

Careers in Academic Research

Life Sciences Careers Conference, Royal Veterinary College

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BBSRC, Innovation and Skills Group

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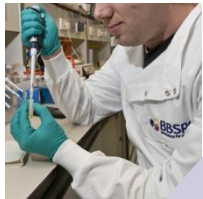
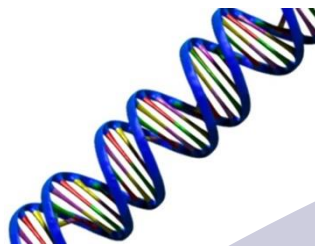
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www.bbsrc.ac.uk



[@Rob_Hardwick_](https://twitter.com/Rob_Hardwick_)

My career so far...



2002 BSc
Biological
Sciences
(Birmingham)

2003 MRes
Molecular and
Cellular Biology
(Birmingham)

2007 PhD
Mammalian
Genetics
(Leicester)

2006-07 Medici
Technology
Transfer (whilst
writing up)

2007-2012
Postdocs

2007-09
Cardiovascular
Genetics

2009-11 Genetics
of immunity
(Leicester)

2011-12 Germline
mutation
processes
(Sanger)

2012-present
BBSRC
Innovation and
Skills Manager

Innovation & Skills
Group

- Managing Doctoral Training Partnerships
- Postdoctoral researcher strategy
- Industrial training strategy

What does BBSRC do?



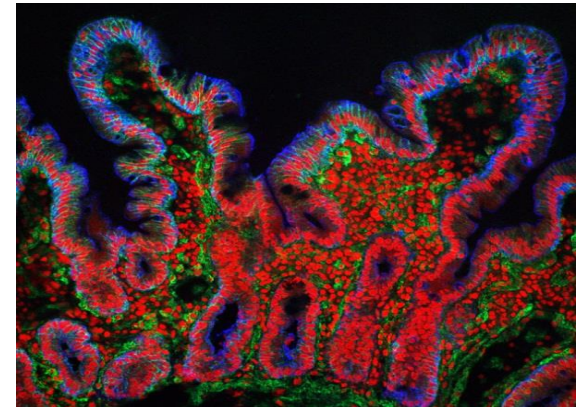
- Fund **world-class bioscience research** in UK Universities and Institutes
- Fund **bioscience training and skills** for the next generation of bioscientists
- Drive the widest possible **social and economic impact** from our bioscience in industry, policy and public goods
- Promote **public dialogue** on bioscience



Agriculture and food security

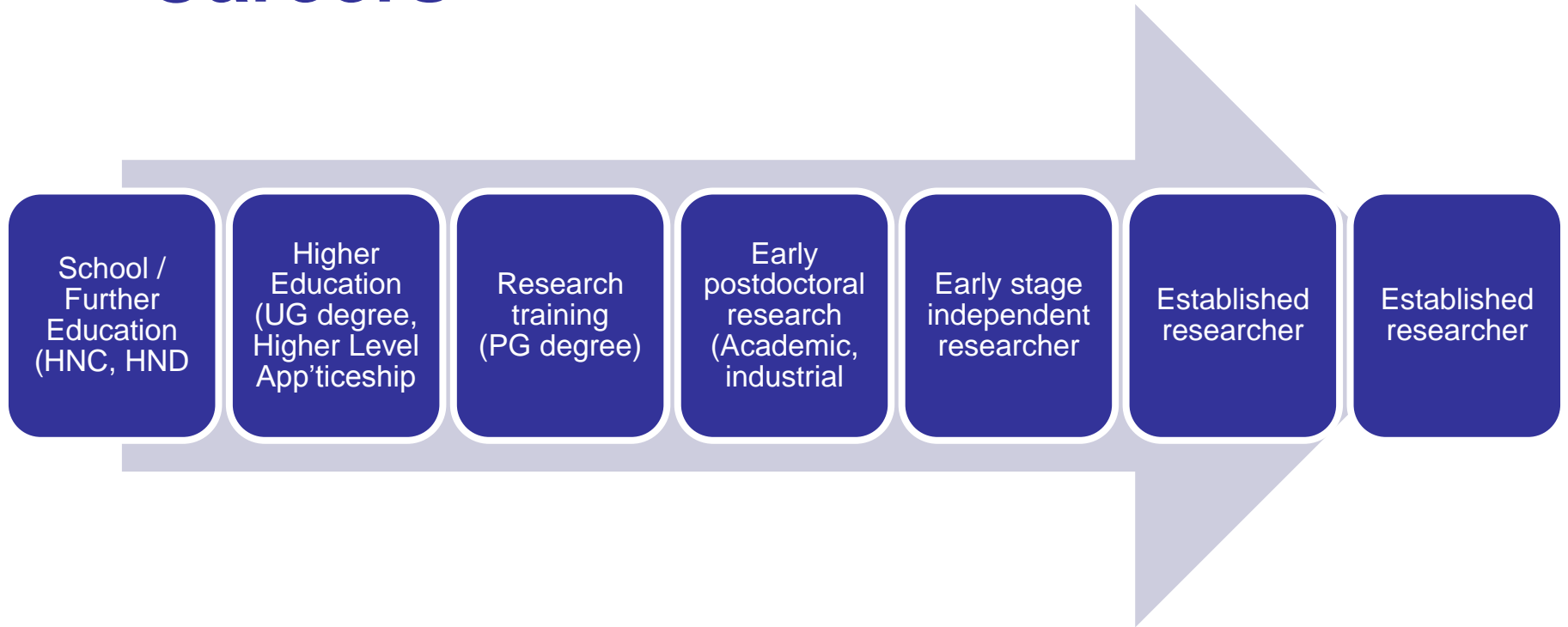


Industrial biotechnology and bioenergy



Bioscience for health

Academic Research Careers

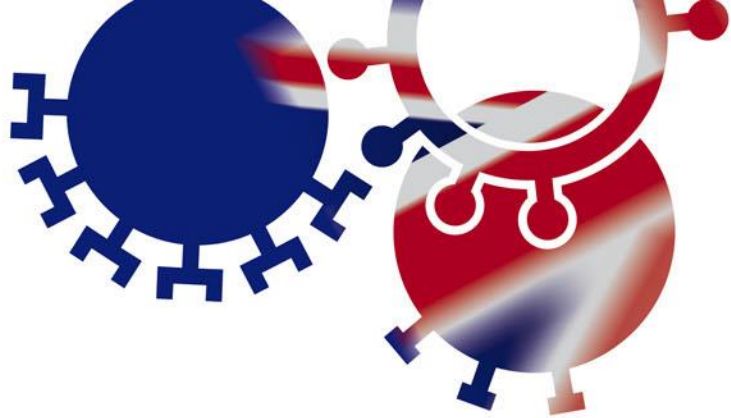


Traditionally, there was a linear academic career pathway, but this is changing...

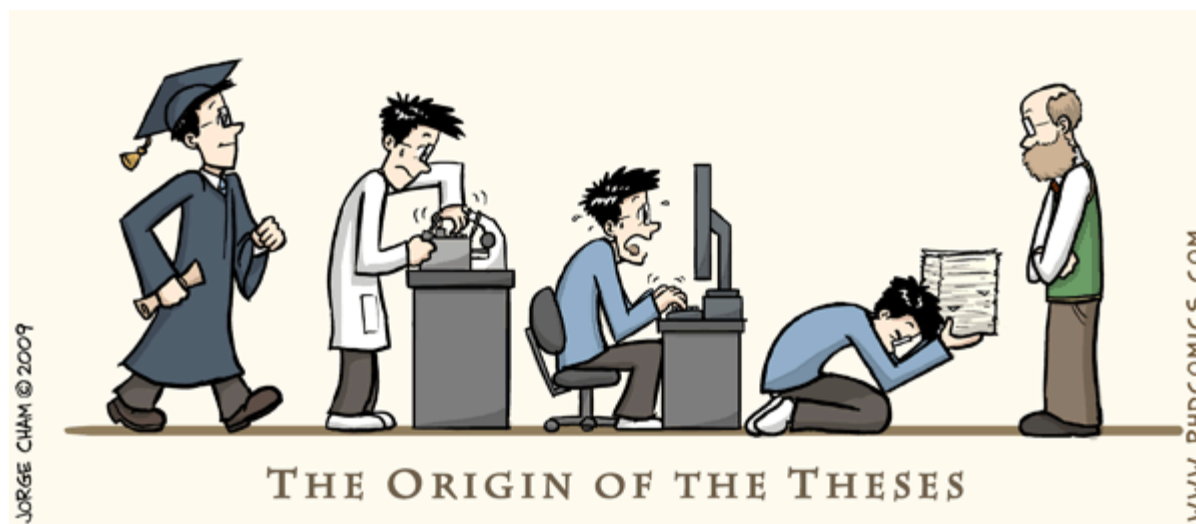
Is a PhD necessary?

- Research technicians / assistants do not require a PhD
 - Perform experiments
 - Lab management
 - Equipment maintenance
- Future research leaders require a PhD





PhD Training Opportunities



Is a PhD right for you?



Academic achievement

- Good degree / Masters degree
- Research experience – year in industry, REPs, etc.

Skills and competencies

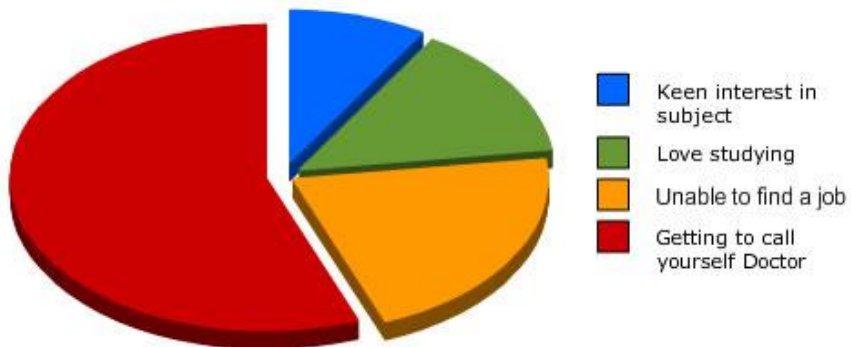
- Communication – can you defend ideas in debate?
- Analytical / problem-solving
- Maintain focus

Motivation

- A passion for your science niche
- Flexibility on location

Reasons not to do a PhD?

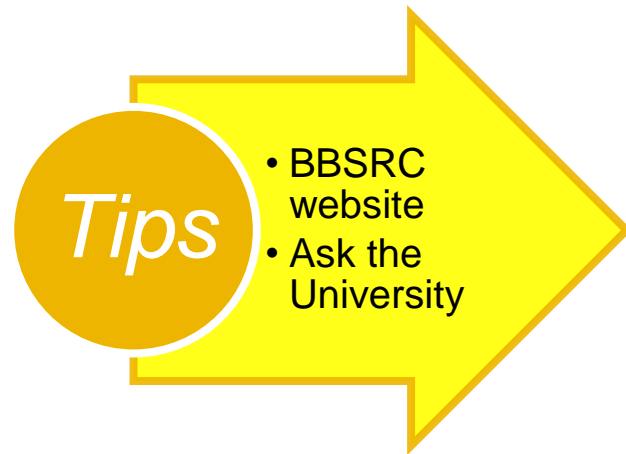
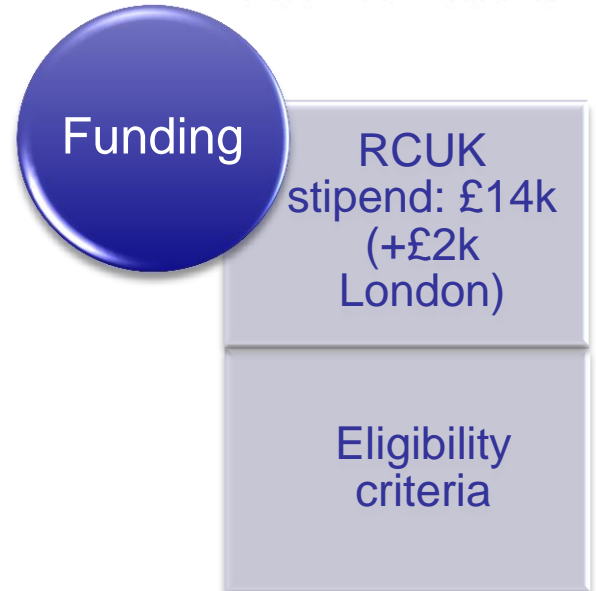
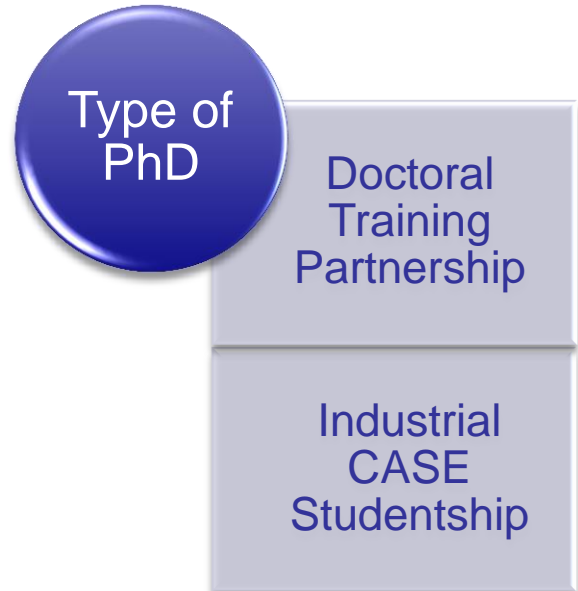
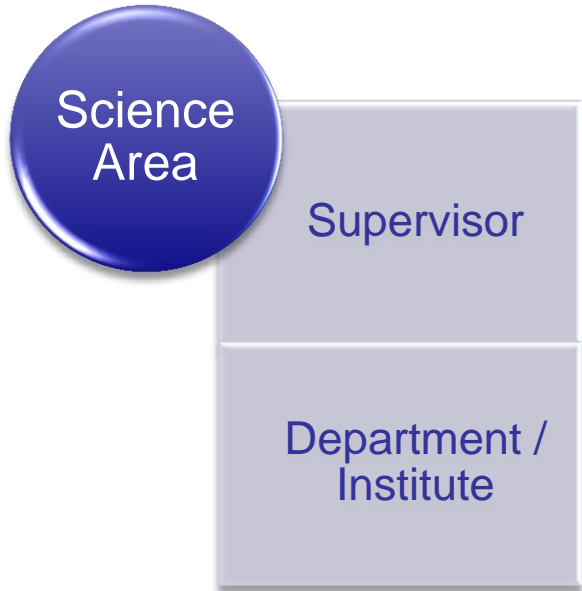
Motivation for doing a PhD



GraphJam.com

- Because you can't think of anything else to do
- Because the job market at the moment is not good
- Because your lecturer thinks you should
- Because you want to put 'Dr' before your name

PhD Planning





Research Skills

- Original research project
- Experimental development and hypothesis testing
- Application of advanced research methods
- Defending the thesis in a viva

Core Skills

- Bioinformatics
- Mathematical modelling
- Statistics and experimental design
- Multidisciplinary approaches to understanding biological systems

Professional Skills

- Professional Internship for PhD Students (PIPS)
- Communication skills
- Ethical awareness and public engagement
- Commercial awareness, business skills and entrepreneurship

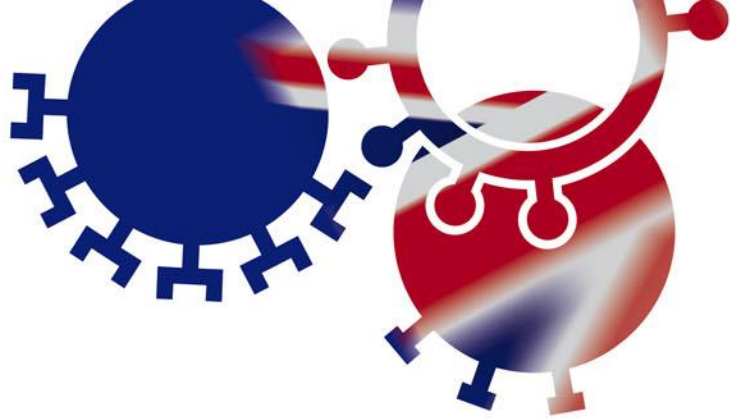
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- Research training in area of relevance to non-academic (e.g. industry) partner
- Collaborative postgraduate research training leading to a PhD
- CASE Partner: a non-academic organisation which provides students with distinctive research training / experience not available in an academic setting
- BBSRC supports CASE studentships within remit
- Scheme is supported by all Research Councils
- *Non-academic Partner must provide:*
 - 3 - 18 month placement with relevant training
 - £1.4k pa towards project costs (if company employees > 51)
 - Expenses associated with the placement



- The Biotechnology YES is a competition for early-career postgraduate and postdoctoral scientists which **raises awareness of bioscience commercialisation**.
- Participants form teams of 4 or 5 and attend a **three-day residential workshop** encompassing presentations and mentoring sessions from leading figures in industry
- Each team **devises a business plan** for a company based on hypothetical science and present their ideas to a panel of investors.
- Selected teams progress to the final





Postdoctoral Funding to Support Research and Training



Postdoctoral research

Achievements

Publication record

Intellectual property

Other awards
(e.g. best conference presentation)

Skills

Communicating to diverse audiences

Collaborations and networking

Teaching experience

Motivation

Long and irregular hours

Fixed-term contracts

Flexibility on location

Competition

Who are your research competitors?

What is your competitive edge?

Reputation: conferences, blogs, Twitter etc.

Strategy

What is your research niche?

Who will fund your research?

Where will you go next?

BBSRC Fellowship Programmes



PhD *viva*



 **BBSRC Anniversary**
Future Leader Fellowships



- Independent research in host lab

 **BBSRC David Phillips**
Fellowships

- Independent research group

 **BBSRC Translational**
Fellowships

- Independent research group carrying out translational research (2014 call: crop science)

Full details available on the BBSRC Fellowships webpage: www.bbsrc.ac.uk/fellowships

Top Tips

- 1. Follow your own instincts**
- 2. Be open-minded about your career path**
- 3. Acquire your own personalised set of skills**
- 4. Build a diverse network of contacts**
- 5. Communicate your ideas confidently and widely**
- 6. Listen and learn**
- 7. Be an expert, but retain a broad perspective**
- 8. Be collaborative**
- 9. Keep your body and mind healthy**
- 10. If it stops being fun, move on to something else!**

Any questions?

Stay in touch...



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Sector Destinations of PhD Graduates



Employment Sectors for Doctoral Graduates in UK Employment

	2010 L DLHE					
	All	Arts and humanities	Biological sciences	Biomedical sciences	Physical sciences and engineering	Social sciences
HE	43.9%	57.5%	43.2%	36.5%	33.9%	67.6%
Education (other)	6.0%	11.2%	4.3%	3.2%	4.7%	3.5%
Finance, business and IT	10.8%	4.8%	9.7%	3.8%	22.1%	8.5%
Health and social work	13.1%	5.7%	7.7%	38.9%	3.2%	5.2%
Manufacturing	9.1%	1.1%	11.9%	5.0%	18.2%	1.9%
Research & development	6.5%	0.7%	13.4%	8.6%	7.5%	2.5%
Public administration	4.1%	5.4%	4.5%	1.2%	5.3%	4.7%
Other sectors	6.6%	13.6%	5.3%	2.8%	5.2%	6.1%
(N)	2000	290	240	445	680	215
HE at 6 months, for comparison	48.5%	58.9%	49.0%	42.0%	38.6%	70.7%

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Source: Destinations of Leavers from Higher Education Longitudinal Surveys 2008 and 2010

What do PhD Graduates Earn?



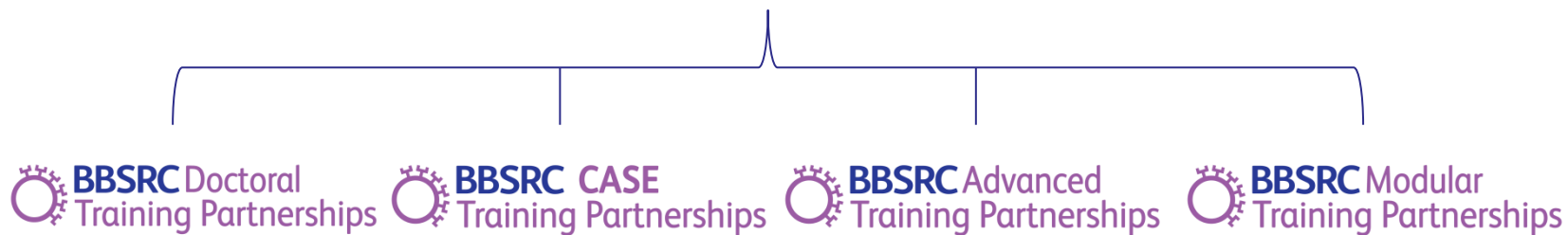
Gross Annual Earnings for Doctoral Graduates in UK Employment

	2010 L DLHE					
	All	Arts and humanities	Biological sciences	Biomedical sciences	Physical sciences and engineering	Social sciences
£25,000 or less	8.4%	18.7%	9.5%	5.4%	8.9%	3.3%
£25,001 to £30,000	19.4%	18.4%	34.4%	13.2%	22.4%	12.2%
£30,001 to £40,000	43.7%	41.2%	41.2%	38.4%	51.9%	44.6%
£40,001 to £50,000	16.1%	15.7%	9.2%	21.8%	10.0%	23.9%
£50,001 or more	12.4%	6.0%	5.7%	21.2%	6.8%	16.0%
(N)	1385	140	200	315	520	145
Median £	35000	34000	32000	40000	33060	39000

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Source: Destinations of Leavers from Higher Education Longitudinal Surveys 2008 and 2010

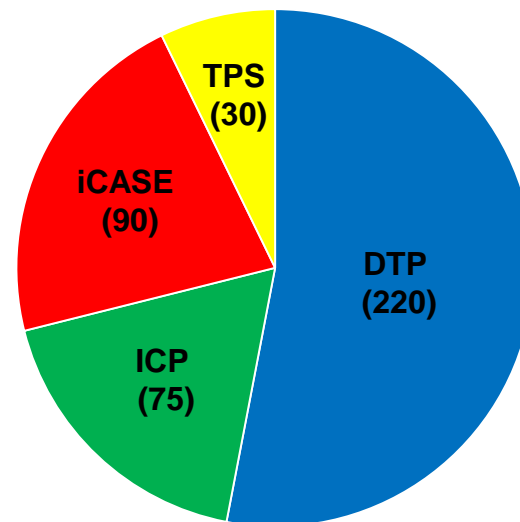
BBSRC Training Partnerships



 BBSRC Industrial CASE Partnerships

 BBSRC Industrial CASE Studentships

**Studentship Allocation
for 2014/15**



DTP: Doctoral Training Partnership; iCASE: Industrial CASE;
ICP: Industrial CASE Partnership; TPS: Targeted Priority Studentships

Policy Internships



- A competitively awarded **3-month internship** for BBSRC, NERC and AHRC PhD students
- Interns will work on an area of **science policy** in a professional science policy organisation
- Interns may:
 - Produce a **policy briefing**
 - Participate in a **policy inquiry**
 - Research, develop and organise a science policy **event or workshop**
- Choose from **eight hosts**

Parliamentary Hosts

National Assembly for Wales
Research Service



Parliamentary Office of
Science and Technology



Scottish Parliament
Information Centre



Non-Parliamentary Hosts

British Library



Centre for Science & Policy

Government Office for Science



The Royal Society

THE ROYAL SOCIETY

Society of Biology

