



The NERC Training Strategy

Aims

The four aims of the NERC Training Strategy are:

- a) To recognize that postgraduate training is a crucial first step in the development of a research career and that it is important that early-career researchers have the opportunity both to pursue their own lines of enquiry and to learn how to do so.
- b) To link training opportunities, particularly at doctoral level, to high-priority, high-quality research.
- c) To ensure that we identify skills priorities and gaps within our research base, both now and in the foreseeable future, and reflect this in the training we support.
- d) To ensure that the needs of employers for people with particular skills are taken into account in the training we support.

Objectives

In delivering the aims above, we have identified seven objectives:

- Objective 1: To fund doctoral training in research that is curiosity-driven (aim a).
- Objective 2: To deliver training opportunities that can be targeted on specific science priorities and skills gaps (aims b, c).
- Objective 3: To help address the needs of policy makers, advisory bodies and regulators by providing opportunities for environmental researchers to acquire the skills and/or knowledge to work in this sector (aims c, d).
- Objective 4: To help address the needs of employers, both by ensuring that individuals have the wider skills required by them and by encouraging collaborative projects with commercial and other organizations (aims c, d).
- Objective 5: To promote training opportunities that enable individuals to acquire the skills to work effectively on the interdisciplinary research needed to deliver the NERC Strategy (aims b, c, d).

Objective 6: To promote training opportunities that enable people to acquire strong quantitative skills (aims b, c, d). There are two aspects of this:

- i. to further encourage individuals from maths/physics/chemistry/engineering backgrounds to undertake environmental research; and
- ii. to improve the numerical skills of those already doing environmental research.

Objective 7: To promote training opportunities that enable people to acquire both good field/laboratory skills and good computing/statistical skills (aim b, c, d).

Two Key Funding Streams

The seven objectives identified above will be delivered through a combination of *responsive training* and *focussed training*.

Responsive training: This is postgraduate training where the topic is chosen by the student/supervisor and can be drawn from any part of NERC's remit. In the same way that responsive mode funded research is important, this training plays a key part in maintaining the breadth and diversity in our research base and in ensuring that as a community we are responsive to new ideas. Whilst responsive training provides individuals with specialist and general skills that are valuable both to our community/the UK economy more generally, the award of support is not based on the delivery of particular specialist skills, e.g. to meet a skills gap/need.

Focussed training: This is postgraduate training that ensures we provide individuals with particular, specialist skills that are linked to our strategic priorities or to the skills needs identified by our community. Reviewing future skills needs and gaps and addressing these is important, particularly as science changes and develops and becomes increasingly interdisciplinary.

Training Schemes

The total NERC spend on postgraduate training averages £30m pa. This figure excludes fellowships which are considered as research funding rather than training. Of this, the largest proportion is spent on PhD training. This represents a rigorous and proven first step on a research career.

However, doctoral training alone will not deliver against all our objectives and NERC will therefore provide a level of support for other mechanisms, aimed at ensuring we deliver the seven objectives set out above.

Training Strategy Objective	Significant mechanisms
1 - Supporting training proposals that encourage researchers to develop their own lines of research, not specifically linked to strategic needs or to a skills gap	Responsive PhDs
2 - To deliver training that is focussed on an identified priority or skills gap	Focussed PhDs Short courses
3 - To help address the needs of policy makers, advisory bodies and regulators	Focussed PhDs
4 - To help address the needs of employers	Focussed PhDs
5 - To train individuals who can work effectively on the interdisciplinary research needed to address the NERC Strategy	Focussed PhDs
6 - To train environmental researchers with strong quantitative skills.	Vacation bursaries (focused training) Focussed PhDs Short courses (focused training)
7 - To train the number of environmental researchers who have both good field/laboratory skills and good computing/statistical skills	Focussed PhDs Short courses (focused training)

Responsive Training

PhD Studentships

The majority of NERC PhD studentships are responsive i.e. their funding is not *specifically* focussed on priority skills needs or scientific priorities. Research topics are decided by supervisors/the individual student. Responsive studentships provide individuals with skills and knowledge spanning the whole of the environmental research base.

In view of the key role it plays in developing people with a diverse range of skills and in encouraging researchers to develop their own ideas, responsive training is likely to represent the greater part of NERC's doctoral training effort and the majority of that effort will be at the doctoral level.

NERC will allocate responsive studentships through the introduction of a more open competition with a strong emphasis on partnerships: Doctoral Training Partnerships (DTPs).

Focussed Training

Focused PhD Studentships

Only a small percentage of all current PhD studentships can be defined as 'focussed', i.e. there has been some form of intervention intended to ensure that the research activity covered meets a defined skills need. These are primarily the Open CASE studentship competition, interdisciplinary studentships jointly funded with ESRC and cross-council research programmes, and those studentships which have been attached to Research

Programme and National Capability funding.

Focussed PhD studentships are important in the delivery of objectives 2-7 of this Training Strategy, where there is a greater need to deliver specific skills. The extent to which this is required may change over time; it will be determined by evidence specifically gathered for the purpose, such as the Skills Review (Most Wanted Report): which is aimed at identifying the priority needs of our community over the short-medium term. This exercise will be repeated – albeit more ‘light touch’ – every five years or so. Theme Action Plans and National Capability Action Plans will also be an important way of identifying areas where there is a need for an increased level or density of skills in the short-medium term and will be considered annually.

Focused training will primarily be delivered through competitions in priority areas as and when there is a recognised need.

Short Courses

Short courses are a powerful way of improving skills of individuals (e.g., in statistics, field skills, etc or in the transferable skills identified by the Roberts Review) and of developing skills more quickly than other mechanisms. This makes them important for early response to priority skills gaps identified through the Skills Review, Theme Action Plans and National Capability Action Plans. The target for these courses is NERC-supported researchers in Universities and Research and Collaborative Centres. The potential providers are both within Universities and NERC Research and Collaborative Centres. Funding will be restricted to areas identified as skills priorities.

Vacation Bursary Scheme

A recognised major skills gap in environmental science is the shortage of people with quantitative skills. NERC will encourage more students undertaking quantitative degrees (maths, computing, physics, engineering etc.) to consider a research career in environmental science, through the pilot of a Vacation Bursary Scheme (2010 to 2012).

Vacation bursaries provide funding for a ten-week placement to allow an undergraduate student the opportunity to work in a thriving research environment. Similar schemes are already funded by Nuffield, EPSRC¹ and BBSRC², but with limited or no targeting. NERC scheme will focus on giving good students from specific departments (such as Maths, Physics, Chemistry and Engineering) the opportunity to do an environmental research placement. Funding would not be available to enable students to undertake a placement in their home department; eligibility would be restricted to students who are not in their final year.

CASE Awards

Both responsive and focussed PhD studentships can have a CASE element. NERC CASE awards are an important means of promoting partnerships and collaboration with public or private sector organizations. They are also a potentially valuable way of enabling the

¹ Engineering and Physical Sciences Research Council

² Biotechnology and Biological Sciences Research Council ...

student to gain experience outside the academic environment. They are used by government as a measure of the extent to which the Research Councils are meeting wider objectives.

NERCs current mechanisms for case awards are limited to (a) requiring a proportion of responsive studentships to be CASE, however these have been allocated, so that – for example – a proportion of algorithm awards have been made on the basis that the research organization will then find a CASE partner, and (b) running an focused Open CASE competition to allocate a small number of awards.