_NERC

7. Training the next generation of environmental scientists

Number of Notional Studentships Awarded: 12

Full Partners: University of Manchester, University of Liverpool & NOC

Partners: BGS, BP Alternative Energy, Defence Science & Technology Laboratory, Diamond Light Source, Met Office, NCAS, Nuclear Decommissioning Authority Radioactive Waste Management Directorate (RWMD) & TOTAL Exploration and Production UK Ltd

Summary:

This DTP will provide rigorous training in research encompassing Atmospheric, Ocean, Earth and Environmental Sciences, with a strong multidisciplinary ethos. The Universities of Manchester and Liverpool, together with the National Oceanography Centre, offer a complementary range of research expertise across this broad range of subjects, with a tradition of interdisciplinary research at all three institutions. The bid will be supported by both NCAS and BGS as project partners, and by partners in research and commercial organisations, to give students a range of options for external training, placements and CASE partners. With over 70 investigators holding NERC grants over the past two years, we have the manpower and range of expertise to support our bid for 24 studentships a year. Demand for places at Manchester and Liverpool is strong with over five applications per studentship at present.

Building on our strong track record of delivering joint doctoral training centres across Manchester and Liverpool, we will develop our students as independent researchers able to embark on a range of careers, by combining a number of training elements: challenging research topics at the cutting edge of science, supervisory teams responsive to the student's need, formal courses in key disciplinary topics, skills training specific to the environmental sciences (e.g., data analysis, model building and fieldwork), general transferable skills and placements or internships in partner organisations. A multidisciplinary perspective will be developed through a programme of DTP-wide events such as induction courses, awaydays and seminars as well as an annual conference organised by the students. Our formal training structure is organised in three pillars - Atmospheric science, Ocean science and Earth and Environmental science, each of which is underpinned by large research groups in receipt of substantial NERC funding. Within these pillars a range of courses will be offered, including science courses and advanced skills training. We will recruit the best students to our DTP, who will come to us with a range of prior knowledge and experience, and we will offer a wide range of PhD projects both within and across the disciplines. Each student will therefore follow their own tailored training programme, drawing on elements from all three pillars and from the extensive transferable skills portfolio already offered by the Graduate Schools at Liverpool and

Manchester. Students will work with their supervisory team to identify their training needs and develop a suitable programme. We will also ensure that students are able to attend suitable courses at national and international summer schools, as well as research conferences and workshops where they will gain experience in presenting their results. In this way our students will gain knowledge, expertise and confidence in their chosen subject and develop the key skills identified as shortages in the recent Skills Review.

Guiding the student to successful completion within the allotted time requires a number of factors other than training. Formal quarterly reviews of student progress are already in place at Manchester and Liverpool, with much more demanding annual reviews including oral examination. Working with the respective Graduate Schools, the DTP Board will monitor student progress closely and revise training and supervisory as required. We will ensure that students are taken through the full research process, from defining the problem through to revising the final paper to meet referees' comments – indeed where possible students will be encouraged to submit their theses in research paper format.

Website: <http://www.liv.ac.uk/studentships-earth-atmosphere-ocean/>

8. IAPETUS : Postgraduate Environmental Training NexUS : transforming doctoral students into the next generation leaders in science, industry and policy

Number of Notional Studentships Awarded: 12

Partners: University of Durham, University of Newcastle, University of Glasgow, University of Stirling, University of St. Andrews, 4DGeo, APS Geoservices, Bat Conservation Trust, BGS, BP, British Trust for Ornithology (BTO), CEFAS, CEH, Commonwealth Scientific and Industrial Research Organisation on (CSIRO), DONG Energy, English Heritage, ENI, Forest Research, Forestry Commission, Fugro Intersite B.V., GeoSpatial Research Ltd, Historic Scotland, Icelandic Meteorological Office, National Trust for Scotland, NOC, Ordnance Survey, Planet Earth Institute, PML, Royal Society for the Protection of Birds, Scottish & Southern Electric, Scottish Environmental Protection Agency, Scottish Natural Heritage (SNH), Scottish Water, Seagreens Ltd, Seaweed Health Foundation, Sony CSL Paris, South West Water, Statoil UK Ltd, ThermoFisher Scientific & TOTAL Exploration and Production UK Ltd.

Summary: Named after the ancient ocean that closed to bring together England and Scotland, IAPETUS is a joint venture between the universities of Durham, Glasgow, Newcastle, St Andrews and Stirling, together with the British Geological Survey and the Centre for Ecology & Hydrology, which trains the next generation of environmental and Earth scientists.

IAPETUS is a multidisciplinary Doctoral Training Partnership (DTP), funded and accredited by NERC, offering PhD students a world-class environment in which to study, encompassing:

- A range of attractive fully-funded PhD studentships;
- Supervision and support from academics and researchers that are world-leaders in their fields;
- Tailored training and development programmes;
- Placements and internship opportunities; &
- Access to a vast range of high-quality laboratories, facilities and resources.

IAPETUS' training and research is focused around a number of interdisciplinary clusters of internationally-recognised excellence, which spans the environmental and Earth sciences:

- Global environmental change;
- Geodynamics and Earth resources;
- Carbon and nutrient cycling;
- Hazards, risks and resilience; &
- Biodiversity and ecosystem resources.

Collaboration and knowledge exchange with industry, policy-makers and other non-academic organisations is at the heart of our activities. Over 30% of our studentships are CASE awards, which involve students working in close partnership with a non-academic organisation throughout their PhD and we already have over 35 external partners supporting IAPETUS's research, including BP, the Natural Trust for Scotland and the Ordnance Survey.

Website: <http://www.iapetus.ac.uk/>

Twitter: @iapetus_dtp

9. Environment East (EnvEast) Doctoral Training Partnership

Number of Notional Studentships Awarded: 12

UK HEI Partners: University of East Anglia, University of Essex & University of Kent

Core Partners: BAS British Trust for Ornithology (BTO), CEFAS, CEH, John Innes Centre, Marine Biological Association, PML & Sir Alister Hardy Foundation for Ocean Science (SAHFOS)

Contributing Partners: Adapt Low Carbon Group, Birdlife International, BGS, Forest Research, Met Office, Tyndall Centre, Fudan University, Gardline Marine Sciences Ltd, NCAS, Royal Society for the Protection of Birds, The Genome Analysis Centre (TGAC), Weatherquest & The Sainsbury Laboratory, Norwich Research Park

Summary:

Environment East (EnvEast) will be a doctoral training partnership (DTP) founded upon world-leading environmental science and established excellence in PhD training. The EnvEast DTP will provide training and generate impact in three key areas of international significance including the following three themes:

1. Climate, Marine and Atmospheric Systems
2. Biodiversity, Ecosystem Services and Sustainable Development
3. Natural Hazards

The partnership draws together relevant expertise from a complementary set of 23 research organisations to train scientists capable of making outstanding contributions to their discipline and able to apply their knowledge to the challenges facing the UK economy and the quality of life for its citizens. The DTP is designed to provide an environment and ethos that inspires students to:

- take charge of their professional and personal development as scientists
- achieve excellence in their research
- achieve impact through application of their specialist knowledge outside of academe.

To these ends, EnvEast will recruit the highest calibre applicants from a diverse pool of talent available across the UK to tackle significant research questions using rigorous methods and innovative approaches; train, manage and mentor students within a multidisciplinary research and training environment to allow them to flourish as excellent independent researchers; and encourage students to develop as scientific and business leaders, entrepreneurs, communicators, educationalists and policy makers.

The EnvEast rationale for partnership is science-led, building on existing collaborations where we already have strong links and complementarity and a proven track record of research and post graduate researcher training success. The research aims of EnvEast align with the goals of NERC, the UK government and the international scientific agenda being laid out by the new ICSU Future Earth

programme. Each partner makes a distinctive contribution that will enhance the training environment offered and enrich the student experience. Those partners that meet CASE eligibility requirements can act as CASE partners, but EnvEast is also looking to form CASE partnerships across a wider network to maximise diversity and opportunity for our students.

The partners in EnvEast have wide interests across much of the NERC science remit having supervised post graduate researchers in topics as diverse as solid earth geophysics, through ocean, atmosphere and climate science, to ecology, human perceptions of risk, sustainable development and the use of economic measures to value natural capital. The partners collectively have particular research strengths, reputation and synergies in the three key themes which are aligned to all five key priorities of the new NERC strategy and to RCUK's grand challenges of: (1) Global Uncertainties, (2) Living with Environmental Change, (3) Lifelong Health and Wellbeing, (4) Energy, and (5) Global Food Security.

EnvEast will take full advantage of the exceptional range of opportunities offered by its diverse contributors to offer PGR students an unparalleled opportunity for training in the environmental sciences that would be impossible for a single institution to offer. This enhanced training environment is intended to provide the UK's next generation of scientific and business leaders, educationalists and policy makers in the environmental sciences and as such will deliver:-

1. Research projects that take an interdisciplinary approach to address major contemporary challenges in the environmental sciences.
2. Cohort-based training that will develop a sustainable and supportive network of highly trained and influential peers.
3. High quality research outputs and enhance the employment potential of each student.

Website: <http://www.enveast.ac.uk/>

Twitter: @EnvEast

10. The Cambridge Earth System Science DTP: Multi-disciplinary studies of the solid Earth, its atmosphere, oceans, cryosphere and biosphere.

Number of Notional Studentships Awarded: 15

Core Partners: University of Cambridge & BAS

Other Partners: AB Sugar, Alphasense, Anglian Water, Arup, Atomic Weapons Establishment (AWE) PLC, BGS, Birdlife International, BP, DECC, Eni, Foreign & Commonwealth Office, Met Office, National Institute of Agricultural Botany (NIAB), Natural England, NCAS, Proforest, Royal Society for the Protection of Birds, Schlumberger Gould Research, Shell, Thames Water Utilities Ltd, UNEP World Conservation Monitoring Centre, Waitrose Ltd & Weston Geophysical Corporation.

Summary:

The Cambridge Earth System Science (ESS) DTP provides PhD training across the NERC scientific remit. It is embedded in an outstanding research environment the University of Cambridge and the British Antarctic Survey (BAS). Understanding Earth System Science requires integration of a broad range of scientific disciplines, integrated within this partnership. The breadth is reflected by the range of University Departments involved: Earth Sciences, Applied Mathematics & Theoretical Physics (DAMTP), Chemistry, Geography, Plant Sciences, Zoology and Archaeology & Anthropology, as well as BAS. It exploits a new Government-NERC-University led strategic alignment of University and BAS research training.

The Cambridge ESS DTP is organised around three major research themes: Solid Earth (geodynamics, structure, composition and evolution), Climate (climate change and Earth-ocean-atmosphere-cryosphere systems), and Biology (biodiversity, ecology, palaeontology, evolution, phylogeny, and epidemiology). These encompass the strategically important areas of NERC research (Climate system; Biodiversity; Sustainable use of natural resources; Earth system science; Natural hazards). The DTP builds on the strong multi-disciplinary links between the University departments and BAS, and takes advantage of the links to enabling research, beyond the NERC remit, in the University and with the wide range of partners. DTP students form a distinctive cohort of their own, but benefit from membership of a large body of additional graduate students and researchers within related groupings. The DTP enhances and exploits these multi-disciplinary links, particularly those with BAS, where work on climate change, and especially its impact on fragile polar environments, has important implications for society.

The Cambridge DTP is distinguished by the research excellence of its setting, which is multi-disciplinary showing breadth in relevant training. Members of the DTP cohort interact with the mathematical, physical, chemical and biological sciences. The result is doctoral graduates with strong numerical and modelling skills, and with strong links to national and international science and users in government and industry. PhD training in Cambridge has a strong pedigree: graduates become leaders in academic, industrial and government fields and their training fills key skills gaps in the environmental sciences. The DTP further strengthens this by cementing the multi-disciplinary links

between the University departments and BAS, and by establishing best practice across the partners. It exposes young researchers to the full breadth of training within Cambridge environmental sciences, to the wide range of external project partners, to international research, and to industrial imperatives. These represent exceptional opportunities for leading individuals to develop as future science leaders.

The student members of the Cambridge ESS NERC DTP benefit from the wide range of training in transferable and specialist skills. Following an early individual training skills analysis they will be directed towards relevant training opportunities within the Schools of Physical and Biological Sciences, as well as availing themselves of the key skills development and careers advice provided by the nurturing environment of the University, Departments and Colleges. Annual DTP workshops will highlight the activities of the Cambridge ESS cohort and enable the development of a lasting network of scientific collaboration.

The DTP is managed centrally to coordinate selection of the best students, the maintenance of standards and reporting, and to ensure that PhD students benefit from the multi-disciplinary opportunities of a vibrant and active research community. Selection of the very best students to appropriate research projects is coordinated across each of the three research themes. Steered by an inter-departmental panel each group will oversee the selection of the best applicants, with the distribution of studentships coordinated by the central management group, reflecting the quality of students across the themes. The immediate responsibilities for supervision of students and oversights of this supervision will be managed by the host Departments within the DTP, to ensure students are embedded in a system that responds rapidly and appropriately to their needs, and monitored through the DTP management group.

Website: <http://essdtp.esc.cam.ac.uk/>

Facebook: <http://www.facebook.com/CambridgeESS>

Twitter: <http://twitter.com/CambridgeESS>

Reddit: <http://www.reddit.com/user/CambridgeESS/>

Stumbleupon: <http://www.stumbleupon.com/stumbler/CambridgeESS>

11. NERC GW4+ DTP - a consortium of excellence in innovative research training

Number of Notional Studentships Awarded: 28

Core Partners: University of Bath, University of Bristol, Cardiff University, University of Exeter, British Antarctic Survey, British Geological Survey, Centre for Ecology and Hydrology, Met Office, Natural History Museum & Plymouth Marine Laboratory.

Associate Partners: Animal Health and Veterinary Laboratories Agency, AstraZeneca, BHP Billiton, CEFAS, Cornwall Council, Cynnal Cymru- Sustain Wales, Environment Agency, Food and Environment Research Agency, Marine Biological Association, National Botanic Garden of Wales, National Museum Wales, National Nuclear Laboratory, Natural Resources Wales, Royal Society for the Protection of Birds, Sellafield Ltd, Shell, Syngenta, Taylor & Francis, ThermoFisher Scientific, Unilever, URS Corporation Ltd, Welsh Government, Wessex Water & Willis Ltd.

Summary:

GW4+ is a multidisciplinary consortium of excellence in innovative research training designed to equip tomorrow's leaders in environmental science. GW4+ is configured on a scale that provides intellectual and infrastructural critical-mass across a comprehensive breadth of NERC science by combining the strategic alliance of the "Great Western Four" research-intensive universities (Bristol, Exeter, Cardiff, Bath), with six leading research organizations (British Geological Survey, British Antarctic Survey, Natural History Museum, Centre for Ecology and Hydrology, Plymouth Marine Laboratory, Met Office) and 26 associate partners that cover the full range of non-academic graduate employers, including policy and legislation, media, industry, environmental research and public engagement.

Novel aspects of the DTP include a system of student-managed training credits (to access bespoke training courses and international opportunities) and step-change levels of employer engagement (including development of training strategy and workplace secondments). The level of partnership with "users" of NERC research is a means to enhance capacity to deliver impact from research done within the DTP. Each year GW4+ will award 38 studentships funded through NERC DTP award and contributions from the Great Western Four universities. The number of studentships awarded is commensurate with the breadth of research excellence and infrastructure, current NERC funding and training capacity across the partnership.

Training is arranged around the following 3 themes:

1. Solid Earth
2. Living World
3. Changing Planet

GW4+ includes training programmes designed to equip students for a wide variety of careers in environmental sciences within academia and beyond.

Students will choose primary supervisors from a broad range of disciplines, and co-supervisors in complementary fields to promote interdisciplinarity from the earliest stage of their training. The DTP addresses recognised critical-skills gaps for new PhDs across NERC science, enabling students to acquire key transferable skills (including quantitative and modelling, data handling and management, communication, leadership, critical thinking) concurrently with their core development of research-specific skills. Consequently, graduates of GW4+ will be highly employable across the environmental sciences sector and beyond. GW4+ will also form part of a larger Wessex doctoral training network (DTN) with DTPs led by the universities of Oxford and Southampton. This brings even greater breadth and depth of expertise, enhances networking, and creates further opportunities for training, utilizing specialized resources, and careers development. An annual congress will draw together more than 300 PhD students from across the DTN to provide a unique, student-led regional showcase for NERC science. International DTN summer schools will expose and engage students in scientific topics of pressing societal importance.

Website: <http://www.bristol.ac.uk/gw4plusdtp/>

Twitter: @GW4plusDTP

12. Science and Solutions for a Changing Planet

Number of Notional Studentships Awarded: 15

Lead Partner: Imperial College London,

Core Research Partners: British Geological Survey, Centre for Ecology and Hydrology, Met Office, Natural History Museum, Royal Botanic Gardens Kew & Zoological Society of London.

DTP Partners: Agrii, Alstom, Anglian Water, AngloAmerican, AWE, BP, CEFAS, Climate-KIC, DEFRA, Game and Wildlife Conservation Trust, Getech, HR Wallingford Ltd, LCAworks, Lighthill Risk Network (LRN), MeyGen Ltd, National Physical Laboratory, Natural England, NCAS, NOC, Oxitec Ltd, Public Health England (PHE), Sainsbury's Stores Ltd, Science Museum, Shell Research Ltd, Thames Water, The Pensions Management Institute (PMI), TOTAL Exploration and Production UK Ltd & Veolia Environmental Services

Summary:

The Science and Solutions for a Changing Planet (SSCP) Doctoral Training Partnership brings together Imperial College London's world leading expertise with that of our partners to offer our unique world-class multidisciplinary PhD training programme.

Our aim is to tackle global environmental change by bringing together postgraduate students from a range of different academic disciplines and preparing them to become effective policy makers, entrepreneurs and business leaders. The students will address issues such as how UK homeowners and businesses can handle their risk of flooding; how agricultural production can deal with the rising threat of invasive species on UK trees and plant life; and how to deal with challenges around water quality and scarcity.

Partners will offer training and secondment opportunities designed to enhance the students' employability. Those partners with business and government experience will also provide skills coaching in policy, regulation, and entrepreneurship.

Website: <http://www.imperial.ac.uk/grantham/postgraduate-training/science-and-solutions-for-a-changing-planet/>

Email: sscp.dtp@imperial.ac.uk

13. E3 - Edinburgh Earth and Environment - Doctoral Training Partnership

Number of Notional Studentships Awarded: 18

Schools at the University of Edinburgh: Chemistry, Engineering (Institute for Energy Systems, Institute for Infrastructure & Environment), Informatics, Mathematics, Physics & Astronomy (UK Centre for Astrobiology) & Business School

National Facilities/Other Research Organisations: BGS, CEH, Met Office, NCAS, Forest Research, SUERC, Scottish Association for Marine Science, National Museums Scotland, Biomathematics and Statistics Scotland, Scotland's Rural College & Royal Botanic Garden Edinburgh

UoE Centres and Networks: Centre for Science at Extreme Conditions, Edinburgh Parallel Computing Centre, Edinburgh Centre for Carbon Innovation & Global Environment and Society Academy.

Industry and Policy: Scottish Environment Protection Agency, TOTAL Exploration & Production UK Ltd., International Institute for Environment and Development, LTS International & Global Surface Intelligence Ltd.

Summary:

The Edinburgh Earth and Environment (E3) DTP, led by The University of Edinburgh (UoE), brings together 28 partners from the research, education, policy and industry sectors to deliver a world class programme of PhD training and multidisciplinary research. E3 will attract and enable the best PhD students to address relevant environmental challenges through frontier research, by providing a flexible training programme in a multidisciplinary setting that will prepare them to become the next generation of science leaders.

The distinguishing features of the E3 DTP are the: 1) outstanding research environment of world-leading researchers and supervisors and extensive research facilities which enables students to achieve their potential; 2) multidisciplinary research environment taking advantage of the scientific breadth of E3 partners; 3) promotion of transferable skills, with access to internships, facilities, training and expertise in the many and diverse partners within a 10-km radius; with collaborative access to national capability and facilities further afield; 4) concentration of partners within the Edinburgh area, facilitating a strong cohort identity.

E3 builds on existing research collaboration and PhD supervision between individual partners to create a new integrated programme with significantly enhanced supervisory capabilities, and research and training opportunities. The DTP, led by the School of GeoSciences at UoE, one of the largest and most successful groupings of geoscientists in the UK, will allow PhD students to conduct world-leading research within core geosciences and at their interface with other disciplines, through the other UoE partner Schools of Chemistry, Engineering, Informatics, Mathematics, Physics & Astronomy, and Business.

The non-UoE research organisation partners within E3 provide additional supervisory expertise, placement opportunities, and access to specialist training and facilities (many unique in the UK) such as laboratories, specimen collections, databases, models and computing resources, and field equipment and sites in the UK and overseas. Eight of these partners have bases in the Edinburgh area, facilitating PhD student access and co-supervision. Policy and industry partners provide DTP students with opportunities for professional internships and collaborative research.

Students will be recruited from a range of academic backgrounds on the strength of their academic achievement and research potential in the geosciences. They will be embedded in a large and thriving research community, including an experienced pool of over 200 supervisors currently training around 500 PhD students. E3 will pay particular attention to maintaining supervisory excellence. PhD projects will be developed by supervisors and students and reviewed within the DTP for science quality, feasibility and NERC relevance. The progression of students will be monitored every six months, through oral and poster presentations, a first-year research proposal, and progress reports and review meetings in later years.

The E3 training programme is designed to facilitate scientific and professional development of students related to current skills gaps in the UK environmental sectors, whilst maintaining a strong cohort identity. Core training delivered to all students will comprise annual residential training, addressing science excellence, creativity, and employability, and courses in "Research Planning and Management", "Frontiers in Geosciences", "Numeracy, Modelling & Data Management" and "Pathways to Impact". Core courses are designed to facilitate peer-to-peer and inter-year tutoring to support cohort development.

Students will have the opportunity to personalise their further training from a portfolio of academic, research and transferable skills courses and summer schools delivered by E3 partners or elsewhere, including a three-month funded internship in a professional setting.

Website: <https://e3partnership.wordpress.com/>

14. SPITFIRE - the Southampton Partnership for Innovative Training of Future Investigators Researching the Environment

Number of notional studentships Awarded: 15

Hosting Partners: University of Southampton, British Antarctic Survey, Centre for Environment Fisheries and Aquaculture Science, Centre for Ecology and Hydrography, HR Wallingford, Marine Biological Association, Natural History Museum, National Oceanography Centre, Plymouth Marine Laboratory, Sir Alister Hardy Foundation for Ocean Science

Industrial and Case Partners: Aker Solutions, Anglo-American, Associated British Ports Marine Environmental Research Ltd (ABP Mer), Atomic Weapons Establishment (AWE) plc, BGS, BP Exploration Operating Company, Cambridge Carbon Capture Ltd, Defence Science & Technology Laboratory, Environment Agency, Forestry Commission, Fugro EMU Ltd, GNS Science (NZ), Kongsberg Geoacoustics Ltd, Lloyd's Register, Marine Ecological Survey Ltd, Marwell Wildlife, National Instruments UK Ltd, Natural England, Ordnance Survey, Sainsbury's Stores Ltd, Stratex International Plc, The Crown Estate, ThermoFisher Scientific, Vitacress Conservation Trust

Policy Partners: House of Commons Scrutiny Unit, DEFRA

Internationalisation Partners: Alfred Wegener Institute for Polar and Marine Research (AWI), Australian National University (ANU), Bermuda Institute of Ocean Sciences (BIOS), Brown University, ETH Zurich, Geomar- Helmholtz Centre for Ocean Research, Keil, Geosciences Montpellier (Universite Montpellier) , GFZ Potsdam, IFREMER - French Research Institute for Exploitation of the Sea, IMAS University of Tasmania, Institut de Physique du Globe de Paris (IPGP), Japan Agency for Marine-Earth Science and Technology, Lamont-Dohery Earth Observatory of Columbia University, MARUM- Universitat Bremen, Max Planck, MIT, National Institute for Water and Atmospheric Research (NIWA) , Princeton, Stockholm University, UCLA, University Bergen, University of Hawaii, University of Miami, University of Michigan, University of Oslo, University of Otago, University of Western Ontario, Victoria University of Wellington, Woods Hole Oceanographic Institute, Yale University, Scripps Institute of Oceanography

Summary:

The Southampton Partnership for Innovative Training of Future Investigators Researching the Environment (SPITFIRE) creates an innovative multi-disciplinary experience for the effective training of future leaders in environmental science, engineering, technology development, business, and policy. The funding provided by NERC will be combined with matching funds from across the partnership to support an annual cohort of up to 30 students working within excellent research teams hosted across the University of Southampton and the partner Research Organisations.

Rationale:

A knowledge-based economy can only maintain its position in a global society if it is at the forefront of scientific and technical expertise. Making informed responses and finding solutions to challenges as varied as climate change, natural hazards, biodiversity loss, energy generation and the search for strategic mineral resources relies on developing a supply of highly-qualified and well-educated

young scientists and technologists. Simultaneously, new technologies and techniques are driving rapid expansions in environmental data generation. Effective management, processing and synthesis of this information will be both a major challenge and opportunity for 21st century environmental science. SPITFIRE aims to equipping the next generation of scientific leaders with the skills they will need to tackle these challenges.

The partnership:

SPITFIRE brings together ~550 PhD supervisors from 10 leading science and engineering groups within the University of Southampton and nine major UK research organisations based in the South of England, the National Oceanography Centre (NOC), British Antarctic Survey (BAS), Plymouth Marine Laboratory (PML), Marine Biological Association (MBA), Sir Alister Hardy Foundation for Ocean Science (SAHFOS), Centre for Ecology and Hydrology (CEH), Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Natural History Museum (NHM), & HR Wallingford (HRW), with over 25 Industrial and Science Policy partners and 30 premier international Universities and research centres to create an innovative, deliberately broad and multidisciplinary partnership.

SPITFIRE aims:

To produce effective scientists for the 21st century by skilling them to exploit and develop new technologies that are revolutionizing environmental research and are revealing hitherto unknown connections in the environment that provide quantitative estimates of risk and better inform decision making.

To broaden individual horizons, build a cohesive student community and enable students to experience research in world-class national and international scientific institutions, including placement opportunities with our internationalisation partners.

To provide industrial/commercial internship and science policy placement opportunities with our Industrial, CASE and Policy partners that will enhance entrepreneurship, business, policy development and public engagement with science skills, thus benefitting the research and career prospects of our students.

Website: <http://www.spitfire.ac.uk/>

Twitter: @SPITFIRE_DTP

15. Adapting to the Challenges of a Changing Environment (ACCE)

Number of Notional Studentships Awarded: 14

Host Partners: University of Sheffield, University of Liverpool, University of York & The Centre for Ecology and Hydrology.

CASE Partners: Applied Biomathematics (USA), Botanical Society of the British Isles (BSBI), British Trust for Ornithology (BTO), Buglife, Butterfly Conservation, CEFAS, Chartered Institute for Ecology and Environmental Management (CIEEM), Chester Zoo, Environment Agency, Flamingo Land, Food and Environment Research Agency, Forest Research, Freshwater Biological Association (FBA), JNCC, Moors for the Future Partnership (MFF), National Association for Cider Makers (NACM), National Museums Liverpool, Natural England, Norwegian Institute for Nature Research (NINA), Parsons Brinckerhoff, Proforest, Royal Botanic Garden Edinburgh (RBGE), Royal Horticultural Society (RHS), Royal Society for the Protection of Birds, Royal Society of the British Isles, Royal Zoological Society Scotland (RZSS), Scottish Natural Heritage (SNH), SERCON- The Stable Isotope Company & United Research Facilities (URS)

Summary:

ACCE is a partnership of the Universities of Sheffield, Liverpool and York, and The Centre for Ecology and Hydrology (CEH) providing doctoral training in the biological component of the natural environment and related disciplines. Our departments and institutes are ranked among the best in the UK for biological and environmental sciences, and our students will be supervised by some of the best scientists in our research themes with leading international reputations. In addition, the ACCE partnership will collaborate with more than 30 external organisations, including business, policy-makers, and public and third-sector organisations

Our research strengths and PhD projects are grouped into four research themes:

- (1) Securing ecosystem services and environmental resources
- (2) Predicting and mitigating impacts of climate change
- (3) Understanding the dynamics of biodiversity
- (4) Investigating mechanisms of evolutionary change: genes to communities

Our vision is to develop motivated, confident and multi-skilled PhD students, undertaking cutting edge research, tackling environmental science questions of global significance. Our PhD students will leave with the capacity to move between NERC scientific fields, and other areas, relating the science they undertake to business, policy, public needs, and society. While ACCE has biology as its core, this field acts as the hub within a network connecting a range of related disciplines. Thus, our students will train in a multidisciplinary environment that brings together biologists, mathematicians, engineers, geoscientists, analytical chemists, archaeologists and policy experts.

Our training and PhD research is well placed to address the environmental science skills gaps identified in NERC's skills review (2012) and we have large numbers of staff with expertise in all of the '15 most wanted skills' identified by NERC.

Some of the highlights of our training approach include:

- Whole-cohort training activities where ACCE students from all institutes come together.
- Cross-institutional postgraduate activities and committees, peer-to-peer training, and online resources that foster a strong postgraduate community.
- Training within a coherent multi-disciplinary environment. Our PhD students are exposed to disciplines in the environmental and biology subject areas with relevant and related fields in mathematics, engineering, geosciences, analytical chemistry, archaeology and policy.
- Opportunities for engagement with CASE partners in training and placements.
- Bespoke and flexible training combined with compulsory activities to ensure each student has the most appropriate training according to their individual needs.
- Enhanced training opportunities in qualitative skills, 'omics and field methods as well as enhanced professional skills such as entrepreneurship, policy, careers, and science media.

Website: <http://acce.group.shef.ac.uk>

Twitter: @ACCE_DTP