Department of Physics
Clarendon Laboratory
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UNIVERSITY OF OXFORD

From the Physics Admissions Coordinator

Report on the Physics Admissions Exercise 2021

In 2021, Oxford Physics received a total of 1785 applicants for places in Physics or Physics and Philosophy, a decrease of 20 (1.2%) on the 2020 figures. Of these, 1759 applicants were contesting the 200 places available for 2022 admission places, or approximately 9.0 applicants per place, with 26 applicants seeking deferred places.

Of all applicants, 1233 (69.1%) were classified as "UK" applicants (66.4% in 2020), 130 (7.3%) were classified as EU but not UK (8.8 % in 2020), and 422 (23.6%) were classified as non-EU (24.8% in 2020).

Across the collegiate university, Physics aims to interview around 2.5 applicants per place. For this short-listing, we used the results of the Physics Aptitude Test (PAT) as well as all other contextual information described at http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/decisions/contextual-data to reduce the number of applicants to around 2.5 per place.

In recent years, a contextualised GCSE[1] (cGCSE) score produced by the University has also been used as part of the shortlisting. The cGCSE score was based on the ability to compare GCSE results between applicants from schools that are contextually 'similar'. However, the circumstances of GCSE grades in 2020 (where they were awarded by teacher assessment rather than external exams) made this less reliable, as differing schools were more or less generous in the teacher-asssessed grades awarded.

The PAT has been run for many years, and it is a consistent predictor of future performance at Oxford. The test is set to a defined syllabus and both the content and draft questions are checked by school teachers to ensure that the level is appropriate. Maths and physics elements are mixed together into a single two-hour paper. Each question is separately double blind-marked (markers focus on individual questions to ensure consistency of approach). Further details, including the admissions criteria and sample papers, can be found on the Oxford Physics Admissions website at: https://www.physics.ox.ac.uk/study/undergraduates/how-apply/admissions-procedures-physics-courses .

When the PAT is written, it is intended to be at a broadly similar difficulty level from year to year, although the actual difficulty of a paper is never known until the exam has been taken. In terms of marks, this year's PAT was on the harder side, with a mean mark of 43.1% (similar to the 2019 paper with its mean of 41%). The low average mark may, however, also reflect the general disruption to applicants' educations during the pandemic.

[1] The cGCSE score was expressed as the number of standard deviations the applicant is away from their 'expected' number of A*/9/8 grades and was typically be in the range −3 to +3, expressed to 2 decimal places. Overseas applicants, or others lacking GCSE information, were assigned a neutral cGCSE score of zero.

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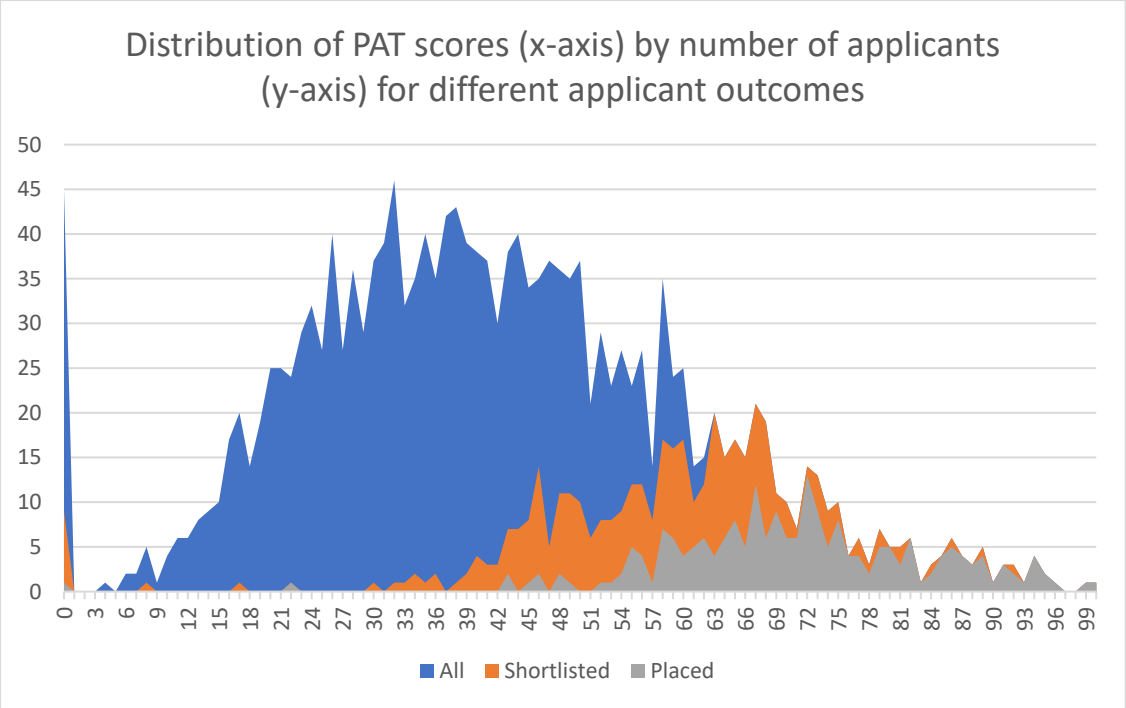

We are extremely grateful to all schools and test centres for hosting applicants for the PAT test. We are also grateful for the yearly advice we receive from schools and teachers on adapting the PAT to changes in school syllabi, and we also expect to continue to make further changes reflecting such advice in subsequent years.

There were a significant number of declared special circumstances, medical certificates or letters drawing attention to adversities in applicants' personal lives that may have affected performance or ability to participate in the test. These were taken into account in making shortlisting and offer decisions.

The marks applicants achieved on the main PAT test ranged from 4% to 100%, with a mean mark of 43.1% (49.5% in 2020 and 41.5 % in 2019) and a standard deviation of 17.7% (15.9% in 2020 and 16.8 % in 2019). More details are shown in the graph above. The spike at '0' includes applicants who withdrew, applicants who did not register for the PAT test, applicants who had Covid or other special circumstances on the date of the PAT test, and applicants who have to do compulsory military service for whom acceptance is carried over from a previous admissions round.

One notable trend with the PAT continued this year: of the top 100 applicants by PAT mark, only around a quarter of these had all their secondary schooling within the UK educational system (either state or independent sectors).

The principal determinant for shortlisting this year was the C-score. Pre-interview this is identical to the PAT:

C-score pre-interview = PAT mark.

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For December 2020 applicants, their GCSEs were taken pre-Covid and were unaffected by the pandemic. This was no longer true in December 2021 and so no cGCSE factor was included this year.

The applying cohort had been the subject of substantial disruption to their education since the pandemic started in March 2020. For UK applicants, this involved school closures in summer term 2020 and the spring term of 2021 and, even when schools were open, frequent closures of year groups or classes due to self-isolation requirements.

Our aim in the admissions process is to take the applicants we judge to have the most ability and potential to benefit from our course and teaching, and to make this decision based on the intrinsic strengths of applicants rather than on the temporary effects of school closures.

Analysis of the distribution of PAT scores by demographic compared to previous years suggested a clear pandemic effect. It was therefore decided to set a higher automatic shortlisting threshold than in previous years, to allow for a higher fraction of shortlisted applicants with PAT scores below the automatic threshold but where application forms showed other evidence of excellence or mitigating circumstances. This automatic threshold was set at 63%.

The 260 applicants with PAT scores equal or higher than 63% were automatically shortlisted for interview, with a further 38 applicants with slightly lower scores also automatically shortlisted after the inclusion of contextual data, giving a total of 298 automatically shortlisted applicants (400 in 2020 and 457 in 2019). Reflecting the huge disruption to normal educational patterns since March 2020, a further 202 applicants (compared to 83 in 2020 and 40 in 2019) were also shortlisted, who were below the automatic thresholds but whose application forms showed other evidence of excellence or mitigating circumstances.

A total of 500 applicants were shortlisted and invited for (remote) interview this year. A key goal of the Oxford admissions process is that the probability of admission should not depend on the applicant's choice of college. Short-listing is therefore followed by a reallocation process, in which applicants are transferred from first-choice colleges with a large ratio of applicants per place, to colleges with a smaller ratio of applicants per place. This aims to ensure that, for each college, the ratio of interviewed first-choice applicants to places is as close as possible to 2.5 to 1. This year 60 applicants were reallocated. Reallocation has been practised by the University for many years, assuring that all strong applicants have the same chance of obtaining places at Oxford, although possibly not at their first-choice college. Reallocation is not an indicator of the strength or weakness of an applicant – this year reallocated applicants had PAT scores varying from around 40% to 89%.

Every short-listed applicant has two interviews given by a first-choice college and one given by a randomly allocated second-choice college. Each interview is marked out of 10 based on the academic judgement of the interviewing tutors. The scale is such that a mark of 6 broadly corresponds to ‘acceptable’; 7 corresponds to ‘good’; and an average interview mark of 8 or higher will almost certainly result in an offer. Approximately 1% of interviews are scored as ‘10’.

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Applicants are assessed based on the totality of information about the applicant with no one interview, by itself, decisive. While the majority of accepted applicants have three good interviews (at least as viewed by the interviewers), around 70 accepted applicants had one interview which scored less than a 7, while several accepted applicants had one interview scored below 6. It is very hard for applicants to assess their own interview performance and extremely common for applicants to think good interviews have gone badly.

For applicants offered a place, the average interview mark this year was 7.95 (7.92 in 2020). We would like to express our particular gratitude this year for the hard work of both applicants' parents (for applicants interviewing from home) and teachers and IT staff of applicants' schools (for those interviewing from school) for their work in facilitating the interviews and making appropriate spaces available.

After the interviews, the three interview marks are combined into a single score (out of 100). To guide admitting tutors, an overall ranking was produced based on the post-interview C-score:

$$\text{Post-Interview C-score} = (\text{PAT mark out of 100}) + 2 \times (\text{Interviews out of 100})$$

This ranking is for guidance only; all applicants are assessed individually based on their C-scores, PAT scores, interview results, and all information on the UCAS form, including contextual information, and then compared centrally against all applicants applying to Oxford Physics. It is extremely rare for applicants ranked in the top 100 not to receive an offer and there are typically around ten offers made each year to applicants ranked below 250.

To ensure that the strongest applicants obtain places, all colleges have access to information on all applicants through a central database, and colleges are actively encouraged to flag up strong applicants they will be unable to offer a place to themselves. As a result, 24 applicants were offered a place at a college that had not interviewed them at all, either as first or second college.

Ultimately, 212 offers were made for entry in 2022. These include 12 open offers, in which a college is not specified at the time of the offer. These are designed to cover the anticipated withdrawal rate of applicants who are made an offer and subsequently either decline the offer or fail to make the offer conditions. The offers include 13 offers made for Physics and Philosophy. A further 6 deferred offers were made for entry into Physics in 2023.

Every year there are applicants that we would have liked to have offered places to, but are unable to do so because of the finite capacity of the course. We also know that every year we turn down applicants who, in the end, turn out to be stronger than some of the applicants we do offer places to. We wish all applicants enjoyment and understanding in their future pursuits of physics.