

How to apply for a PhD

7 November 2023¹

¹ updated 19.11.2023

Questions:

Where should I apply?

When should I do it?

What do I need to do?

What happens after I apply?

What are the funding opportunities?

Universities in the UK:

- KCL Maths and Physics
 - Imperial Physics
 - QMUL Maths and Physics
 - City University Maths

 - Cambridge Maths (DAMTP)
 - Oxford Maths and Physics
 - Durham Maths and Physics
 - Edinburgh Maths and Physics
 - Southampton Maths and Physics
 - Surrey Maths
 - Liverpool Maths
 - Swansea Physics
 - Nottingham Maths
 - [Heriot-Watt Maths](#)
- Cardiff Maths
 - Kent Maths
 - Glasgow Maths
 - Hertfordshire Maths
 - Sussex Physics
 - York Maths
 - Newcastle
 - Birmingham

 - UCL Physics
 - Manchester
 - Portsmouth

Universities worldwide

- Amsterdam, Leiden, Utrecht, Groningen
- Leuven, Brussels (ULB,VLB)
- Paris (ENS, Ecole Polytechnique, Jussieu, Saclay), Lyons, Montpellier..
- SISSA (Trieste), Bologna, Florence, Turin, Rome, ..
- Geneva, Lausanne, Zurich,...
- Munich (LMU), Hamburg (DESY, U,), Berlin, Potsdam, Hannover, ...
- Vienna
- Copenhagen, Stockholm, Upsala,..
- Madrid, Barcelona, Santiago de Compostela,..

<https://edurank.org/physics/theoretical/>

- Princeton, [Harvard](#) , MIT, Stanford, Caltech, [Stonybrook](#), Rutgers, [UCLA](#), USC, [Chicago](#), UIUC, UCD, ..
- Toronto, Montreal (McGill), UBC, Waterloo, PI, ..
- Japan
- Korea
- India
- China
- Argentina
- South Africa
- Israel
- Brazil
- ...

Deadlines

Deadlines vary wildly, and can also depend on the funding source – eg KCSC China scholarships have a much earlier deadline

For UK, typically interviews are in Jan, Feb, early March. Applications should arrive in time for shortlisting.

Websites can be helpful, but not always as official deadlines may be some time after shortlisting

For the US, many deadlines are [Dec 15](#), not all (eg [Dec 4](#), ...)
Elsewhere can be much later, or earlier..

What do I need to do?

Having identified where to apply, follow their instructions!

These will require

- Reference letters (2 or 3) [For the UK, usually 2]
- Transcript(s)
- “fee status” or other eligibility requirements

Some or all of..

- A personal statement
- A research proposal
- A CV
- A fee ...
- Proof of English language proficiency ...

The research proposal (for KCL)

- don't worry about it, too much
- we don't expect you to be able to put together a research proposal
- on the other hand, we need to be able to pair you with an advisor, so tell us what you're interested in and with whom you would like to work
- (this is different from the US system where pairing happens after admission)
- the more specific you can be, the better (within limits)
- be honest, and anything you say can be queried in an interview

Funding sources

In the UK, there are

- research council grants (STFC for more physics oriented, EPSRC for more maths) and University/faculty/department grants
These are awarded by the department and not applied for separately
- Personal grants (specific to one supervisor), chosen by the supervisor
- Other sources, eg KCSC scholarship at King's for Chinese students, Commonwealth Scholarships,.. which have their own rules

In the US, students can be offered full scholarships, or graduate teaching positions

What happens next

In the UK, typically students are interviewed before being offered a place. Sometimes only students who are being interviewed will get a quick response.

Sometimes students who are interviewed are told quickly, sometimes never, and everywhere in between.

Students can be made offers with specific supervisors, or invited to discuss..

In the US, you may be offered a place without interview just on your documents and references. Usually a supervisor is assigned some time after starting the programme

Elsewhere: anything is possible

What is an interview like?

There is no standard, but typically 20-30 minutes with a combination of

- Presentation
- Technical questions
- General questions

Can be in front of a panel, can be with just two people.

Can be in-person or online – in which case a tablet is REALLY helpful.

Should I apply now or wait until I have my MSc results?

Pro: you can have excellent grades in the MSc which make your application stand out, and you will have completed a project, so your supervisor can talk about your research potential with confidence.

Potential cons: would people consider my application seriously if I am on a "gap year" after finishing the MSc?

Like everything, I can't speak for elsewhere, but we consider every application on its merits. We have made offers to students who are on a gap year after finishing an MSc, we have interviewed the same student two years in a row (i.e. during, and then after their MSc) and only made an offer the second time round.

Caution: we have seen plenty of students who apply after completing the MSc and on a gap year who then perform badly in the technical questions, just because they do not have the material at their fingertips - but also plenty who have prepared well, and do well.

If you really think your previous grades are not good to support a PhD application now, then you certainly can put off applying until after finishing the MSc.

Please ask your personal tutor, or get in touch with me directly, if you want to talk this over.

Keep an open mind on where you would consider studying.

Apply widely, the field is very competitive (KCL interviewed 30-40, offered places to approx. 10, took 6 students from 125 applicants)

Good Luck!