



IAPETUS2

Doctoral Training Partnership

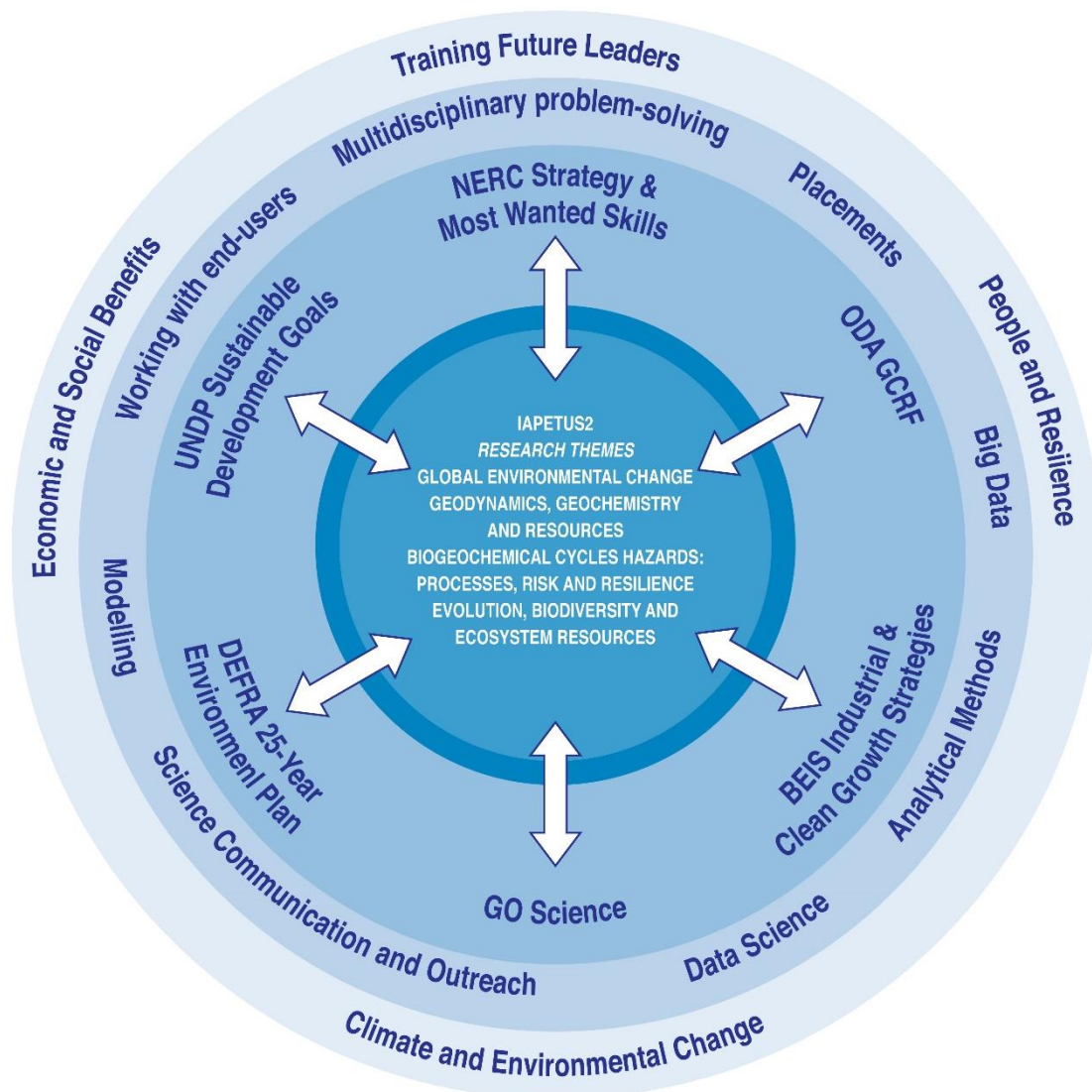
Handbook for Students and Supervisors

2022-23



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I. Introduction

Welcome! You are part of the IAPETUS2 NERC Doctoral Training Partnership (DTP) and thus one of the 240 or so students funded nationally each year to be trained in environmental research by the Natural Environment Research Council. NERC set up its 15 DTPs in 2014 following two major reviews of the skills that employers in the sector most desired. The second of these, the “Most Wanted II” report suggested 15 core areas where greater capacity is required (Figure 1). Even if your core research area is not directly in one of the thematic areas listed, you will undergo some training in these skills during your time with the DTP.



Figure 1 The “Most Wanted Skills” by employers in the environment sector according to the *Most Wanted II* report commissioned by NERC (<https://webarchive.nationalarchives.gov.uk/ukgwa/20220214165229/https://nerc.ukri.org/skills/postgrad/policy/skillsreview/2012/>).

IAPETUS2 is part of the second phase of 17 NERC DTPs and will have somewhere between 16 and 25 students per year. You have already been successful in competition with hundreds of applicants to obtain a place in the DTP. We hope your success will continue and you will have a rewarding and enjoyable time with us while achieving your PhD.

2. What is IAPETUS?

IAPETUS(2) is not an acronym! Our name comes from the ancient ocean that separated southern Scotland from northern England in the Cambrian period, and more directly, the Iapetus Suture Zone that brought Scotland and England together in the Silurian, about 430 million years ago (Figure 2; see also earthwise.bgs.ac.uk/index.php/lapetus_Suture_South_of_Scotland). In turn, Iapetus is named after the Greek Titan Ἴαπετός, the son of Uranus (the sky) and Gaia (the Earth), and father of Prometheus (who gave us fire, and thus technology, as the legend would have it). For all these reasons, we felt it was a good name for a partnership bringing together universities and institutions in Scotland and England.

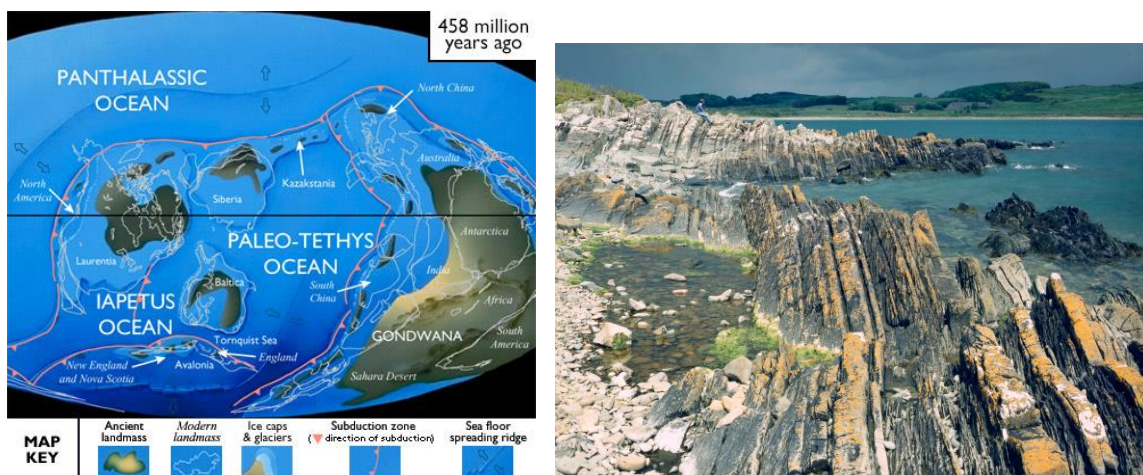


Figure 2 Map showing the location of the Iapetus Ocean around 458 million years ago (http://paleoportal.org/kiosk/sample_site/period_15.html) and rocks from the Iapetus Suture zone: Steeply inclined, thinly bedded turbidite strata of the Cargidown Formation (Hawick Group) exposed at Brighouse Bay [NX 632 453] to the south of Borgue. BGS image P220426 (© NERC, all rights reserved). (Stone 2012, *Open University Geological Society Journal* **33**, 29-36)

The partnership is made up of the universities of Durham, Glasgow, Heriot-Watt, Newcastle, St Andrews and Stirling, together with the British Antarctic Survey (BAS), the British Geological Survey (BGS) and the Centre for Ecology and Hydrology (UKCEH). For administrative purposes, Durham is the lead institution, but all of the partners play an equal role in the DTP. By bringing together the expertise from all of these institutions, we can provide projects across a very wide range of topics, based on five main themes:

- Global Environmental Change
- Geodynamics-Geochemistry-Resources
- Biogeochemical Cycles
- Hazards: Processes-Risk-Resilience
- Evolution-Biodiversity-Ecosystems

Your project may focus on one of these themes, or several of them. Multidisciplinary working is a core idea of the NERC “Most Wanted” remit. We also have several hundred academic and support staff who can contribute to training across all of the topics considered vital by NERC.

3. How does IAPETUS2 work?

For most of the time of your PhD, you will be guided by your project supervisors. You will have a nominated lead supervisor at your home institution, who will be in charge of the academic and administrative processes for your PhD, and responsible up to the point where you complete your thesis (submit, have the viva and produce the final version). Because each of the institutions' processes differ, we have not attempted to duplicate any information here relating to the process of carrying out the PhD – please refer to the documentation provided by your own institution. A novel aspect of IAPETUS2, and one that further encourages multidisciplinary working, is that you will all have at least one supervisor who is from a different partner institution. In some cases, this will enable you to gain experience of working in other laboratories or teams, but we expect each project to have an organic nature, so that it is up to you and your supervisory team how you work together as a group.

Each of the partner institutions has a lead academic, who is responsible for coordinating the local aspects of the PhD with those relating to the DTP, and an administrative contact. Prof. Philip Stephens from Durham is the overall Academic Director, and Jennifer Gadouleau is the DTP Manager. The full list of contacts is given on the next page. In case of changes, the most up to date version of this list can be found on the website (<http://www.iapetus2.ac.uk/>).

If you have any queries about your PhD, you should normally follow the procedures within your home institution (via supervisors or Directors of Postgraduate Studies). Any queries for IAPETUS2 can be directed either to your institutional contact, or to Jennifer Gadouleau. We are always willing to respond to suggestions about how we can best support you.

NERC supports your training which includes carrying out your PhD research, but it also considers that other training that will equip you to be an environmental scientist, to be a vital element of the process. **For that reason, it is a condition of your support that you attend designated training events through your 3.5 years with us.** We try to be as flexible as possible about dates, and to publicize them well in advance, but we appreciate that there will always be some reasons not everyone can make every event. If in doubt, please contact the academic lead in your institution or Phil Stephens as soon as you know that there may be an issue with any scheduled training event.

There are student representatives chosen each year by the students during the annual conference. The representatives may contact you from time to time to organize events or get feedback, but feel free to raise any issues with them you think would benefit from wider discussion. From time to time, you should receive e-mails that allow you to contact all of the other IAPETUS and IAPETUS2 students.

List of Contacts

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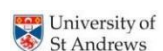
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4. Training structure

As with many universities, we use the Vitae Researcher Development Framework (RDF: Figure 3) to structure training within IAPETUS2. This approach ensures that it is also compatible with the training provided for you at institutional level. The RDF is made up of four components or “domains”:

- A. Knowledge and Intellectual Abilities
- B. Personal Effectiveness
- C. Research Governance and Organization
- D. Engagement, Influence and Impact.

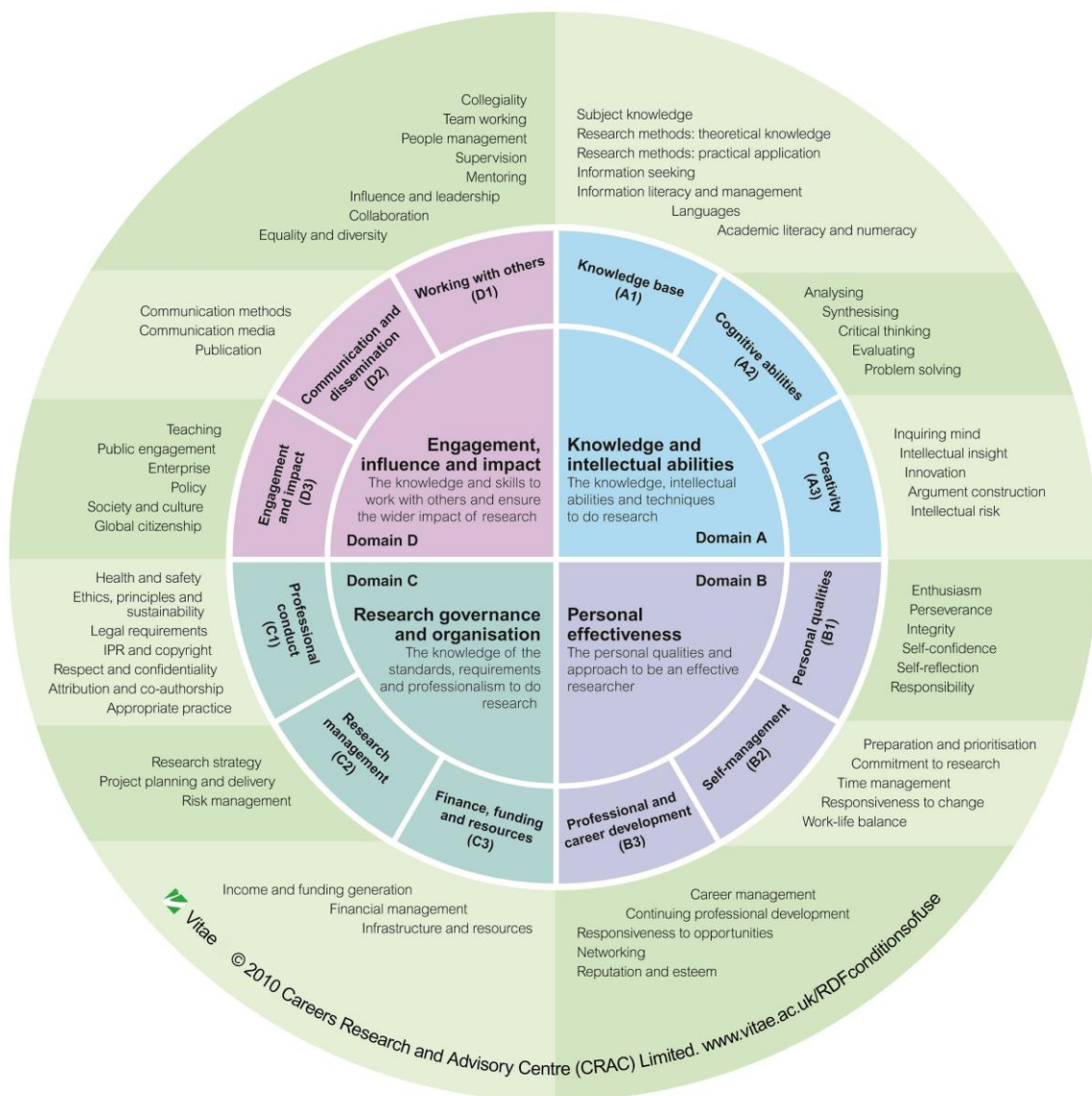


Figure 3 The Vitae Researcher Development Framework (<https://www.vitae.ac.uk/vitae-publications/rdf-related/researcher-development-framework-rdf-vitae.pdf/view>).

The Vitae website is full of invaluable information for developing your profile and skills. If you have not already done so, have a look at the planner at

<https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework-planner>, which provides guidance about how you can develop your skills across the four areas noted above. Note, however, that not all of the IAPETUS2 partners provide institutional logins to the site.

It may seem strange at this stage that only one quarter of your training is directly focused on the academic elements of research. However, the other three components are vital because they help you to carry out your research and publicize it effectively, and also provide training in the skills required for future employment in academia or elsewhere. As noted above, NERC is responsible for training people to work in the environmental sector overall, not just in academia. It is worth considering the various pathways your career could take, and ensuring that you are flexible about the skills you acquire during your time with IAPETUS2. Even if you are currently sure about an academic career, you never quite know where your research

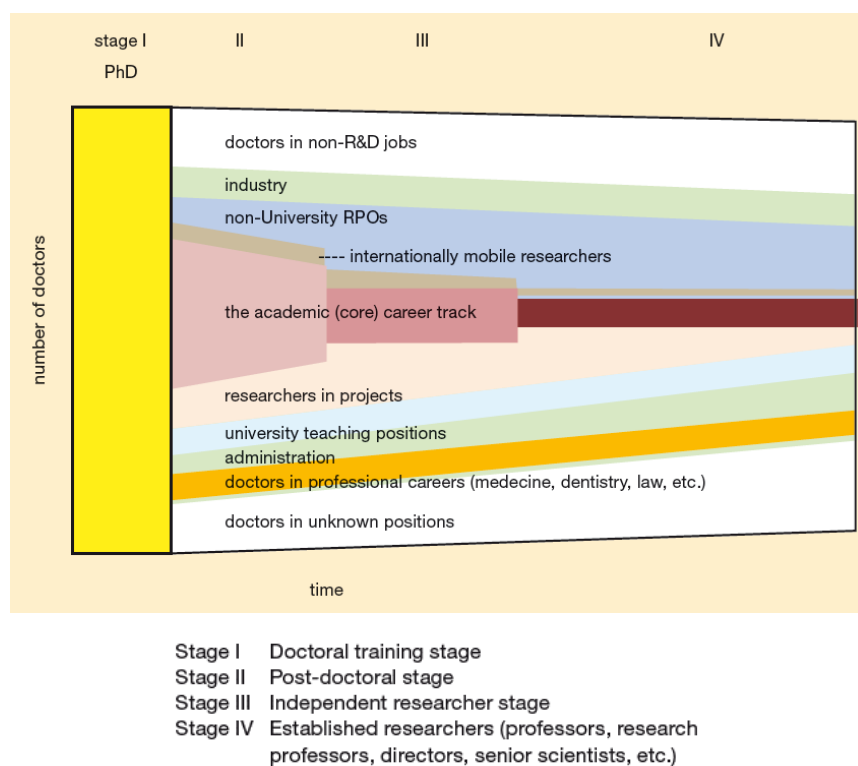
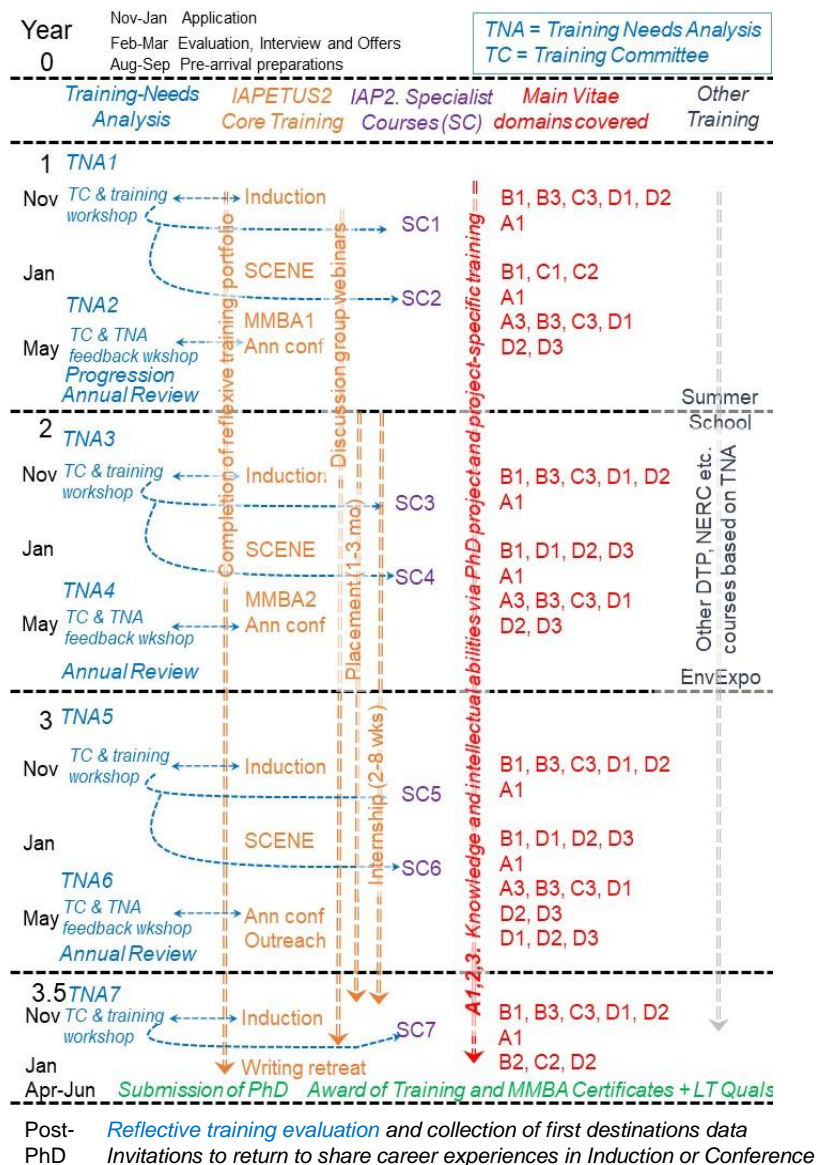


Figure 4 ESF (2009) Research Careers in Europe Landscape and Horizons. Width of the different sectors in this figure is based on data from Finland, but values are broadly similar across Europe; the Thrift report 2009 suggested that the UK figure for the stage I-II transition is c.50 %.

The IAPETUS2 training process is outlined in Figure 5. You should expect to carry out more training activities during the first year of your PhD programme than subsequent years, and the Training Needs Analysis (TNA) carried out with your supervisors at the start of your PhD is a fundamental first step in this process. The specific details of the TNA process varies between the partner institutions, but NERC require us also to have a centralized process, which we implement at Durham. Further details on this process will be circulated separately. **There will be further discussion during the IAPETUS2 Induction meeting, and individual TNAs will be circulated to the IAPETUS2 Training Committee by the Academic Director, so that we can evaluate which parts can**

be most effectively carried out through the IAPETUS2 partnership. Because there is no training quota for projects from different disciplinary areas, it is likely that the training needs will change from year to year.

In the second and subsequent years of your PhD, you should expect to be more directly focussed on your research project. However, the nature of your project, or your career aspirations may change as you progress, so you should carry out regular reviews of your training needs, not less frequently than once a year. After the end of the first year, you should also consider going on a placement to an external organization, which will provide yet more experience and transferable skills, and help you on the road to employment.



5. Postgraduate Certificate in Environmental Research Methods

The PG Cert in Environmental Research Methods is a standalone accreditation designed specifically for IAPETUS2 students. The premise behind the certificate is that it recognizes that the DTP-funded model of a PhD requires you to carry out a significant amount of training as well as carrying out the research for and writing of your thesis. **NERC recognize this aspect by funding you for longer than the standard three-year period of a PhD.**

The PG Cert is a 60-credit course that you are enrolled on at Durham University for the duration of your PhD. More details of the procedures will be circulated separately, but the course is made up of four, 15-credit modules. The modules are:

GEOG 56115	Perspectives on Research in Environmental Science
GEOG 56215	Becoming an Effective Environmental Researcher
GEOG 56315	Governance and Organization of Environmental Research
GEOG 56415	Engagement, Influence and Impact of Environmental Research

They are designed to map directly on to the four Vitae domains, so that Perspectives on Research in Environmental Science relates to training in domain A: Knowledge and Intellectual Abilities; Becoming an Effective Environmental Researcher to training in domain B: Personal Effectiveness; Governance and Organization of Environmental Research to training in domain C: Research Governance and Organization; and Engagement, Influence and Impact of Environmental Research to domain D: Engagement, Influence and Impact.

Evaluation for the PG Cert is designed to be straightforward. As you recognize your training requirements using the TNA, you arrange for appropriate training to take place, and request for the training to be allocated a weighting. Once complete, you will be asked to upload evidence of having undertaken the training, to enable you to complete your portfolio. If the training course contained formal evaluation, you will be able to upload this information. Otherwise, you will be asked to write a short, reflective evaluation of the course, to demonstrate you have met the learning objectives of the relevant module in the PG Cert.

6. “Mini-MBA”

NERC place significant emphasis on its interface with business (see for example the NERC Delivery Plan 2019 at <https://www.ukri.org/files/about/dps/nerc-dp-2019/>), not least because most of its funding comes via the Department for Business, Energy & Industrial Strategy (BEIS). While a full MBA programme is clearly beyond the scope of the DTP training, we have worked in collaboration with the Durham University Business School to put on entrepreneurship training. This compulsory training takes the form of two, week-long workshops to be carried out in each of the first and second years of your PhD (with some flexibility for later in case of clashes with fieldwork or lab time). These courses will also benefit those keen on developing academic careers, for example by thinking of ways of pitching grant proposals, or developing impact with end-users. They will also strengthen team-working and multidisciplinary experience, which are key elements of the skills NERC want to encourage amongst environmental scientists.

7. Programme of Events

In each of the first three years as an IAPETUS2 student, you are expected to attend **three** core events:

- i. **The Induction meeting**, usually in mid-November. The location of this meeting will change from year to year, being rotated among partner institutions;
- ii. **The residential Research Training Week**, usually in the first half of January, at the Scottish Centre for Ecology and the Natural Environment (SCENE, part of the University of Glasgow), on (the bonny banks of) Loch Lomond;

- iii. **The Annual Conference**, usually in the first week of May. The location may be at one of the partner institutions, or at an external venue;

as well as the “mini-MBA” training in years 1 and 2.

The purpose of each of these compulsory core events is twofold. First, they help build the sense of being part of the DTP and a member of all cohorts of fellow students where you can share advice and experience among students at different stages of their work. Secondly, the induction meeting and research training week will be used to provide specific training, and will vary according to the stage you are at in your PhD. For example, the first years focus on research planning, problem solving and developing numerical skills at SCENE, while the second and third years look at thesis writing and science communication (amongst other things). Working with students across the whole of IAPETUS2 will help you to develop your academic networks and feed into the multidisciplinary elements of your training as a DTP student. The events from a former academic year are given in the table below. Other training courses are optional, based on when the training might be most effective in relation to the overall progress of your research. Take note that some courses may only be available in certain years of study so make sure you do not miss those most useful to you.

Dates	Course	Location
21 st –25 th October 2019	Advanced Statistics in R	SCENE, the Scottish Centre for Ecology and the Natural Environment, a field station of the University of Glasgow
20 th –21 st November 2019	IAPETUS2 Induction	Durham University
16 th –20 th December 2019	Meta-Analysis	St Andrews University
13 th –17 th January 2020	SCENE Training Event	SCENE
20 th –24 th April 2020	Introduction to Modelling in Python	Durham University
13 th –14 th May 2020	IAPETUS/2 Student Conference	Edinburgh Zoo
8 th –12 th June 2020	Mini-MBA (mandatory for first year students, students from other cohorts welcome to attend)	Durham University
Early July 2020	Outreach Training (geared towards 2 nd /3 rd year students)	Durham University

As BGS is one of the partners, IAPETUS students can also apply to participate in BGS training courses. See details of [The BGS GeoSchool](#). Similarly for UKCEH courses, details can be found at <https://www.ceh.ac.uk/training>. From time to time, NERC support other advanced training courses, although as of now there are none scheduled. Training may be available at any of the partner institutions by arrangement.

We will canvas your opinion for ideas for future training events at various points during the year. However, please contact Phil Stephens at any time if you have suggestions for other events that might be useful to all IAPETUS2 students. There are also a number of NERC and other training activities, which will be circulated by e-mail during the year. Some of these will

have funding available, but for others you may need to use part of your Research Training Support Grant (RTSG).

8. Your research and support for it

Each IAPETUS2 project is allocated an RTSG that was proposed by your supervisor. This sum will be between £6K and £10K in total (NOT per year) for a standard studentship, and at least £1K pa more for a CASE studentship. You should discuss with your supervisory team how best to allocate these funds, and consider the related financial management as part of the development of your transferable skills. Remember that the “T” in RTSG stands for training, so that you should ensure that the training needs you may have are covered in this process. The management of the RTSG will be through your home institution, which will pay you directly, and then your institution will request a refund from Durham, where the IAPETUS2 grant administration is carried out. Please note that there are some restrictions on what you can spend your RTSG on, mostly constrained by the general UKRI policy. If you are in doubt, consult the Research Training Support Funding Policy document, which can be found on the IAPETUS2 website. This page also has a link to the **UKRI Harmonized Doctoral Training Grants Terms & Conditions**, which is the document NERC uses to manage the grant that supports your training. If these web sites do not answer your questions then contact Phil Stephens for further guidance.

Note that once your RTSG allocation has been used up, there is no scope to apply for more from IAPETUS2, other than in **exceptional circumstances**. Simply running out of funds is not considered as exceptional! If you feel that you have reason to request additional funds, you should speak to the Academic Lead from your own institution in the first instance, who will advise on how best to proceed, and any documentation you should provide for your case is to be considered. Any unspent funds from your RTSG will be returned to the DTP to support the research and training of other students, so make sure that you claim for all that you are entitled to in a timely manner, and before you submit your thesis.

It is often a good idea to apply for additional support to other organizations, such as learned societies or charities for things such as conference attendance. If you are successful, you can add information about these successes to your CV as further evidence that you are able to secure competitive funding, which will generally be of great benefit for job applications!

Similarly, teaching and demonstrating can be invaluable for developing your skills, and providing additional funds. There are limits to the amount of teaching you can be asked to do, which can be found in the RCUK document mentioned above, and may be constrained by your home institution.

A further advantage of being part of IAPETUS2 is that the different partners have very significant resources and support for research. Necessary collaborative arrangements to use facilities elsewhere will normally have been set up at the stage where your project was proposed by your supervisory team. However, you may find that other things are available (or become available), and you should discuss options with your supervisors and the academic lead from your own institution.

9. Placements

After you have been through the year one progression review for your PhD, you may apply to go on a placement with an external organization, supported by the DTP. It would be most useful to have a placement during years 2 or 3 of your PhD, and you must begin the placement before the end of your PhD programme i.e. 3.5 years after the start date of your PhD (or as adjusted for students working part time, or following IAPETUS2-approved temporary leave of absence). These placements are intended to give you experience working in industry or in a policy context, and thus broaden your experience. They are wonderful opportunities for increasing your employability, whether or not you choose an academic career.

Our placement scheme has two different opportunities:

- a. a responsive mode that supports you to design your own placement, which you tailor to your specific research, training and career development needs. Suitable placements should be with a non-academic organization, using or developing skills related to the your PhD research, however placements would not involve conducting research work that would be included in the PhD thesis; and
- b. an end-user-driven mode that provides opportunities for end-user partners to develop and advertise specific projects available to IAPETUS2 students.

Students will normally be expected to take up at least one of these options during the period in receipt of stipend for their PhD study. A student will not normally be supported to take up more than two placements from either the NERC National placement or the IAPETUS2 placement schemes. A placement is typically between one and three months duration, although in very exceptional circumstances, placements of up to six months will be considered for scheme (a). You will still receive your stipend for your living expenses, as well as some funding for additional travel and accommodation costs. The time taken on placement is added to your PhD programme and thus extends the time until submission of your thesis is required. Therefore the placement does not reduce your total time for training, research, thesis preparation and submission.

Full details of the IAPETUS2 placement procedure are on the website. Other, national schemes will be announced from time to time, and you are encouraged to apply for them if they are appropriate to your interests.

10. Finding out more

Up-to-date information can be found on the IAPETUS2 website: <http://www.iapetus2.ac.uk/>. If in doubt, use the Contacts page to find out who to speak to in your institution, and don't hesitate to get in touch.