



THE UNIVERSITY of EDINBURGH  
Careers Service

School of Mathematics

# Thinking about a PhD?

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*Careers Consultant*

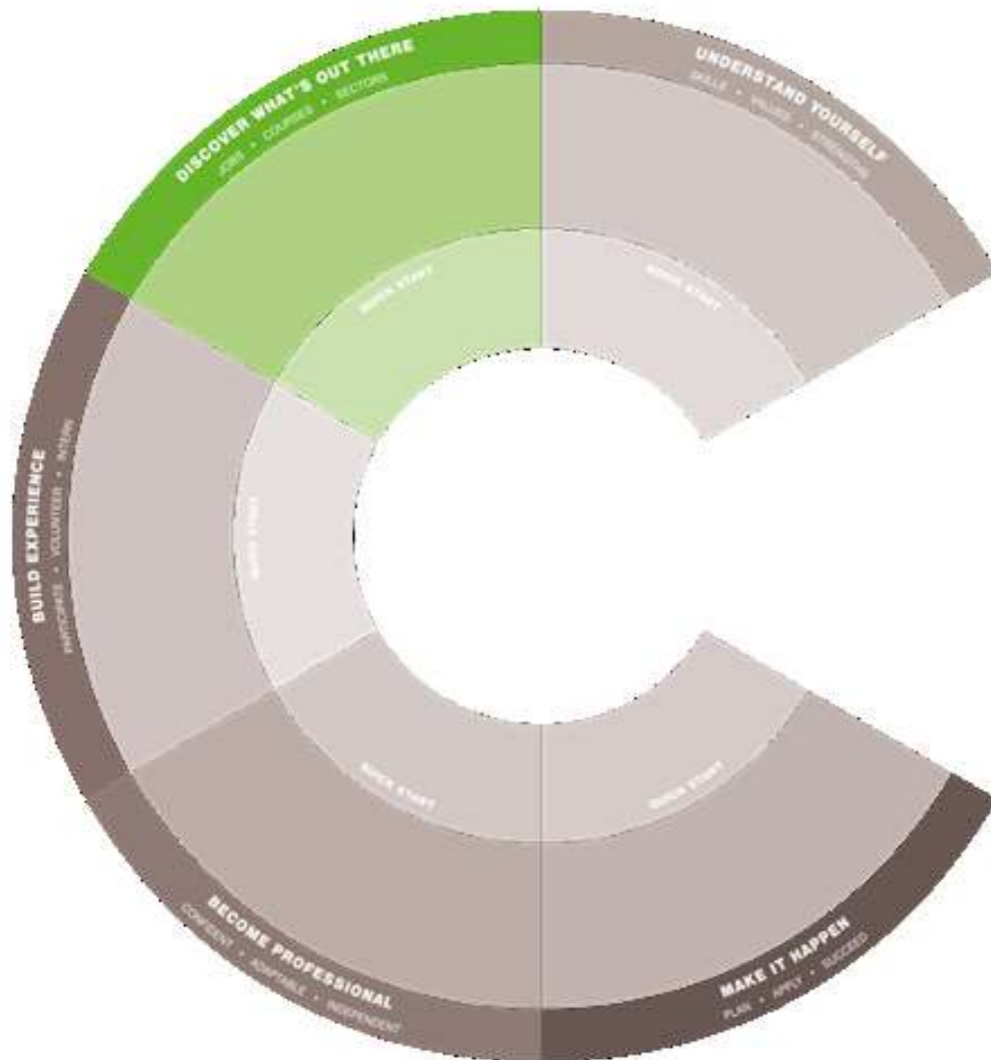


# Agenda

- Why study for a PhD?
- Is it possible?
- Types of research degree
- Issues to consider
- Finance/funding
- Where to study
- Finding courses
- Applying
- *What it's actually like!* **3 real PhD students**

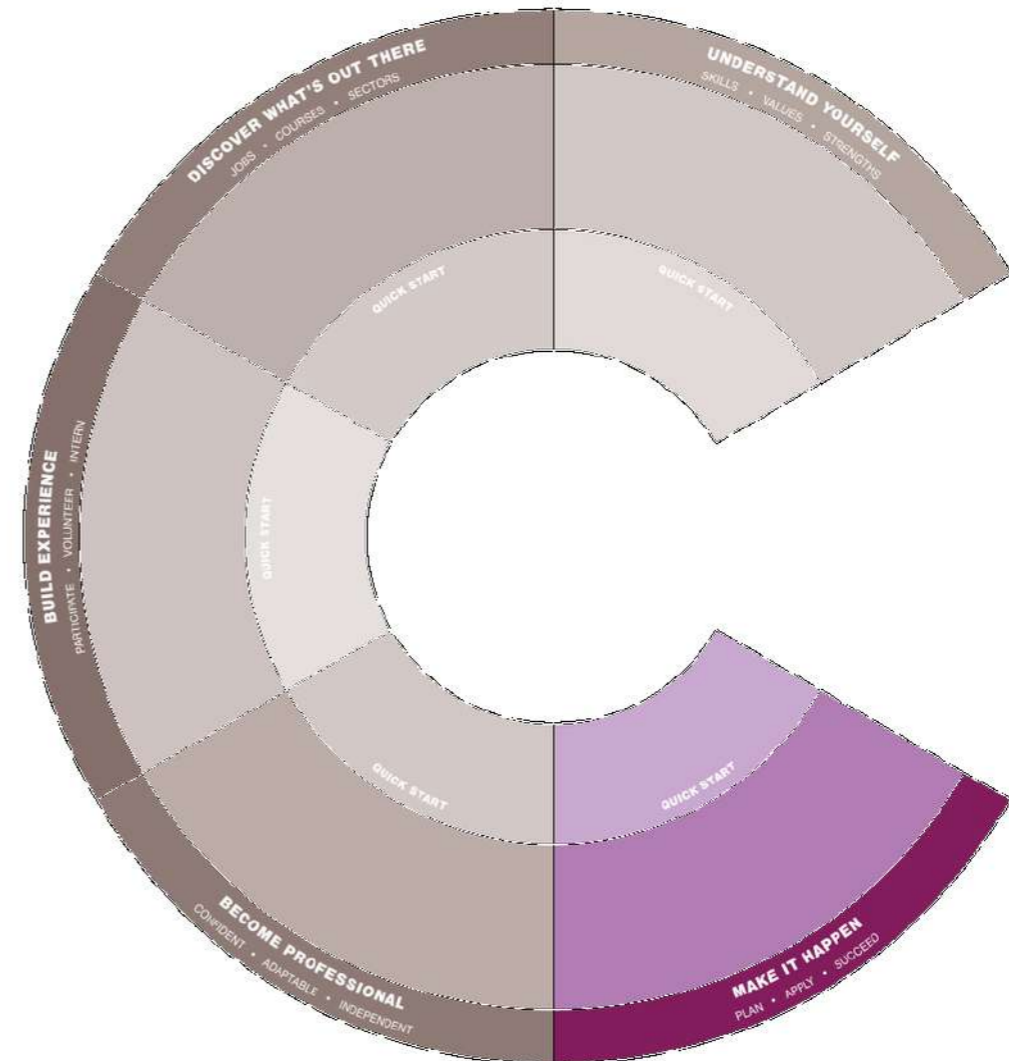


# Career Compass: how it fits

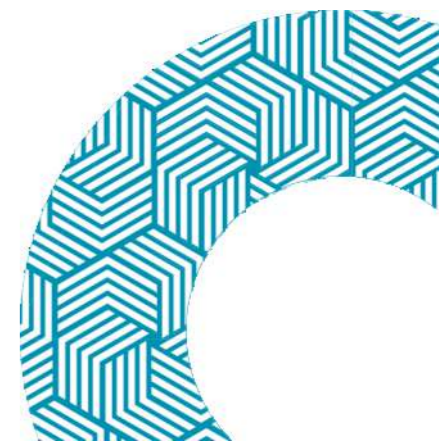


**Discover what's out there**

Inspiring futures



**Make it happen**



# Why study for a doctorate/MPhil/MRes?

## Good reasons

- requirement (e.g. teaching, research in HE)
- love of subject / personal challenge
- to change focus
- enhanced employment prospects

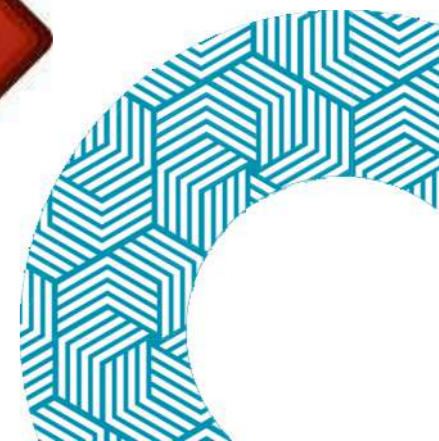


## Not so good reasons...

- enhanced employment prospects
- putting off career decision
- disappointed with degree class



[See also...](#)



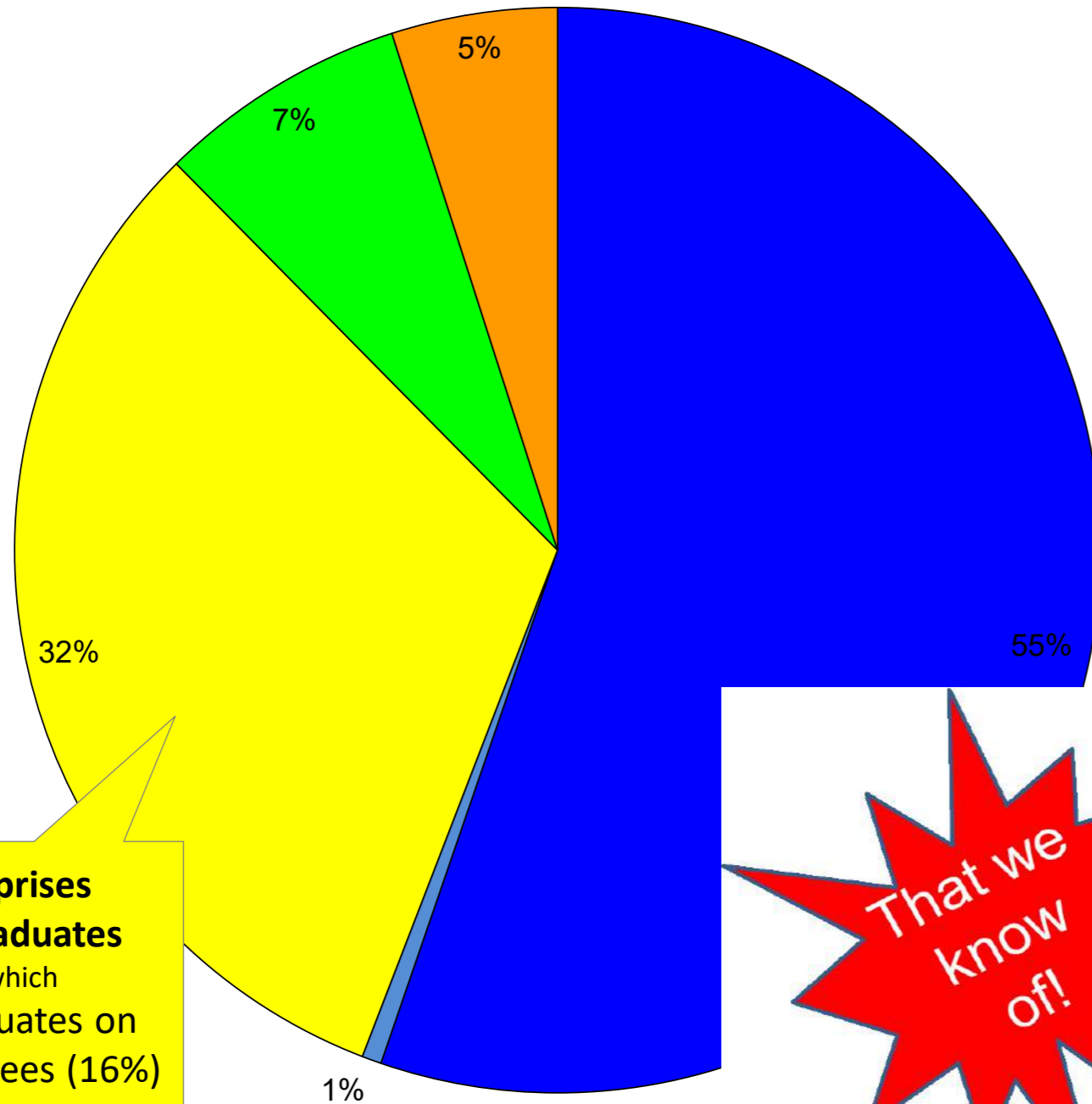


# What Do Edinburgh Graduates Do?

## Mathematics: Single + Joint Honours, MMath

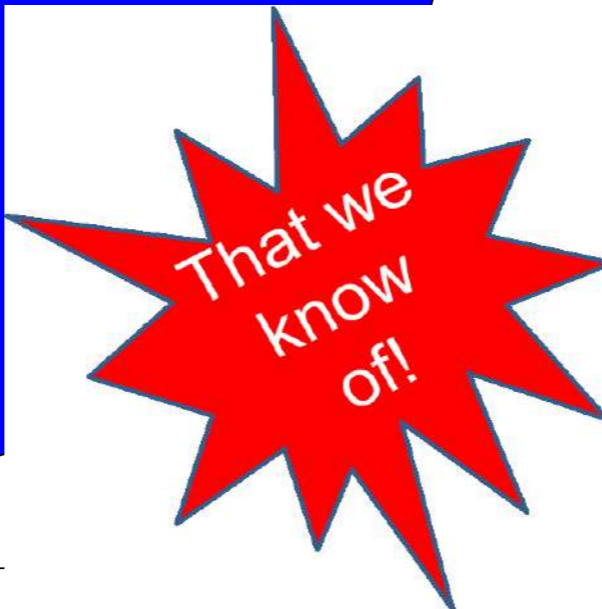
DLHE: 2002/03 - 2016/17

### Destination of known graduates six months on:



- Employment (incl. volunteering/unpaid)
- Due to start a job in the next month
- Further study / Training
- Time out / Something else / Not available
- Unemployed

**Comprises 328 graduates**  
of which  
53 graduates on  
PGR degrees (16%)



**Data = 1,033 known graduates**  
(Response rate = 79.3%)

#### Notes

1) Only UK- and EU-domiciled graduates were surveyed until 2010/11; from 2011/12 onwards international non-EU graduates were included, though their response rate is far lower.

2) The category "Due to start a job..." was not included before 2011/12.

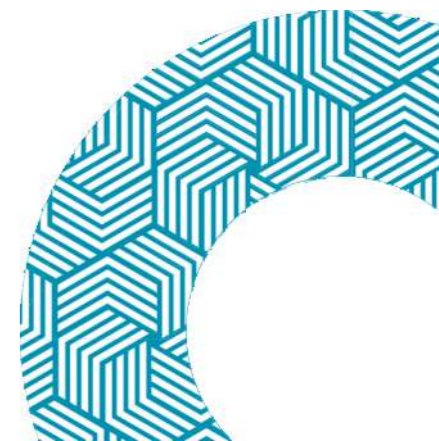
# Further study by Edinburgh first degree graduates

2011/12 to 2016/17

Institution	Total
University of Aberdeen	2
University of Bath	2
University of Bristol	3
University of Cambridge	1
University of Edinburgh	20
University of Glasgow	5
Imperial College London	1
Lancaster University	4
University of Leeds	1
University of Manchester	1
University of Nottingham	1
Oxford University	3
University of Strathclyde	1
University College London (UCL)	1
University of Warwick	1
University of Bonn (Germany)	1
University of Maryland (USA)	1
University of Michigan (USA)	1
Stony Brook University (USA)	1
Other Overseas Institutions	2
<b>Grand Total</b>	<b>53</b>

Qualification	Total
MRes	4
MSc(R)/PhD	3
PhD	42
<b>Grand Total</b>	<b>49</b>

Subject of Study	Total
Biological Science	1
Engineering	4
IT	3
Maths	33
OR	3
Physics	2
Psychology	1
Statistics & Data	6
<b>Grand Total</b>	<b>53</b>

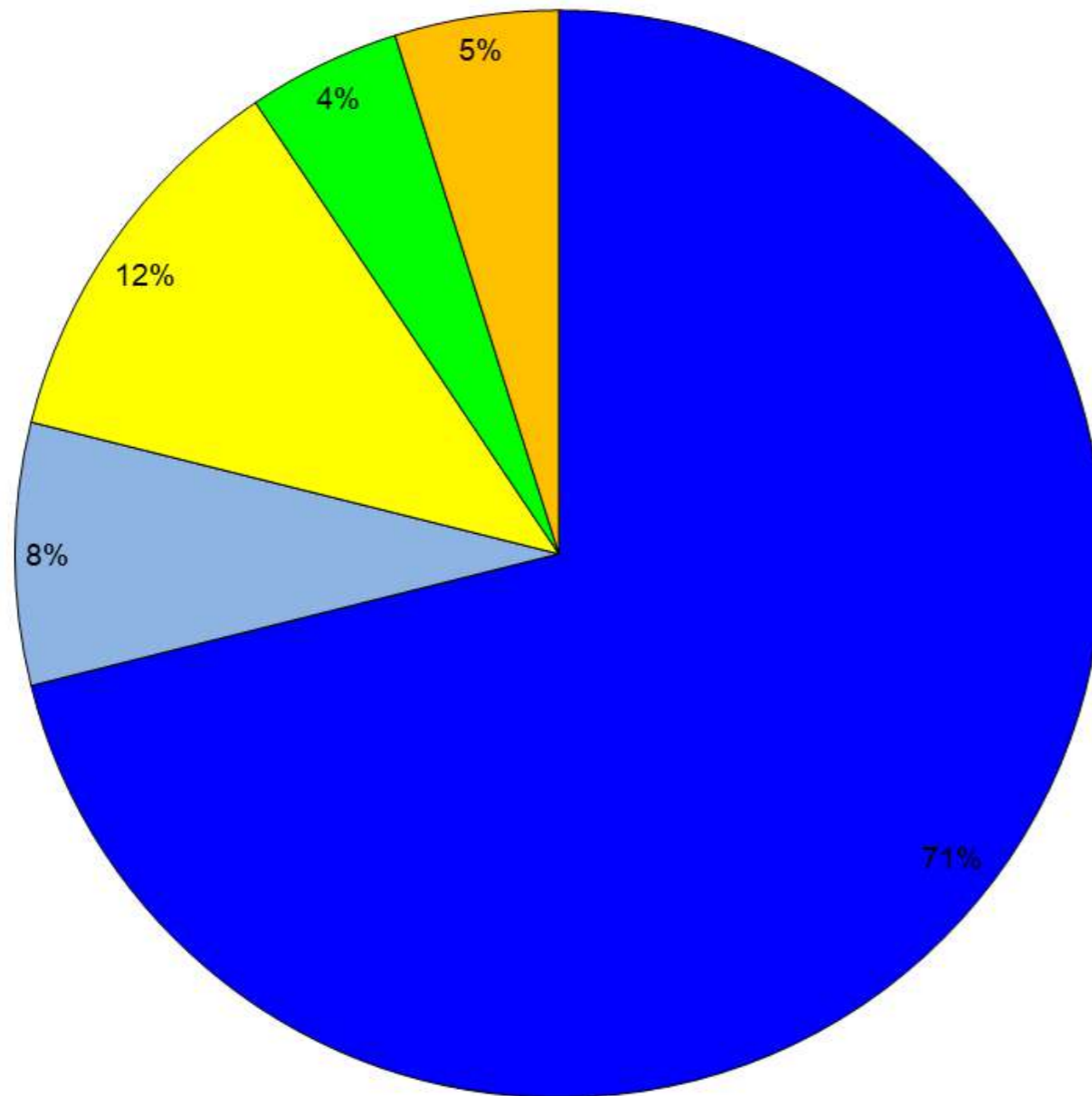




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## What Do Edinburgh Graduates Do? Postgraduate (Taught) Mathematics

DLHE: 2011/12 - 2016/17



### Destination of known graduates six months on:

- Employment (incl. volunteering/unpaid)
- Due to start a job in the next month
- Further study / Training
- Time out / Something else / Not available
- Seeking Employment / Study / Training

**Data = 300 graduates**  
(32.1% response rate)

- Financial Modelling & Optimization
- Financial Mathematics
- Mathematics
- Operational Research
- Statistics

# Further study by Edinburgh MSc graduates

2011/12 to 2016/17

PhD	Aerodynamics	Loughborough University	England	
PhD	Banking & Financial Management	University of Piraeus	Greece	
PhD	Biomechanics	Ecole Polytechnique	France	
PhD	Financial Mathematics	Tampere University of Technology	Finland	
PhD	Learning Analytics	Corvinno Technology Transfer Center (Eduworks ITN)	Slovakia	
PhD	Management	University of Edinburgh	Scotland	
PhD	Management	University of Warwick	England	
PhD	Management Science	Loughborough University	England	
PhD	Mathematics	Lancaster University	England	
PhD	Mathematics	University of Bristol	England	
PhD	Mathematics	University of Copenhagen	Denmark	
PhD	Mathematics	University of Edinburgh	Scotland	
PhD	Mathematics	University of Kent	England	
Unspecifie	Mathematics	<i>Unspecified institution</i>	Unspecified	
PhD	Ocean Science	University of Manchester	England	
PhD	Operational Research	Universite Catholique de Louvain	Belgium	
PhD	Optimization and Operational Research	University of Edinburgh	Scotland	(x7)
PhD	Probability and Stochastic Analysis	University of Edinburgh	Scotland	(x2)
PhD	Statistics	University of Edinburgh	Scotland	
MRes	Statistics and Operations Research	Lancaster University	England	
PhD	System Engineering and Engineering Management	City University	Hong Kong	
PhD	System Security	University of Bristol	England	
PhD	<i>Unspecified subject</i>	University of Nottingham	England	

That we  
know  
of!



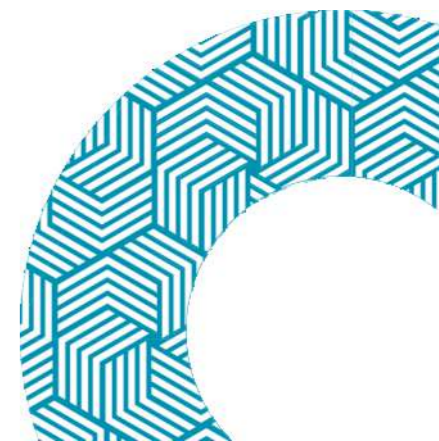
# Types of research-based postgraduate study:

1 year	2 years	3-4 years
Masters by Research <ul style="list-style-type: none"><li>• MSc(R)</li><li>• MRes</li></ul>	MPhil	Doctorate by Research <ul style="list-style-type: none"><li>• PhD</li><li>• DPhil</li></ul>



## Note:

- Cambridge *taught* masters are all termed an MPhil
- Most research degrees are university-based
- EPSRC Industrial doctorates may offer 1+3 model



# Issues to consider...

- Academic ability
- MRes → PhD?
- Motivation
- Timing
- Financial...



# Financial Considerations

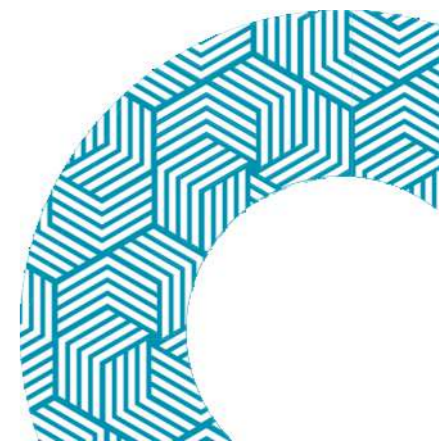


**Fees** – vary e.g. [Edinburgh \(2020/21\)](#)

- PhD/MPhil (F-T) £20,100 p.a. (+£1,000 additional costs)
- PhD/MPhil (P-T) £10,500 p.a.
- MSc(R) (F-T) £8,750 p.a. Home/EU; £22,850 p.a. Int'l
- MSc(R) (P-T) £4,370 p.a. Home/EU; £11,425 p.a. Int'l

+ Maintenance (to live on) - £10-15k (depending on location)

Typical Studentship - Research Council stipend for 2013-14: **£13,726** or 15,726 (LW) + RC pays academic fees

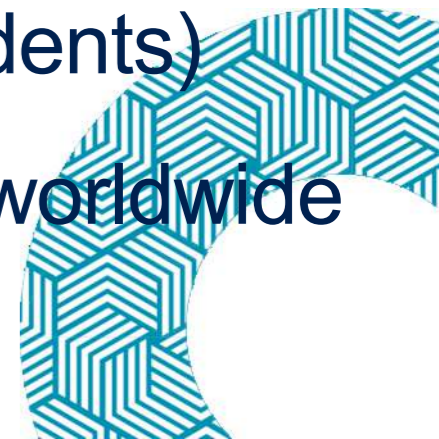


# Funding: universities

- May offer **scholarships** to attract smart students (N.B. early closing!)
- **Academics** may win project funding from industry, incl. provision for PhDs and postdocs > advertise
- **UK Government** (Research Council e.g. *EPSRC*) funding often has nationality rules UK (yes) / EU (some) / International (limited)

## See also...

- Careers Service pages on Masters and Doctorates
- [www.prospects.ac.uk/funding](http://www.prospects.ac.uk/funding)
- [www.educationuk.org](http://www.educationuk.org) – British Council (international students)
- [www.postgraduatestudentships.co.uk](http://www.postgraduatestudentships.co.uk) – all nationalities, worldwide



# SCHOLARSHIPS AND STUDENT FUNDING

Scholarships and Student Funding home

Home > Scholarships & Student Funding > Postgraduates

Contact us

## Postgraduates

- Funding for UK/EU students
- Funding for international students
- Online Learning Scholarships
- Tuition Fees
- Cost of living in Edinburgh

## Prospective postgraduates

Information on funding opportunities and tuition fees for prospective postgraduate students.

### Scholarship search

[Search for Bursaries, Scholarships and other Financial Aid available to prospective students](#)

### Funding for UK/EU students

In addition to financial assistance provided by Research Councils and charitable trusts, the University offers a number of general and subject-specific funding schemes.

### Funding for international students

In addition to financial assistance provided by UK Government agencies and external funding sources, the University offers a number of general and subject-specific funding schemes.

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<https://www.ed.ac.uk/student-funding/postgraduate>

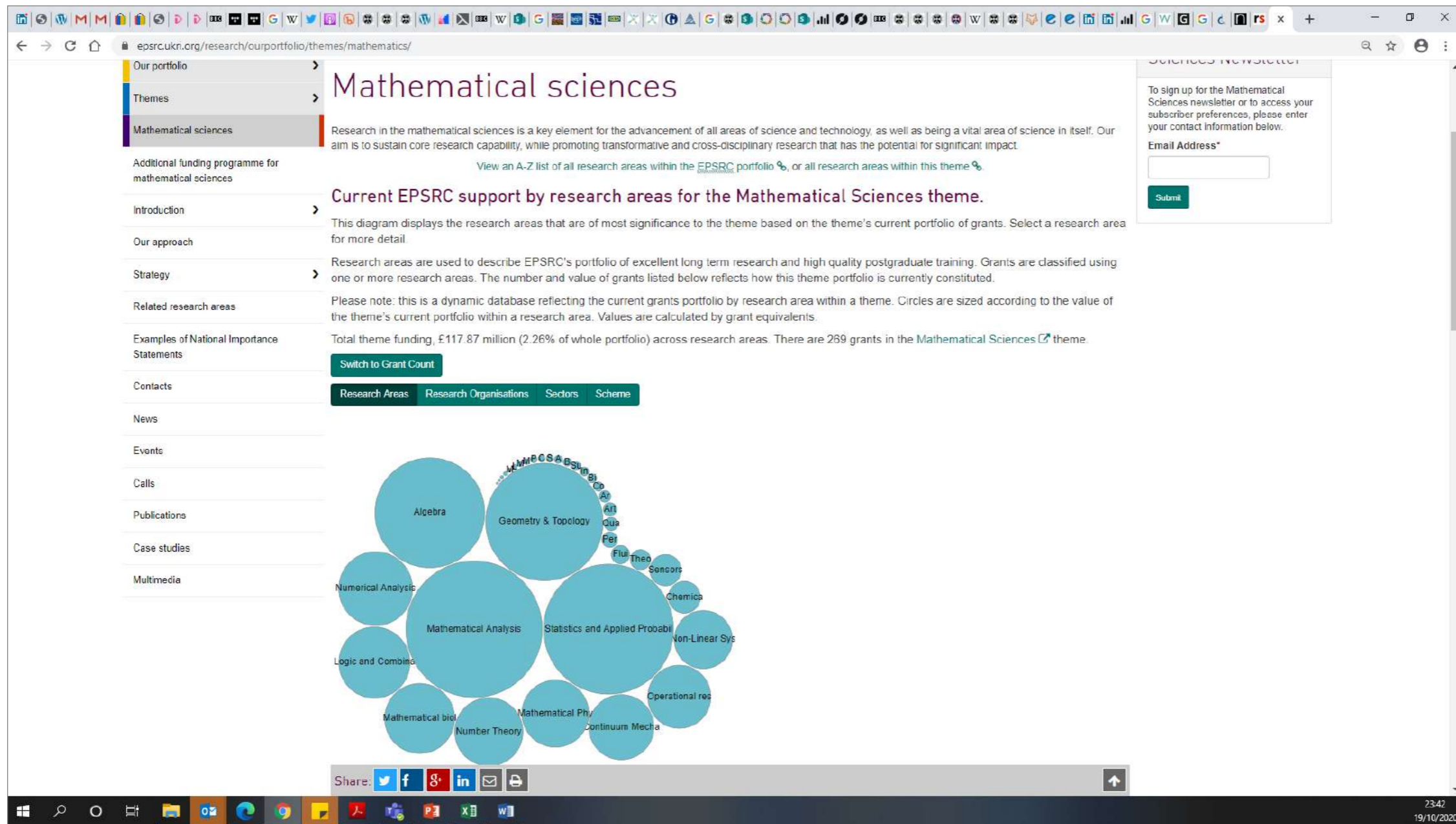
# Funding: EPSRC doctorates

Centres for Doctoral Training – one of 3 ways EPSRC funds PhD research (others being CASE Awards and Doctoral Training Partnerships)

- Train engineers and scientists with the skills, knowledge and confidence to tackle today's evolving issues, and future challenges.
- Collaboration between university/ies + industry partners
- Students are funded for 4 years and include technical and transferrable skills training, as well as a research element.
- Many Centres leverage additional studentships from other sources (eg university funding, EU funding, industrial funding, private funding etc).

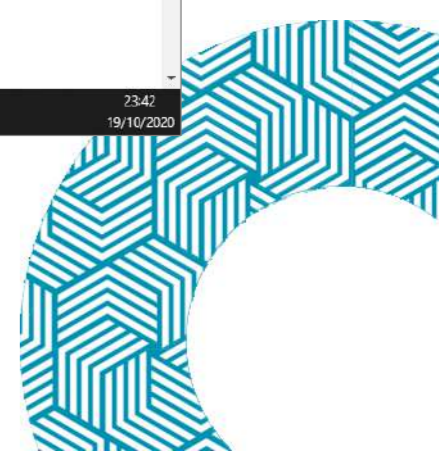


# Current EPSRC funding by research area: Maths

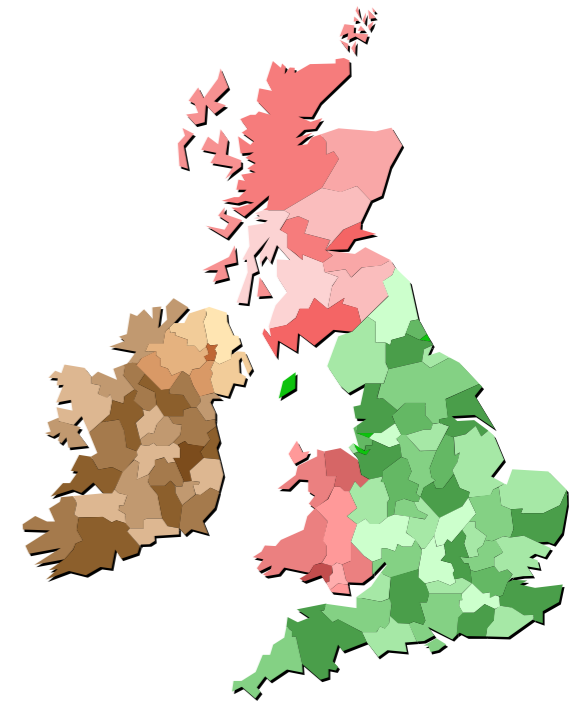


<https://epsrc.ukri.org/research/ourportfolio/themes/mathematics/>

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# Choosing where to study: UK



- What do you hope to get from your research?
- University vs subject reputation?
- Research reputation?
  - [Research Excellence Framework \(REF\)](#)
  - International Rankings: [QS](#), [Times Higher](#)
  - Advice from academics
  - Papers/journals you have read > author? Where are they?
  - Graduate destinations: where have research students gone afterwards?
- Academic supervisor? Current/past PhDs?
- Open days/[visits](#)? ('Fit')
- Other personal considerations (climate, family...)





# Finding research programmes



## Advertised

- [www.FindAPhD.com](http://www.FindAPhD.com)
- <http://targetpostgrad.com/>
- [www.prospects.ac.uk/postgraduate-courses](http://www.prospects.ac.uk/postgraduate-courses)
- [www.jobs.ac.uk](http://www.jobs.ac.uk)
- Individual department/research group websites

## Hidden?

- **Follow-up** with academic contacts => **Apply speculatively**
- PG Open Days in specific universities (e.g. [Edinburgh](#))

## Overseas

- [www.prospects.ac.uk/postgraduate-study/study-abroad](http://www.prospects.ac.uk/postgraduate-study/study-abroad)

Inspiring futures

- **USA:** <http://www.fulbright.org.uk/>



# How and when to apply



- From Autumn semester, to commence following summer
- Apply to each institution/research group individually
- Some have closing dates, some are all year round
- Fixed closing dates for some funding organisations
- Most use applications forms/personal statements but for speculative approaches, CV and covering letter



# Personal Statement

- Explain **why** you are interested in...
  - this *specific* PhD topic (incl. fit with future career plans)
  - this institution (and/or research group).
- **Why you** would be a good researcher, incl.
  - previous research experience (e.g. projects, dissertations)?
  - relevant technical skills and knowledge (e.g. academic courses)
  - qualities that demonstrate you will be a good student (e.g. independence, self-starter, resilience, collaboration; interest in university life (poss. tutoring?) positions of responsibility, outside interests.
- If vocational, provide particularly detailed evidence of any previous relevant work experience
- Finish with strong closing statement



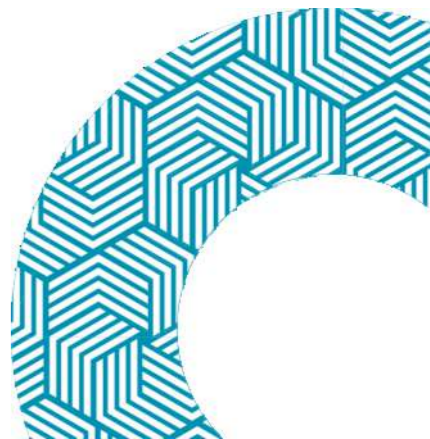
# Example of intro to personal statement

“I am really interested in doing a PhD in molecular biology as I hope to make my career as a scientific researcher in this field. I think this PhD offers me the opportunity to learn a great deal about the field of stem cells and to develop a wide range of useful lab techniques.....”



Or....

“I am intrigued by the role of epigenetic modifications in adult stem cell fate choices, and in particular, the key signalling pathways that control them. My Honours project has given me an good grounding in stem cell biology as it centred around satellite cells and their capacity for regeneration. It enabled me to use a wide range of techniques, such as stem cell culture and ChIP-seq which are instrumental to the PhD offered at the Babraham Institute.....”



# Watch our quick guide to personal statements!

media.ed.ac.uk/media/Personal+statements+for+PG+study/1\_6qbbq6w0/39694071

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Personal statements for PG study

From Jane Challinor on September 21st, 2020

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# Talk to your academics

- Where do they recommend for your interests?
- Advice on personal statements (esp. academic aspect)
- Get them on-board...
- ...as you'll need references!



# Summary

- Choose PhD study for the right reasons. Know what your options are.
- Plan well in advance, using all the available resources, especially if funding is an issue.
- Start thinking NOW about what you will do AFTER study.....
- Remember help is available at Careers Service





# What do **real** PhD maths students say?!!

Hear from:

- **Luis** Vargas Mieles – PhD Applied & Computational Maths (Yr 3)
- **Paula** Fermin Cueto – PhD Optimization & OR (Yr 1)
- **Ivona** Gjeroska – PhD Optimization & OR (Yr 2)

**What questions would you like to ask them?**

