Physics at Oxford

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About myself

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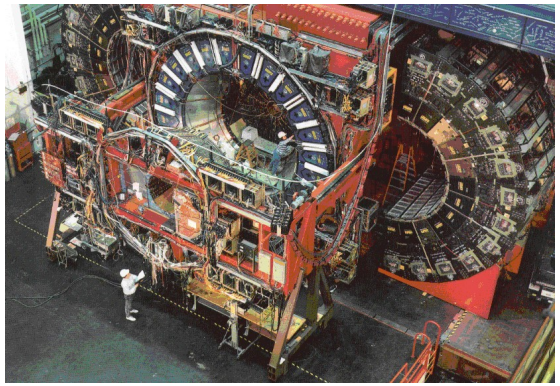
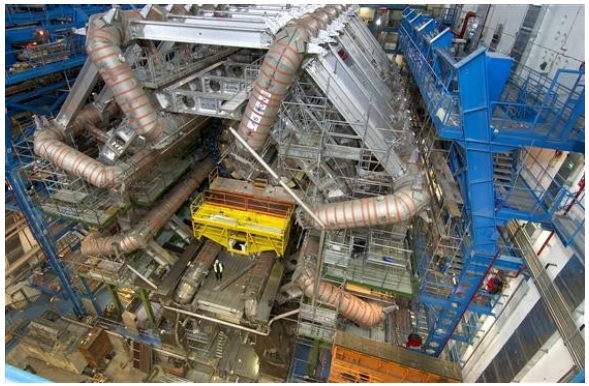
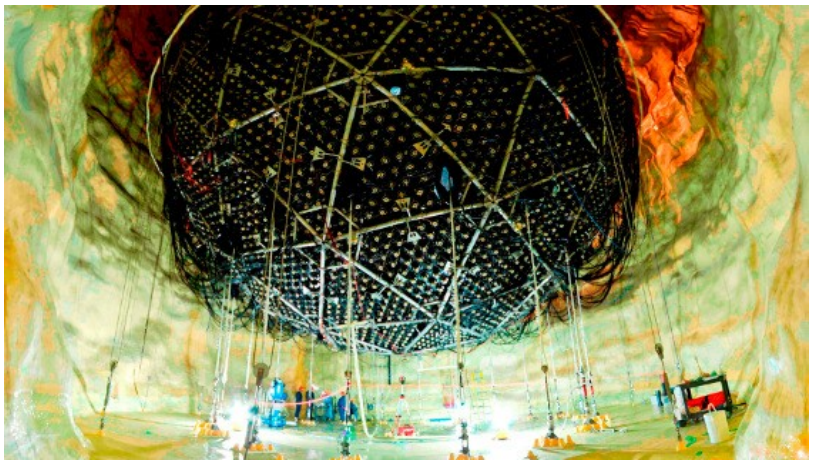
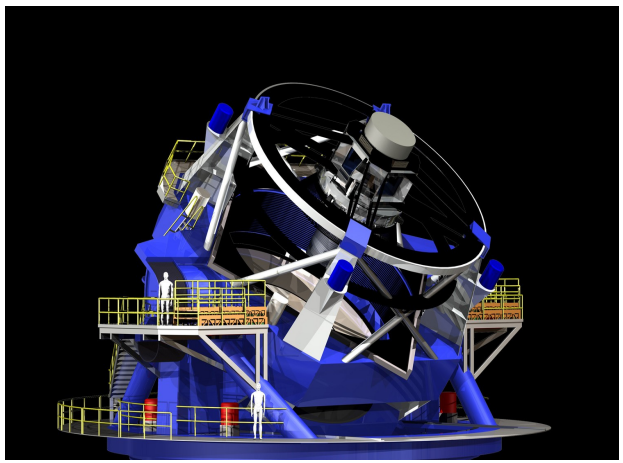
- Experimental particle physics (“Big toys”)
  - Teach undergrads, postgrads; research; administration; admissions; outreach

About myself

- Joined Oxford and St Edmund Hall in 2003
- Like many in Oxford, no “Oxbridge” background
  - California state schools
  - BS Caltech
  - PhD Johns Hopkins
  - Research scientist at MIT and Fermilab

Outline

- Why Oxford?
- Physics courses at Oxford
- Teaching methods
- After graduation
- Admissions process
- Questions?

Why Oxford?

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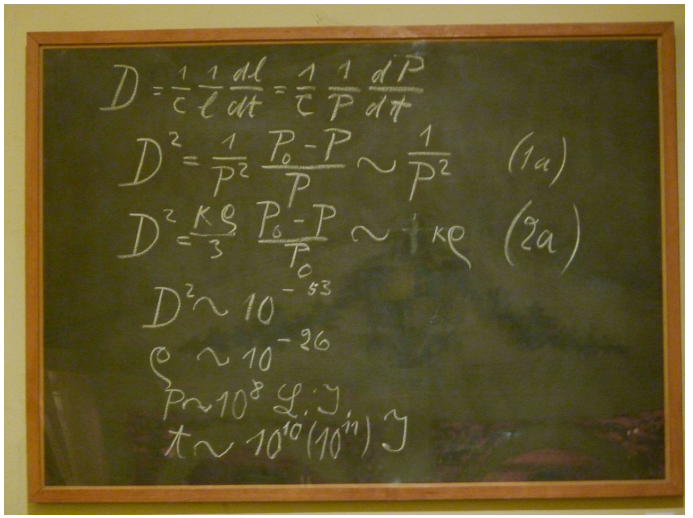
- Great place for science
  - Number of world's leading scientists already here
  - Tend to work with those who aren't



Why Oxford? (2)

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- Great place for asking fundamental questions
  - Radical, ground-breaking ideas
  - Entrepreneurial spirit
- And they teach!

Physics courses at Oxford

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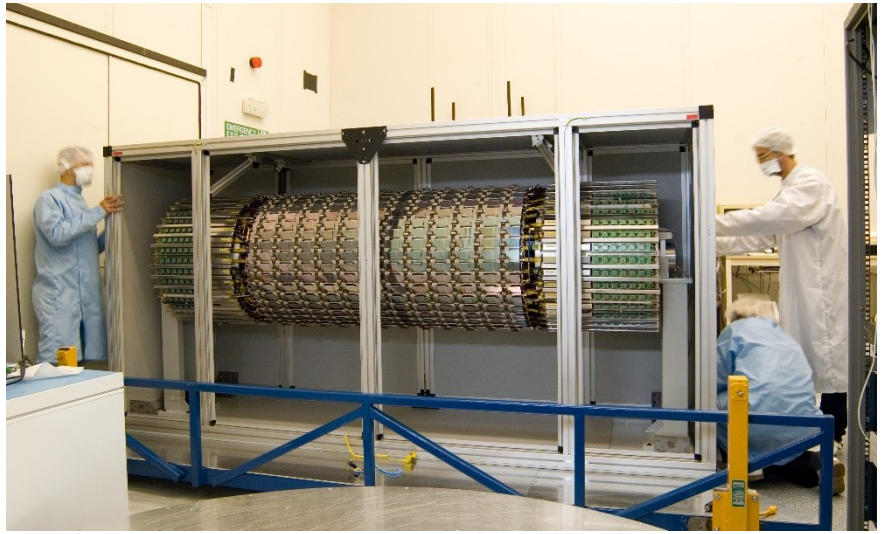
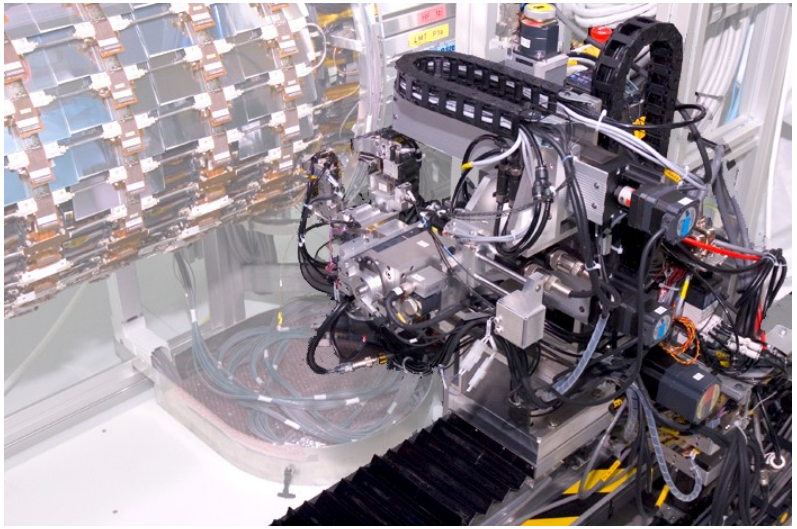
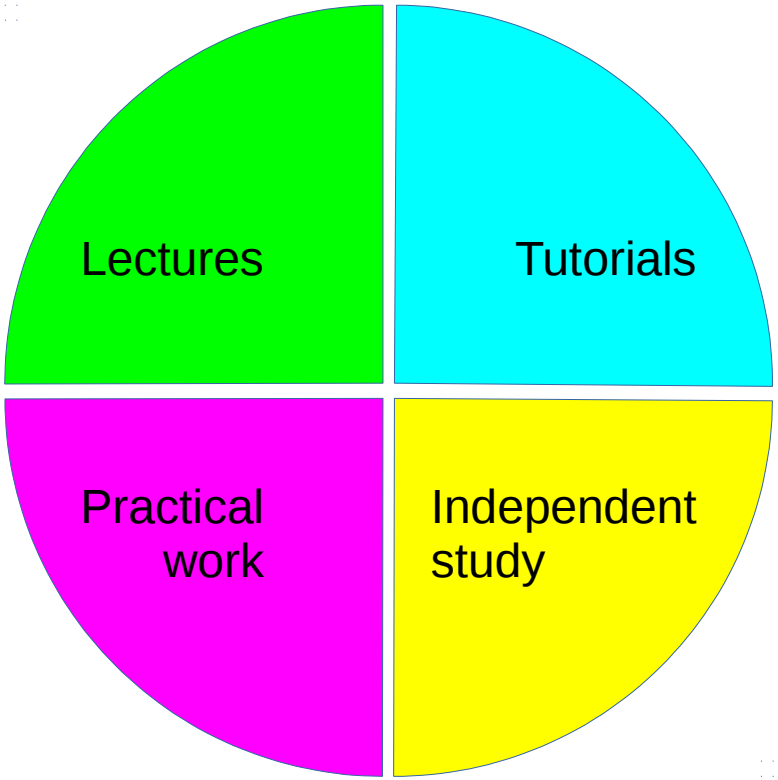
- Two main courses:
  - Physics (MPhys)
  - Physics and Philosophy (MPhysPhil)
- MMathPhys: new 4th year course
  - Apply from 3rd year





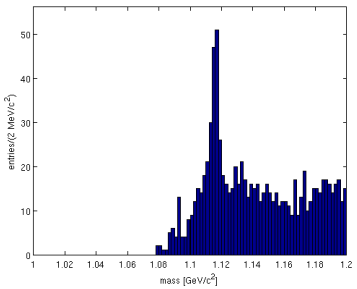
Teaching methods



- Lectures in department
- Timetabled laboratory sessions
- Tutorials in college
  - Intellectual challenge
  - Early connection with leading edge of the field
- Students responsible for own learning
- Assessment mainly through exams

A typical week

- 2 or 3 lectures each morning
- 1.5 to 3 tutorial hours
- 1 or 2 half-day practicals
- 1 hour class
  (10-15 students + tutor)
- The rest of the time is for thought, preparation, revision, consolidation...
  - It is an intense 8 weeks/term



Research projects

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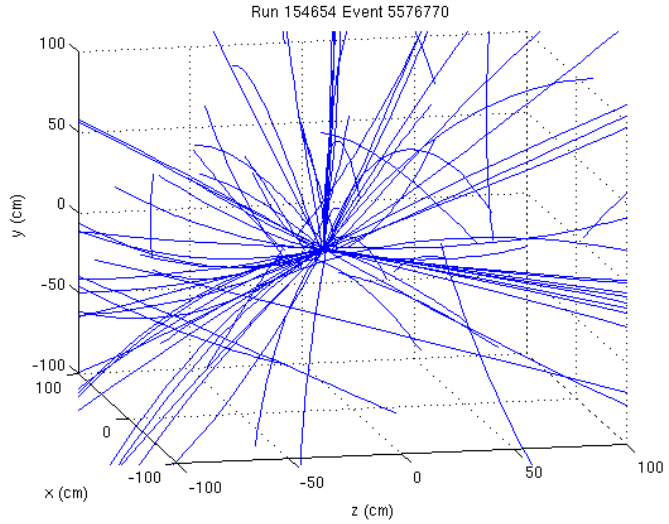
- Many students will engage in a research project by end
- Opportunities to take part in research projects during the vacations
- Encourages practical application of theory
- Develops experimental design and problem-solving skills
- Find out whether they would enjoy further research



After graduation

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- Oxford science students acquire important transferable skills
- High graduate employment rates in a range of careers
  - University and government research
  - IT or science-based industries
  - Finance, teaching, many more...
- High progression into further study
- Support to find employment or further study after graduation

Admissions

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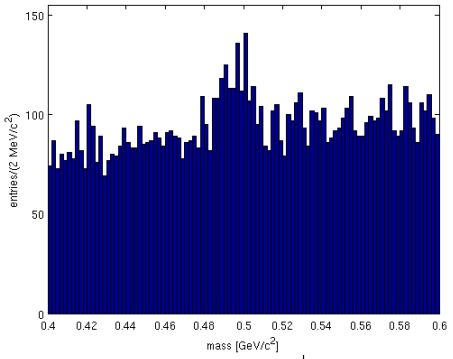
- Applications made through UCAS
  - Deadline 15 Oct 2016
- Cannot normally apply to Oxford and Cambridge in the same year
- No special application form or fee if applying through a UK school
- Separate PAT registration
  - Also 15 Oct 2016, 18.00 BST

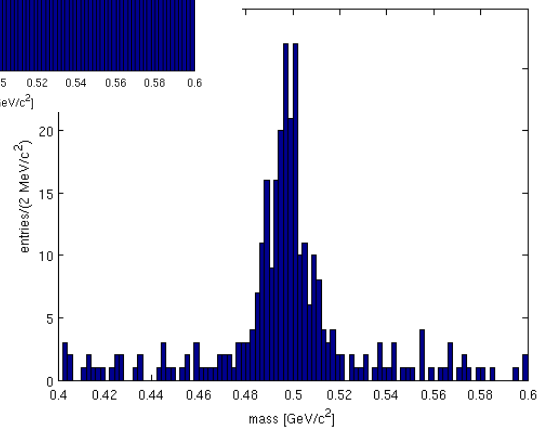
Which college?

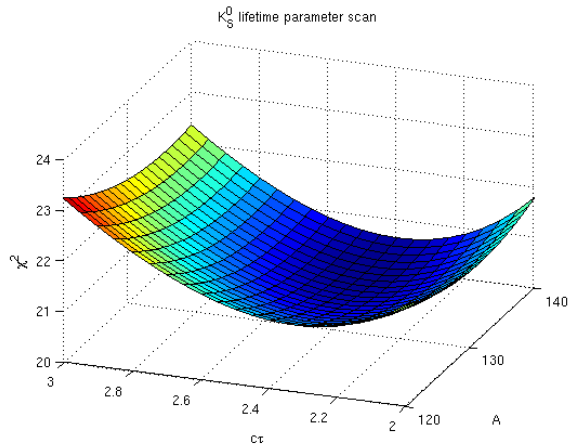
- All applications to Oxford are handled by a college, coordinated by the department
- Academically there should be no difference
- Choose for other reasons
  - For instance: rooms, food, location, facilities
  - Can also elect not to choose (open application)
- You may be reallocated

Shortlisting and tests

- Too many to interview
  - Shortlist to ~2.5 per place
- Shortlisting mostly based on Phys Aptitude Test (PAT)
  - PAT test date: 2 Nov 2016
  - All data interpreted in context, including UCAS form
  - Small part shortlisted for other reasons
- Candidates then reallocated to ensure a ratio of ~2.5 per place in all colleges







Interviews

- 12-14 December 2016
- One or more interviews at handling college
- One or more interviews at a second college chosen at random
- Handling college makes all academic and domestic arrangements

Decisions

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- Decisions are made at the end of the interview week once the information on all applicants is available
- Applicants are compared across the whole university, not just one college
- Letters are sent out in early January
- Offers may come from handling college, second interview college, a third college, or “open” - to be determined in August once examination results are available
- Offers normally conditional on examination results

- MPhysPhil:
  - Applicants treated by Physics as if applying for Physics
  - Also assessed by Philosophy
  - Must be accepted by both subjects
  - Applicants may be rejected for MPhysPhil but offered an MPhys place

Feedback

- Feedback is sent to applicants, not to schools or parents, but applicants are encouraged to share it more widely
- Some colleges send automatically, others on request
- More detailed feedback included test scores can be requested

How to succeed

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A levels

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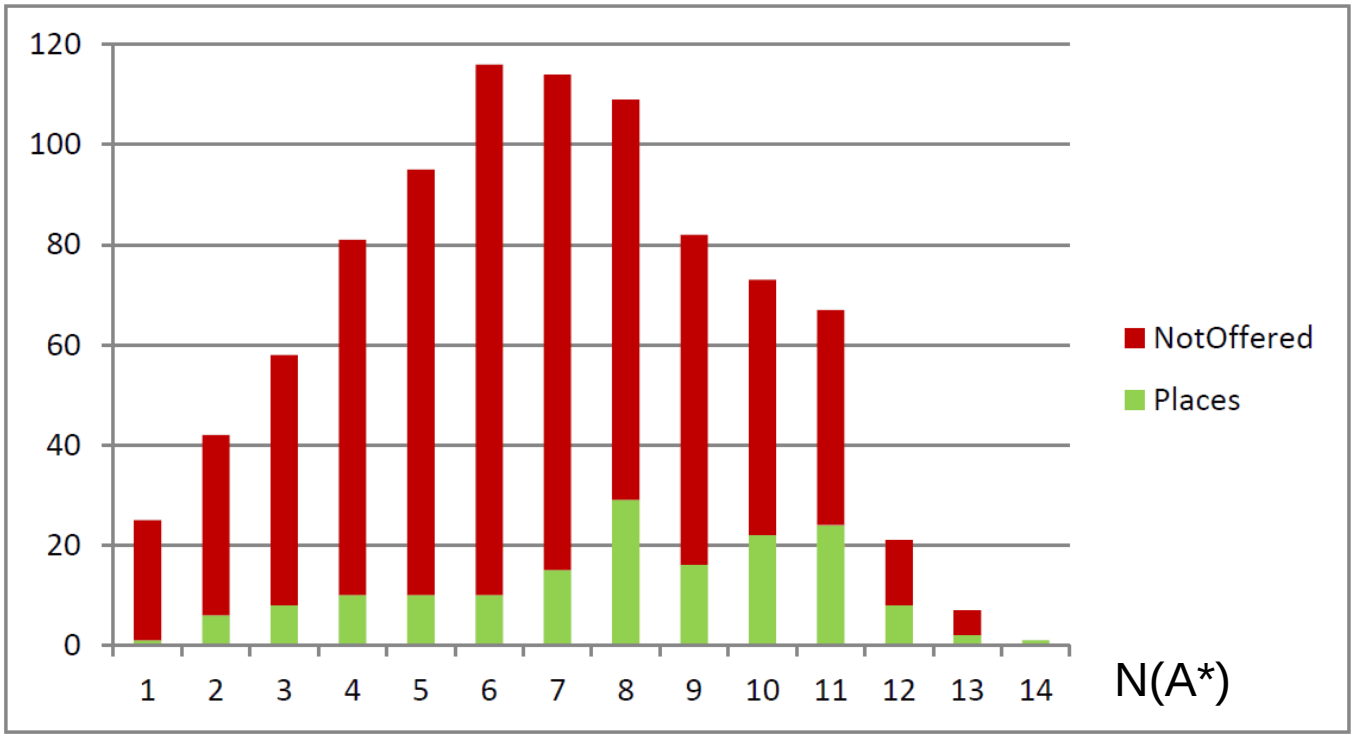
- Applicants should have or be predicted to get A*AA at A level or its equivalent, including Physics and Mathematics
- A*AA is no guarantee of a place: many A*AA applicants are rejected, and the great majority of successful applicants have between 2 and 4 A* grades
- Oxford does not use module marks

GCSE's

- No formal requirements
- The majority of successful candidates have between 4 and 11 A* grades at GCSE, but it is not particularly unusual for candidates to be accepted with fewer than 4 A* grades, or to be rejected with more than 11 A* grades

2014



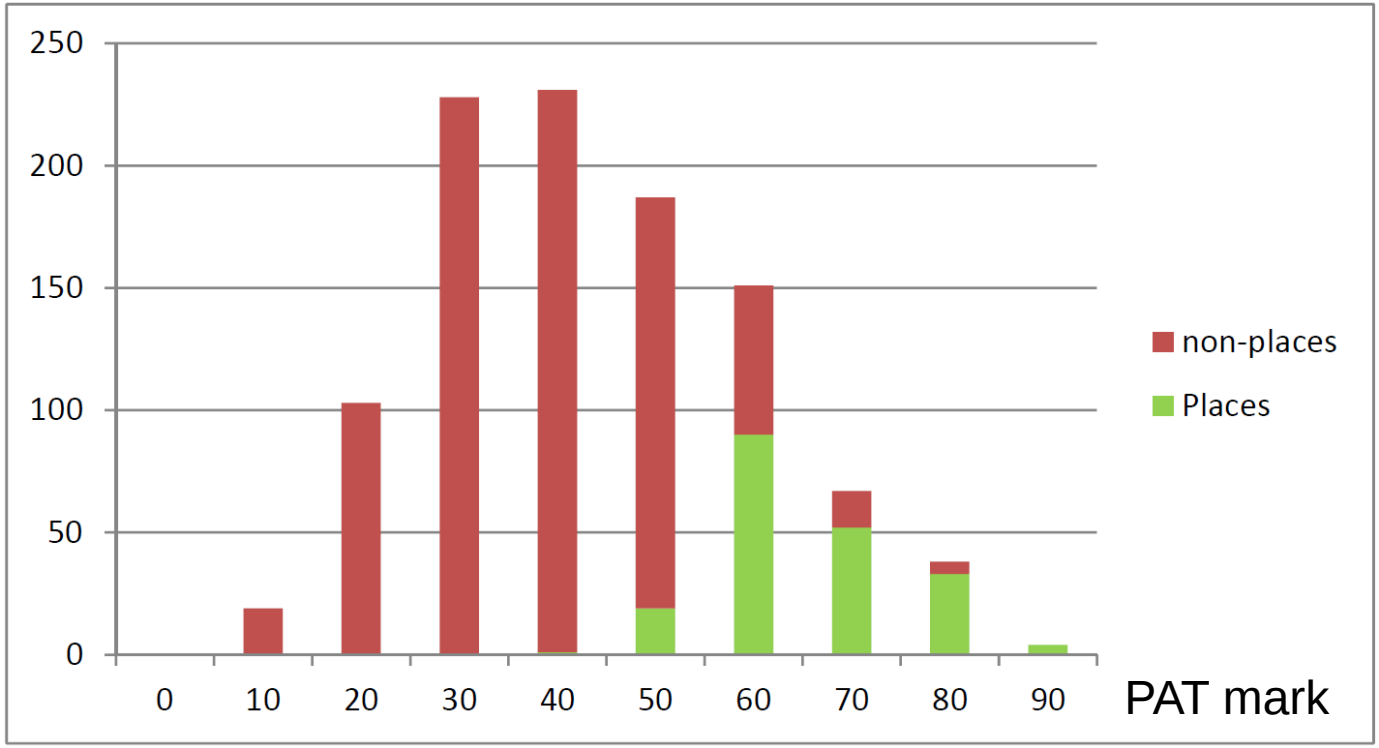
Further Maths

- Further Maths is not required and many applicants are accepted without it
- But it is the ideal 3rd A level subject, and applicants may be asked why they didn't do it
- All applicants should be confident that they would have enjoyed Further Maths and done well at it
- Oxford does not use STEP

PAT

- Most important single part of whole process
- 2 hour paper on maths and physics
- Syllabus, past papers and reports available on Physics website
  - Best way to prepare; syllabus and format changes slightly over years

2011



References

- References are universally glowing, so it is very hard for applicants to stand out
- The most useful references are those which compare applicants to previous successful applicants
- Also very helpful if schools identify any serious disturbances in past education

Personal statements

- Largely irrelevant for Oxford Physics applicants
- Applicants may, however, be asked to expand on comments they have made
- Advice to students: don’t lie about interests to impress us, as you are likely to be found out

Interviews

- Interviews are purely academic. Any social chit chat is just to calm applicants down and will not count for anything
- They will cover a range of topics in physics and maths: a harder version of the test
- More interested in how applicants think than in what they know
- Almost impossible for applicants to know how they did!

Interview Practice

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- Hard to practice academic content unless teacher is *very* experienced
- It is *very useful* to practise talking to an adult stranger about almost anything at all
  - Perhaps a teacher applicant doesn't know
- Interviewers want to see applicants at their best
- Advice to students: do not panic, bluff, or lie

Finding out more

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- Website, Prospectus, online Open Day presentation
  - http://www2.physics.ox.ac.uk/study-here/undergraduates
  - http://www.ox.ac.uk/admissions/undergraduate
- Open days
  - 29 and 30 June 2016
  - 16 September 2016
- Contact us
  - enquiries@physics.ox.ac.uk
  - undergraduate.admissions@ox.ac.uk

Any questions?

Courses

- Biochemistry
- Biological sciences
- Biomedical sciences
- Chemistry
- Computer science
- Computer science and philosophy
- Earth sciences (geology)
- Engineering science
- Human sciences
- Materials science
- Mathematics
- Mathematics and computer science
- Mathematics and philosophy
- Mathematics and statistics
- Medicine
- Physics
- Physics and philosophy
- Psychology (experimental)
- Psychology, philosophy, and linguishtics

www.admissions.ox.ac.uk/courses

Admissions by course (2013)

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	App	Acc	%S
Biochemistry	399	90	22.6
Biological sci	428	111	25.9
Biomedical sci	193	33	17.1
Chemistry	638	180	28.2
Computer science	147	23	15.6
CS & philosophy	31	9	29.0
Earth sciences	116	34	29.3
Engineering sci	720	157	21.8
Human sciences	155	31	20.0
Materials science	79	33	41.8

	App	Acc	%S
Mathematics	917	161	17.6
Maths & CS	119	28	23.5
Maths & philosophy	90	16	17.8
Maths & statistics	172	22	12.8
Medicine	1471	149	10.1
Physics	1011	173	17.1
Phys & philosophy	146	16	11.0
Psychology (exp)	212	50	23.6
Psych, phil, ling	161	29	18.0

Admissions (2013 entry)

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- Almost all of our students have at least AAA or equivalent
- 48% male, 52% female (varies widely by subject)
- UK students' schools
  - 56.8% state sector
  - 43.2% independent

Typical conditional offers

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- Most science courses make A*AA conditional offers
- A*A*A courses
  - Chemistry
  - Engineering science
  - Mathematics
  - Mathematics and philosophy
  - Mathematics and statistics
- Details vary with each course
- Oxford does not participate in UCAS clearing