



Department Application Gold Award



ATHENA SWAN GOLD DEPARTMENT AWARDS

A Gold department award recognises sustained progression and achievement, by the department, in promoting gender equality and addressing challenges particular to the discipline. A well-established record of activity and achievement in working towards gender equality should be complemented by data demonstrating continued impact. Gold departments should be beacons of achievement in gender equality, and should champion and promote good practice to the wider community.

Note: Not all institutions use the term 'department'. There are many equivalent academic groupings with different names, sizes and compositions. The definition of a 'department' can be found in the Athena SWAN awards handbook.

COMPLETING THE FORM

DO NOT ATTEMPT TO COMPLETE THIS APPLICATION FORM WITHOUT READING THE ATHENA SWAN AWARDS HANDBOOK.

This form should be used for applications for Gold department awards.

You should complete each section of the application.

If you need to insert a landscape page in your application, please copy and paste the template page at the end of the document, as per the instructions on that page. Please do not insert any section breaks as to do so will disrupt the page numbers.

WORD COUNT

The overall word limit for applications are shown in the following table.

There are no specific word limits for the individual sections and you may distribute words over each of the sections as appropriate. At the end of every section, please state how many words you have used in that section.

We have provided the following recommendations as a guide.

Gold Department application	
Word limit	13,000
<i>Recommended word count</i>	
1. Letter of endorsement	500
2. Description of the department	500
3. Self-assessment process	1,000
4. Picture of the department	2,000
5. Supporting and advancing women's careers	7,000
6. Case studies	1,500
7. Further information	500

Acronym List

ADD	Academic Duties Database
CUWiP	Conference for Undergraduate Women in Physics, U.K.
E&D	Equality and Diversity
EDC	Equality and Diversity Committee
HoD	Head of Department
HoSD	Head of Sub-Department
HR	Human Resources
IoP	Institute of Physics
MPLS	Mathematical, Physical and Life Sciences (Division)
OLI	Oxford Learning Institute
PAT	Physics Aptitude Test

PDLC	Post Doc Liaison Committee
PMC	Physics Management Committee
REF	Research Excellence Framework
RoD	Recognition of Distinction
SDD	Staff Development Discussion

Name of institution	University of Oxford	
Department	Physics	
Focus of department	STEMM	
Date of Gold application	15 May 2018	
Date of current Silver award	November 2014	
Institution Athena SWAN award	Date: April 2017	Level: Bronze
Contact for application <small>Must be based in the department</small>	Prof. Niranjan Thatte	
Email	niranjan.thatte@physics.ox.ac.uk	
Telephone	01865 273412	
Departmental website	www2.physics.ox.ac.uk	

1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

Recommended word count: 500 words (actual 626 words)

An accompanying letter of endorsement from the head of department should be included. If the head of department is soon to be succeeded, or has recently taken up the post, applicants should include an additional short statement from the incoming head.

Note: Please insert the endorsement letter **immediately after** this cover page.

Department of Physics

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Parks Road, Oxford OX1 3PU



Head of Physics
John Wheeler, Professor of Physics

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Executive Assistant: Niámh Coll
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Niamh.Coll@physics.ox.ac.uk

Dear Colleagues,

It is my pleasure to support this Athena SWAN Gold application in the strongest possible terms. Our aim is to embed Athena SWAN principles in everything we do from departmental leadership through to the education of future generations of physicists.

The Head of Physics is elected by the permanent academic staff to serve for a five year term. Exceptionally, I have served a second three year term and will be stepping down in August. I pioneered the inclusion of Equality & Diversity responsibility in the duties of all HoDs and other leadership roles within the MPLS Division; this has subsequently been adopted throughout the University. During the recent exercise to choose my successor, both candidates met with Professor Helen Byrne (Divisional E&D lead) to ensure that they were fully briefed and urge them to award due weight to E&D matters in the years to come. Professor Ian Shipsey has now been appointed and states "People are our greatest asset. We celebrate diversity. Accordingly, Oxford Physics is fully committed to gender equality. We have created and will maintain an environment for all members of the department: students, trans staff, professional and support staff, and academics that is inclusive and respectful with a commitment to equality of opportunity for all."

The post of E&D Committee Chair is held by a senior academic for a 3 year period; the holder coordinates E&D activities, and reports on E&D matters to the PMC for which they are a standing agenda item. Following on the excellent work done by Professor Leslie Gray, we appointed Professor Nirnanjan Thatte as E&D Chair in Sep 2015. Appointing a man from an ethnic minority as Chair was a deliberate decision designed to emphasize that (a) we have gone beyond seeing gender balance as an issue that only concerns women and (b) we are broadening our E&D remit to include areas other than gender.

We now run a very thorough three stage faculty recruitment process, including a visit of several days by each shortlisted candidate during which they give a research seminar and have the opportunity to find out all the things about working here that are not immediately obvious. This process is much appreciated by the candidates and is clearly worth the hard work involved.

PDRAs are the most transient part of our population. We have developed our careers event, involving former members who have moved on to varied occupations and who are happy to share experiences via a panel discussion. We provide comprehensive support to those applying for fellowships; many senior academic staff contribute to providing mock interviews and our success rate is very good.

We pioneered funded parental leave for graduate students, thus giving them the same benefits as available to employees. This was subsequently adopted by MPLS.

We have made significant changes to the structure of the undergraduate course to counter the fact that women disproportionately chose the BA rather than the MPhys, effectively abandoning a career in physics. Many years of admissions experience has shown that women do worse than men in the Physics Aptitude Test (PAT). After many ineffective changes to the test, and extensive data analysis, we are seeking to de-emphasize the PAT in admissions decisions. Both these changes are new, we will monitor their impact carefully over the next few years.

We believe that the Athena SWAN agenda acts to improve the working environment and provide equality of opportunity for everyone and that we have come a long way on that journey since 2010. It is however the case that there is much left to do.

I confirm that the information presented in the application (including qualitative and quantitative data) is an honest, accurate and true representation of University of Oxford's Physics Department.

Yours sincerely

John Wheeler

2. DESCRIPTION OF THE DEPARTMENT

Recommended word count: 500 words (453 words)

Please provide a brief description of the department, including any relevant contextual information. Present data on the total number of academic staff, professional and support staff and students by gender.

The Oxford Physics Department is one of the largest physics departments in Europe. Located centrally in Oxford in the University's Science Park, along with the majority of science departments, it is based on two sites across a relatively busy road. A major addition to the Physics estate is the new Beecroft building (occupation April 2018)(see section 5.6(iv)). Oxford Physics is part of the Mathematical, Physical and Life Sciences Division of the University, comprising 12 departments.



Figure 1: An artist impression (interiors visible) of the recently completed Beecroft building.

The last REF(2014) exercise rated Oxford Physics as having the largest proportion (and absolute number) of 4* research outputs (4* implies *world leading* in terms of originality, significance and rigour). The department's environment had the highest rating of 85% at 4* level (jointly with Cambridge).

The department is in receipt of a Juno Champion award (Nov 2016) from the Institute of Physics. The Juno panel commended the department on having maintained momentum for its E&D activities throughout the past few years. The new Juno Principle 6 is already embedded in department culture. Our beacon activity, CUWiP, has been nominated for the Vice-Chancellor's Diversity Awards 2018.

Table 1: Staff and student headcount by gender (student data as per University records on 1 Dec 2017; staff data as per University records 31 July 2017)

	Female	Male	Total	% female
Undergraduate students	138	530	668	20.7%
Postgraduate students (research)	69	249	318	21.7%
Research staff (PDRAs)	43	203	246	17.5%
Academic Staff (non-professorial)	5	24	29	17.2%
Academic Staff (professorial)	11	75	86	12.8%
Professional and Support Staff	57	96	153	37.3%

The department is a multi-cultural community, currently consisting of 115 academic staff, 246 research staff, 153 support staff, 318 postgraduate and 668 undergraduate students (Table 1) from a very wide range of nationalities, ages and backgrounds.

Core research activities are broadly based in 6 sub-departments (Figure 2): Astrophysics (Astro), Atmospheric, Oceanic and Planetary Physics (AOPP), Atomic and Laser Physics (ALP), Condensed Matter Physics (CMP), Particle Physics (PP) and Theoretical Physics (Theory). The substantial overlap between sub-departments (e.g. ALP and CMP, or Astro and AOPP) leads to extensive collaboration that maximises the strengths and broad range of the department.

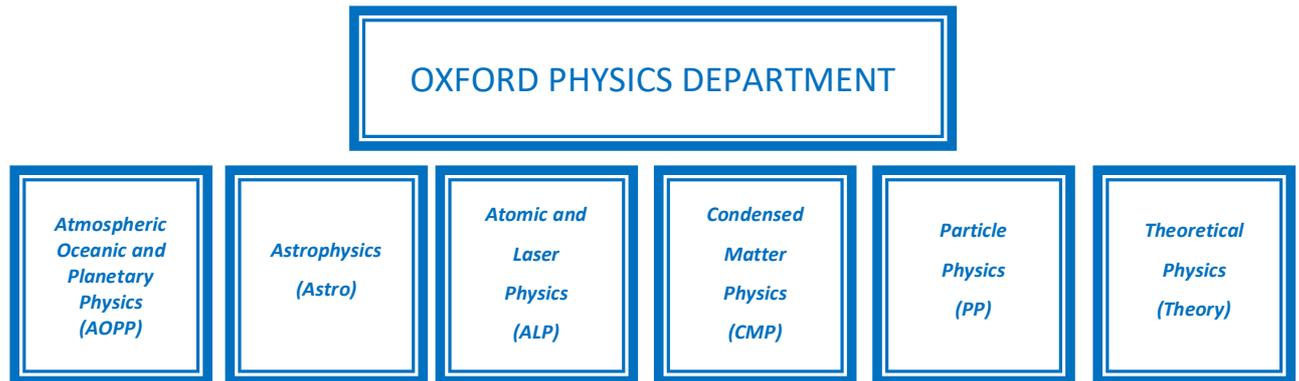


Figure 2: Structure of the Oxford Physics Department

The department is led by the Head of Physics (Professor John Wheeler - HoD), supported by two Associate Heads, one of whom is a woman, and advised by the Physics Management Committee (PMC), which oversees all aspects of the department's management and strategic priorities. The PMC consists of the 6 Heads of Sub-departments (HoSD), 2 elected members and various ex-officio members, including the Chair of the Equality and Diversity Committee (EDC).

Oxford is a collegiate University (see Panel guidance for Oxford AS submissions). All students, both undergraduate and postgraduate, and the majority of academic staff, are members of a college. Most research posts (PDRAs and independent fellows) are based solely in the department. Professional and support staff are employed and line managed by the department, and play an active role in its governance through a number of committees (see section 5.6(viii)) that report to PMC.

Figure 9 and Table 1 show the gender balance of staff and students within Oxford Physics. Comparisons with the sector average are detailed in Sections 4 and 5 of this submission.

3. THE SELF-ASSESSMENT PROCESS

Recommended word count: 1000 words (650 words)

Describe the self-assessment process. This should include:

- (i) a description of the self-assessment team

The Athena SWAN self-assessment team consists of all members of the Equality and Diversity Committee (EDC). The EDC was formed in 2010 to specifically help with E&D governance, its establishment pre-dates the first Athena SWAN submission in 2012. Members span a breadth of experience at all levels in the Department. Of particular note

has been the strong support of Professor Wheater, the Head of Department (HoD), an active member since the Committee's inception in 2010. Since 2014, the Chair of the EDC serves as an ex-officio member of the PMC, promoting E&D at the highest level of departmental governance. In 2015, N. Thatte, who also chairs the Postdoctoral researcher liaison committee (PDLC) took over as EDC Chair from L. Gray, ensuring that the needs of the most transient staff group are adequately addressed.

The EDC is strongly committed to promoting equality of opportunity for all members of staff and students, in joining the department, in personal development and career progression. The simple reasoning is that if everyone in Oxford Physics feels "at home" in their environment (treated fairly and respected), they will be able (and willing) to give their best.

Membership of the self-assessment team (EDC)

Members of the EDC serve a three year term, which is renewable. Membership is reviewed annually by the HoD, in consultation with the EDC Chair and the Committee secretary to ensure representation by interested staff in all categories, volunteers are sought at the start of the academic year to replace outgoing members. In addition, the EDC has several ex-officio members, whose roles naturally lead to their participation.

	<p>Prof Niranjan Thatte <i>Chair of Committee & Professor of Astrophysics</i></p> <p>Niranjan Thatte has two school-age children, his wife is also a Professor. He also chairs the Postdoc Liaison Committee.</p>
<p>Prof Daniela Bortoletto <i>Professor of Experimental Particle Physics</i></p> <p>Daniela Bortoletto is passionate about increasing female participation in physics. She has inspired and led CuWiP, our beacon activity.</p>	
	<p>Ms Michelle Boshier <i>Administrator for Theoretical Physics</i></p> <p>Michelle Boshier has two children still in education. She works flexibly, including working from home.</p>

	<p style="text-align: center;">Dr Sam Vinko <i>Independent Research Fellow</i></p> <p>Sam Vinko has a young daughter and a partner working full-time in research. He wants to increase the uptake of science subjects by young girls.</p>	
	<p style="text-align: center;">Ms Niámh Coll <i>Secretary to Committee & Executive Assistant to HoD</i></p> <p>Niámh Coll is committee secretary and acts as a key liaison person between the various departmental committees.</p>	
<p style="text-align: center;">Dr Hannah Lingard <i>Senior Research Facilitator</i></p> <p>Hannah describes herself as a feminist and identifies as bisexual, she wants to make it easier for men to be carers.</p>		
	<p style="text-align: center;">Prof Hans Kraus <i>Head of Teaching (ex-officio member)</i></p> <p>Hans Kraus represents undergraduate teaching at the EDC, and ensures teaching relevant policies and recommendations are implemented.</p>	
<p style="text-align: center;">Ms Julia Lindon <i>HR Manager (ex-officio member)</i></p> <p>Julia Lindon is the Department's HR Manager and serves on the E&D committee in an ex-officio capacity.</p>		
	<p style="text-align: center;">Ms Daisy Hung <i>MPLS E&D Facilitator (advisory role)</i></p> <p>Daisy develops divisional strategy in all areas of equality and diversity in relation to staff and students.</p>	

<p style="text-align: center;">Mr Jacques Bara</p> <p style="text-align: center;"><i>Undergraduate (Secretary of Physics Joint Consultative Committee)</i></p> <p>Jacques Bara represents young physicists, liaising with the department to resolve any issues raised by them.</p>	
	<p>Mrs Carrie Leonard-McIntyre</p> <p><i>Disability Officer (ex-officio member)</i></p> <p>Carrie Leonard-McIntyre is from South Africa, with interests in minorities and special needs.</p>
<p style="text-align: center;">Ms Alexandra Rigby</p> <p style="text-align: center;"><i>Graduate student</i></p> <p>Alexandra Rigby is a DPhil student in Atomic and Laser Physics. She represents the graduate students.</p>	
	<p>Mr Simon Probert</p> <p><i>Deputy Administrator and Head of Finance (ex-officio member)</i></p> <p>Simon Probert is married with two young children, and knows the complexities of juggling busy lives where both partners work full time.</p>
<p style="text-align: center;">Dr Laura Chen</p> <p style="text-align: center;"><i>Postdoctoral Researcher</i></p> <p>Laura Chen is a researcher in Atomic and Laser physics. She represents PDRAs and Women in Physics on the EDC.</p>	
	<p>Dr Aprajita Verma</p> <p><i>Senior Research Fellow</i></p> <p>Aprajita Verma has a young daughter and a husband also in research. She is aware of the pressures of family and short-term contracts.</p>

	<p style="text-align: center;">Prof John Wheeler <i>Head of Department (ex-officio member)</i></p> <p><u>John Wheeler</u> is HoD since 2010. He is an active and strong promoter of equality and diversity in the department.</p>	
	<p>Prof Adriaan Louis <i>Professor of Theoretical Physics</i></p> <p><u>Ard Louis</u> is the father of two young children, and juggles family and career. He campaigned for paid parental leave for postgraduate students.</p>	
	<p style="text-align: center;">Prof Matt Jarvis <i>Professor of Astrophysics</i></p> <p><u>Matt Jarvis</u> has a grown-up daughter, and parental responsibilities influenced his work-life balance. He strongly believes in a diverse department.</p>	
	<p>Dr Leah Morabito <i>President, Women in Physics Society</i></p> <p><u>Leah Morabito</u> is a researcher in Astrophysics, and President of the Women in Physics Society.</p>	
	<p style="text-align: center;">Dr Rebecca Bowler <i>Hintze Research Fellow</i></p> <p><u>Rebecca Bowler</u> was President of the Women in Physics Society from 2015-2017. She wishes to build a supportive and welcoming environment.</p>	
	<p>Ms Nicola Small <i>Head of Administration (ex-officio member)</i></p> <p>Nicola Small has three children in education and took a career break from accountancy while her children were young, before returning full-time in 2009.</p>	

(ii) an account of the self-assessment process

The EDC meets termly (three times a year), with additional meetings as required (e.g. visits by successful gold application leads from other Universities, pilots of proposed new training, panel visits by the IoP Juno programme).

Agenda items at termly meetings include presentation of analysis of Staff and Student survey data, followed by discussion and action plans, considering proposed new initiatives and policies, sponsored nursery places, annual reports from CuWiP, the Women in Physics society, and reports from national and international conferences. Some of the training offered to staff was not-fit-for-purpose, so we have adopted a policy that EDC members pilot all training and provide feedback before it is rolled out across the department. We have done this successfully several times, most recently with anti-bullying and anti-harassment training, and responsible bystander training.

Table 2: Regular surveys coordinated by the EDC.

Group	Survey Focus	Years
Undergraduates	Gender differences	2015, 2016, 2017
Postgraduates	Student experience	2016, 2018 to come
PDRAs	Careers	2013, 2014, 2015, 2016, 2017
All staff	Staff experience	2016, 2018
Staff & postgraduates	Staff & student experience	2010, 2014

The EDC also provide detailed comments and feedback on draft applications and action plans for Athena SWAN and IoP Juno submissions. Both EDC and PMC review the complete application prior to submission. We also solicit feedback from the divisional Athena SWAN representative, and the University's E&D Advisor.

The EDC Chair and the HR Manager attend divisional Athena SWAN steering group meetings. These provide a forum to discuss and consult on issues of wider relevance across the division and the collegiate University, and to suggest new policies and initiatives at the divisional level. They also attend "Best Practice" workshops, which focus on sharing good practice across departments in recruitment, action plans, staff survey results, anti-bullying, mental health, race equality, ADD, focus groups, SDDs, mentoring.

(iii) plans for the future of the self-assessment team

The EDC will continue to have ownership of the Athena SWAN and IoP Juno action plans, and will be responsible for implementing the actions and assessing their impact. We are planning to devolve leadership of different elements of the E&D remit across the membership of the EDC, to ensure continuity and to gain a wider, more representative leadership.

Action(G6.3): Devolve leadership of E&D within the department by distributing areas of responsibility amongst members of the EDC.

With both the HoD and EDC chair changing in 2018, we have sought to future-proof the E&D activities by (i) writing them into job descriptions of key roles (ii) ensuring E&D is a

standing agenda item on all departmental committees and (iii) setting up a system of regular surveys (see Table 2) and their data analysis.

4. A PICTURE OF THE DEPARTMENT

Recommended word count: 2000 words (2177 words)

4.1. Student data

If courses in the categories below do not exist, please enter n/a.

(i) Numbers of men and women on access or foundation courses

N/A

(ii) Numbers of undergraduate students by gender

Full- and part-time by programme. Provide data on course applications, offers, and acceptance rates, and degree attainment by gender.

Table 3: Total number of undergraduate students in Oxford Physics by year and gender. Student data are as of 1 December of each year.

	Female	Male	Total	% female
2014	120	555	675	17.8%
2015	118	547	665	17.7%
2016	130	533	663	19.6%
2017	138	530	668	20.7%

We admit undergraduates to two full-time, four-year degree programmes – the MPhys Physics course and the MPhysPhil Physics and Philosophy course. As the intake for the MPhysPhil averages just 14 per year, we have combined the data for the two courses.

Students on the MPhys can exit after their 3rd year with a BA degree instead. Until 2016, students could register for either degree, and transfer between the two, subject to exam results. A minimum of a 2.1 at the end of the second year was required to continue to the 4th year of the MPhys. We found that this disadvantaged women in two ways: they were more likely to choose the BA initially, and were less likely to achieve the grades required to progress to the 4th year. Therefore, after considerable analysis and discussion (Figure 3 shows the differing self-perceptions of men and women undergraduates, with men more likely to rate themselves better), we changed to an “opt-out” model whereby all students initially apply for the MPhys degree (decisions about transferring to the BA are made early in the 3rd year), and have removed the qualification requirement. The change hasn’t propagated through to years 3 and 4, so we cannot assess impact yet.

Since 2014, the overall fraction of women undergraduates has been rising slowly (see Table 3 above), and is exactly in line with the sector average of 21% (data from Institute of Physics¹), and comparable to the proportion of girls studying A level Physics (20%).

¹ Students and Graduates in UK Physics departments, IoP Data Brief, July 2017

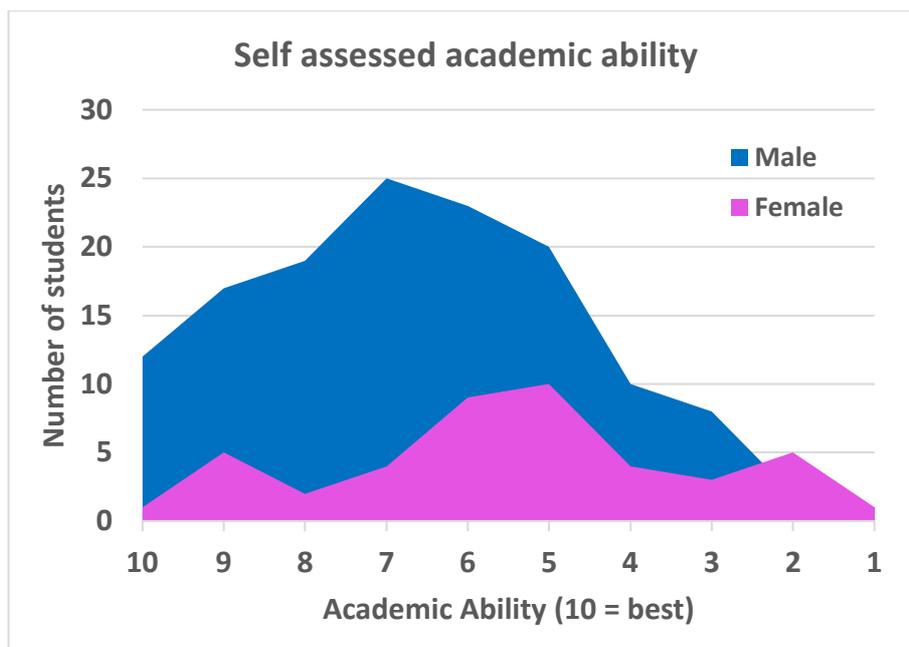


Figure 3: Self assessed academic ability of undergraduates (2016 survey)

Admissions: Candidates apply to, and are admitted by, colleges. Colleges require and arrange recruitment training (including unconscious bias) of all tutors involved in admissions. The department coordinates admissions across all colleges, ensuring that every candidate gets admitted on their merits, irrespective of which college they applied to. A Physics Aptitude Test (PAT) sat by all applicants in November is the main means of short-listing, and each short-listed candidate is interviewed three times, twice at their first-choice college, and once at a second choice college.

Table 4: Admission statistics for Physics (incl. Physics and Philosophy) at each stage of the process.

	Female							
	Applications		Shortlisted		Offers		Acceptances	
2014	296	24%	94	19%	37	18%	36	19%
2015	291	25%	102	21%	46	22%	42	22%
2016	337	27%	119	24%	48	23%	45	22%
2017	363	27%	96	19%	45	22%	36	19%
	Male							
	Applications		Shortlisted		Offers		Acceptances	
2014	955	76%	407	81%	169	82%	157	81%
2015	880	75%	385	79%	167	78%	153	78%
2016	895	73%	370	76%	160	77%	156	78%
2017	990	73%	410	81%	164	78%	151	81%

The number of applicants to the Oxford Physics undergraduate course have been rising steadily over the years (see Table 4 above), partly due to our outreach and access efforts, while the number of places has stayed fixed at around 200 each year. Our concerted efforts at improving access have borne fruit, and we have seen a steady increase in the fraction of women applicants (see Figure 4 below),

peaking at 27.4% in 2016. However, the proportion of women admitted has remained at around 20%. As Table 4 clearly shows, the proportion of women falls from application to short-listing, but remains relatively stable from short-listing through to acceptances.

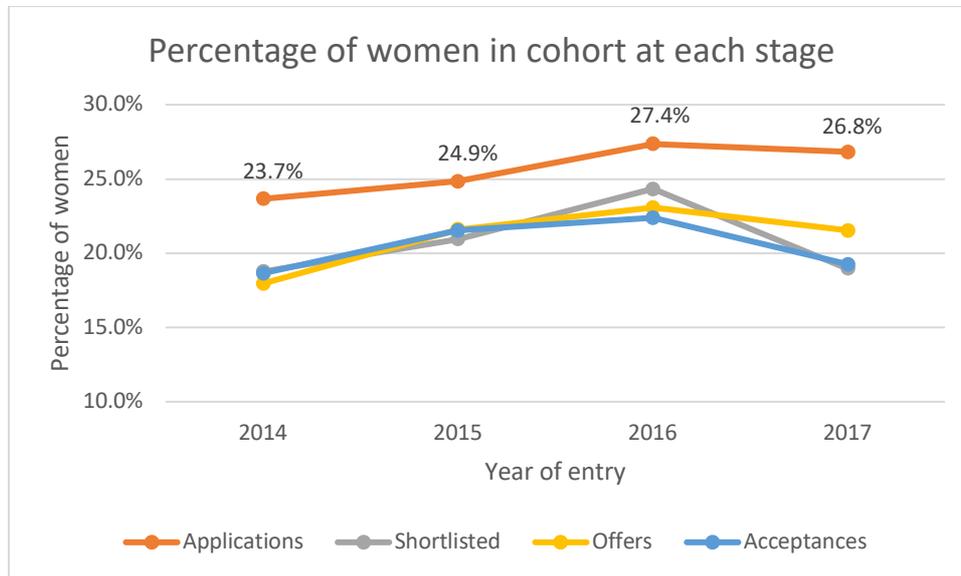


Figure 4: Percentage of women students as a proportion of the particular cohort at each stage of the admissions process

We have analysed this in depth and Figure 5 shows the standardised admissions measure for different entry criteria by gender. Women applicants do markedly better than men on their GCSE scores, about equal on A levels, but markedly worse on the PAT test (in 2017 mean score was 53.95/100 for men, 47.07 for women), and slightly worse at interview.

Action(G1.3): Improve information provided to candidates about the interview process to demystify it.

As the PAT test is used to select applicants for interview, we actively encourage selectors to consider carefully all women candidates whose PAT marks lie close to the cut-off. We have, over a number of years, analysed PAT results and made changes to it so as not to disadvantage women, but these have not had the desired impact. Consequently, we are now actively investigating a change to our selection criteria, so as to reduce the weight attached to the PAT score. In other words, we would use the PAT test to filter candidates who show poor problem solving abilities in maths and physics, but attach low weight to the test scores in the subsequent selection process. We hope that these measures will increase the proportion of women short-listed, and subsequently admitted.

Action(G1.2): Investigate refining the selection criteria (reducing the weighting of the PAT scores in final selection), implement changes and assess their impact in reducing the gender bias in the undergraduate admissions process.

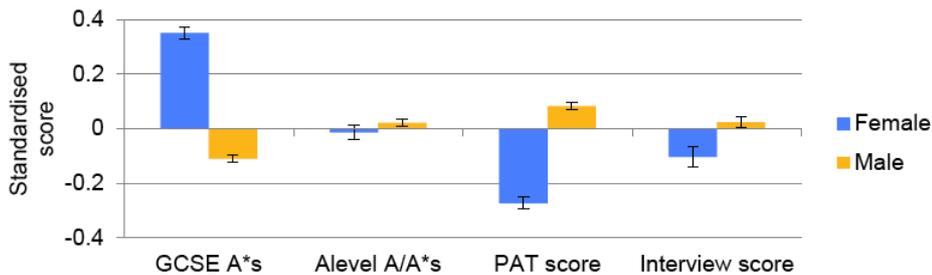


Figure 5: Standardised admissions measure attainment by gender, for the years 2010-2016. Error bars indicate +/- 1 SEM (standard error of the mean). Adopted from the Physics Admissions Process Review (Descriptive statistics) v3 by S. Cheadle.

Performance: Women perform less well than men on the undergraduate programmes. Table 5 shows the fractions of women and men attaining each level of qualification by year for the BA and the MPhys programmes.

Table 5 show six years' worth of data, emphasizing the fact that at the time of our last submission there was no discernible attainment gender gap, either for the MPhys or for the BA course. However, subsequent years' data show that the fraction of women gaining 1st class degrees is significantly lower than men for the MPhys course, and the number women gaining 2.ii is higher than men for the BA course, and a (worrying) gender gap is emerging.

A number of departments at Oxford experience a similar gender gap at finals and the University has formed an attainment gap working group to address the issue, with Physics representation. We have completed a detailed analysis of admissions and correlations with finals attainment (see Figure 5 above), and fed this into the group's analysis. The group will publish a report later this year and its recommendations will be discussed and implemented by relevant department committees.

Action(G1.5): Promote continued participation by the Physics department in the University's "Student Attainment Gap Working Group" and feedback "lessons learned" to tackling the attainment gap within Physics.

Table 5: Attainment for BA and MPhys by year and gender

	BA (3 year course) Finals results				MPhys (4 year course) Finals results			
	Female	% female	Male	% male	Female	% female	Male	% male
	First							
2012	3	37.5%	9	22.5%	6	27.3%	44	50.0%
2013	1	9.1%	4	10.5%	10	58.8%	37	46.3%
2014	3	23.1%	5	10.9%	7	63.6%	46	48.9%
2015	1	9.1%	2	6.7%	7	46.7%	54	64.3%
2016	0	0.0%	5	15.6%	4	36.4%	40	51.9%
2017	1	8.3%	3	9.4%	4	28.6%	37	50.0%
	2.i							
2012	4	50.0%	11	27.5%	13	59.1%	34	38.6%
2013	5	45.5%	16	42.1%	7	41.2%	33	41.3%
2014	5	38.5%	18	39.1%	4	36.4%	41	43.6%
2015	4	36.4%	9	30.0%	8	53.3%	29	34.5%
2016	3	42.9%	15	46.9%	7	63.6%	32	41.6%
2017	4	33.3%	16	50.0%	7	50.0%	33	44.6%
	2.ii							
2012	1	12.5%	17	42.5%	3	13.6%	7	8.0%
2013	4	36.4%	15	39.5%	0	0.0%	9	11.3%
2014	3	23.1%	22	47.8%	0	0.0%	6	6.4%
2015	6	54.5%	14	46.7%	0	0.0%	1	1.2%
2016	4	57.1%	10	31.3%	0	0.0%	5	6.5%
2017	7	58.3%	11	34.4%	3	21.4%	4	5.4%
	Third							
2012	0	0.0%	3	7.5%	0	0.0%	3	3.4%
2013	1	9.1%	3	7.9%	0	0.0%	1	1.3%
2014	2	15.4%	1	2.2%	0	0.0%	1	1.1%
2015	0	0.0%	4	13.3%	0	0.0%	0	0.0%
2016	0	0.0%	2	6.3%	0	0.0%	0	0.0%
2017	0	0.0%	2	6.3%	0	0.0%	0	0.0%
	Pass / Fail							
2012	0	0.0%	0	0.0%	0	0.0%	0	0.0%
2013	0	0.0%	0	0.0%	0	0.0%	0	0.0%
2014	0	0.0%	0	0.0%	0	0.0%	0	0.0%
2015	0	0.0%	1	3.3%	0	0.0%	0	0.0%
2016	0	0.0%	0	0.0%	0	0.0%	0	0.0%
2017	0	0.0%	0	0.0%	0	0.0%	0	0.0%

(iii) Numbers of men and women on postgraduate taught degrees

Full- and part-time by programme. Provide data on course application, offers and acceptance rates and degree completion rates by gender.

Physics does not run any postgraduate taught degree courses.

(iv) Numbers of men and women on postgraduate research degrees

Full- and part-time by programme. Provide data on course application, offers, acceptance and degree completion rates by gender.

Application numbers: Overall, the department has seen a strong and steady increase in application numbers from 486 in 2013-14 to 610 in 2017-18. Figure 6 shows that the fraction of women applicants (blue line) has stayed roughly constant over the period.

Student numbers across the sector have not grown as dramatically. Comparing data for the years 2014-15 to 2016-17 (for which we have consistent numbers), PG numbers across the sector have increased by 7.8% overall, with women increasing by 9.2%, and men by 7.3%.

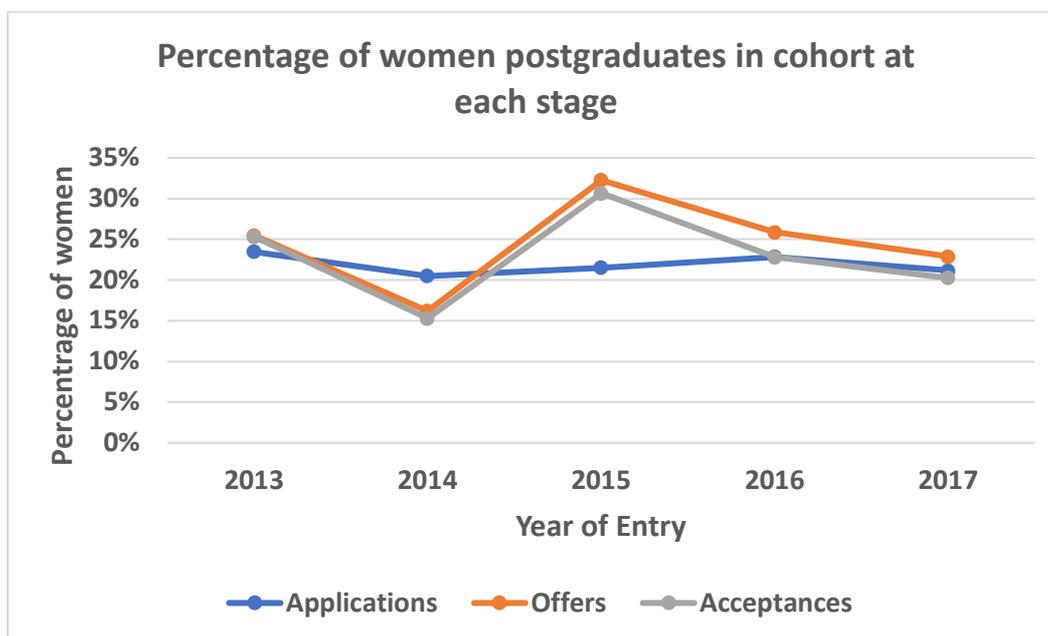


Figure 6: Applications, Offers and acceptances for Ph.D. students by gender 2013/14 – 2017/18

Figure 6 shows the proportion of women admitted to Physics over the last five cycles. The average over this period is 23%, compared to the sector average of 25% (data for three years only, but the sector average is fairly constant). The Oxford proportion varies wildly from a low in 2014-15 of 15% to a peak the following year (2015-16) of 31% (see Figure 6 and Table 6).

Table 6: Postgraduate admissions statistics at each stage of the process over the last 5 years.

	Female					
	Applications		Offers		Acceptances	
2013	114	23%	39	25%	21	25%
2014	102	20%	23	16%	13	15%
2015	123	22%	40	32%	23	31%
2016	134	23%	37	26%	21	23%
2017	129	21%	27	23%	15	20%
	Male					
	Applications		Offers		Acceptances	
2013	372	77%	114	75%	62	75%
2014	396	80%	119	84%	72	85%
2015	449	78%	84	68%	52	69%
2016	452	77%	106	74%	71	77%
2017	481	79%	91	77%	59	80%

Our female applicants are slightly less likely to accept their offer than their male counterparts: 56% in 2017/18, as opposed to 64% of males, these ratios are relatively consistent with average of the period covered in Table 6 at 53% and 61% respectively F:M. The main outcome of this analysis is that we are not attracting sufficient women applicants, as those that apply are only slightly less successful than men at securing a place.

Action(G2.3): Look at student-supervisor relationships to eliminate unconscious bias, and ensure that there is no unconscious bias in informal queries about Ph.D. studentships, by documenting them.

Sector

2016-2017		
Male	2715	
Female	895	25%
Total	3610	
2015-2016		
Male	2590	
Female	840	24%
Total	3430	
2014-2015		
Male	2530	
Female	820	24%
Total	3350	

Oxford

2017-2018		
Male	59	
Female	15	20%
Total	74	
2016-2017		
Male	71	
Female	21	23%
Total	92	
2015-2016		
Male	52	
Female	23	31%
Total	75	
2014-2015		
Male	72	
Female	13	15%
Total	85	
2013-2014		
Male	62	
Female	21	25%
Total	83	

Average

Male	7835	
Female	2555	24.6%
Total	10390	

Average

Male	316	
Female	93	22.7%
Total	409	

Figure 7: Ph.D. student sector benchmark² comparison by gender 2013/14 – 2016/17

Table 7: postgraduate admission statistics by sub-dept and gender (4 year average)

	Applications		Accepts		
	Female	Male	Female	Male	% female
Astro	31	68	3	9	25%
AOPP	10	19	2	5	29%
ALP	16	66	3	16	16%
CMP	29	73	6	14	30%
Particle	13	40	4	12	25%
Theory	20	151	1	10	9%

We currently admit to a number of sub-departments (SD) and application rates from women vary across these subject areas with Theoretical Physics attracting the lowest proportion of female applicants (9%). Atomic and Laser Physics (ALP) also attract proportionally fewer female applicants (16%). While it is likely that the trend in theoretical physics is sector wide, the Department is keen that there is parity across subject areas and will be implementing admission to a single DPhil from 2019-20 onwards, this will give us greater commonality in relation to how students are admitted and administered while on course and all publication literature will be

² HESA Student Record [2014-17] ©Higher Education Statistics Agency Limited

consistent and include positive representations of females (and those with other protected characteristics). Family friendly policies will be clearly highlighted. The Department appointed a Head of Student Administration in Sep 2017, whose role includes the monitoring and oversight of data and actions to improve the gender balance of our population.

Action(G2.1): Implement a single DPhil across all sub-departments with a coherent and consistent admissions process. Promote female friendly aspects in published and online literature.

	2011/12	2012/13	2013/14
Female	3.77	3.68	3.46
Male	3.83	3.69	3.52

Figure 8: Ph.D. completion rates in years by cohort

Degree completion: Completion rates can be calculated in many ways, but when taken as an average time of total completions, then males and females perform comparably, as shown in Figure 8. While these figures are positive, they do mask some patterns which we are keen to address more actively. When we look at the *number* of students that submit within four years, as shown in Table 8, females do less well than males. When we drill further into this data at sub departmental level we do see differences in performance, with Astrophysics and ALP being the most negatively biased (women take longer), whilst AOPP and Particle Physics are positively biased. Despite the small numbers, and we will actively seek to target actions in those specific areas. These actions will include holding focus groups with female students in specific sub-departments to understand their experiences of graduate studies.

Table 8: completion rates by number of students and gender

Gender	Cohort	<49 months	Total	% <49 months
Female	Avg 2003/4 - 2010/11	8	16	50%
	2011/12	11	18	61%
	2012/13	12	16	75%
	2013/14	13	20	65%
Male	Avg 2003/4 - 2010/11	39	52	76%
	2011/12	40	50	80%
	2012/13	54	63	86%
	2013/14	48	60	80%

(v) Progression pipeline between undergraduate and postgraduate student levels

Identify and comment on any issues in the pipeline between undergraduate and postgraduate degrees.

There is a slightly higher fraction of women at postgraduate levels compared to undergraduates. We recognise that these are different populations (few Oxford undergraduates progress to postgraduate studies here), with a much larger international postgraduate intake.

4.2. Academic and research staff data

(i) Academic staff by grade, contract function and gender: research-only, teaching and research or teaching-only

Look at the career pipeline and comment on, and explain any differences between, men and women. Identify any gender issues in the pipeline at particular grades/job type/academic contract type.

The department does not employ any “teaching-only” academic staff. All academic staff have contracts that stipulate both teaching and research as part of their job description, only the proportion varies slightly from person to person. This is accounted for in the workload model (ADD, see below).

Post-doctoral researchers and holders of independent fellowships (e.g. Royal Society fellows, Marie Curie fellows, EPSRC advanced fellowship holders) have research-intensive job descriptions, however, they are both allowed to, and actively encouraged to teach. Usually, this takes the form of college tutorial teaching, or laboratory demonstrating.

Academic and research staff can be broken down into several categories, as explained in the panel guidance for Oxford document provided separately. The total headcount of academic and research staff over the last five years are presented in Table 9 below.

Table 9: Academic staff numbers by gender and job title over the last five years.

University of Oxford Physics Department									
	Research staff			Academic staff (non-professorial)			Academic staff (professorial)		
	Female	Male	% female	Female	Male	% female	Female	Male	% female
2013	43	139	23.6%	8	44	15%	8	47	15%
2014	42	174	19.4%	6	36	14%	13	62	17%
2015	50	193	20.6%	5	33	13%	12	67	15%
2016	48	207	18.8%	5	28	15%	12	70	15%
2017	43	203	17.5%	5	24	17%	11	75	13%
HESA ³ + IoP Benchmarking data (sector average)									
	Research staff (fixed term)			Academics (non-professorial)			Academic staff (professorial)		
2017	240	920	20.7%	146	824	15.1%	89	716	11%

Since 2013, the overall number of women academics has remained at 16, whilst the number of men has increased from 91 to 99 (predominantly due to senior researchers being awarded professorial title), meaning that the proportion of female academics has declined slightly, from 18% to 16%.

³ HESA Staff Record [2016-17] © Higher Education Statistics Agency Limited

Academic staff can be broken down into several categories, as shown in Table 10 below. Our one female statutory professor retired in 2014, her replacement was male. However, five female APs have been awarded the title of Professor in the University's Recognition of Distinction (RoD) exercise (see 5.1(iii) below), meaning the fraction of women professors has increased to 15%, well above the national average (11%). At the other end of the scale, for department lecturers, the number of men has declined, boosting the fraction of women lecturers.

Recruitment to academic posts is infrequent (see section 5.1(i)), and significant changes to the gender balance of these posts will take time.

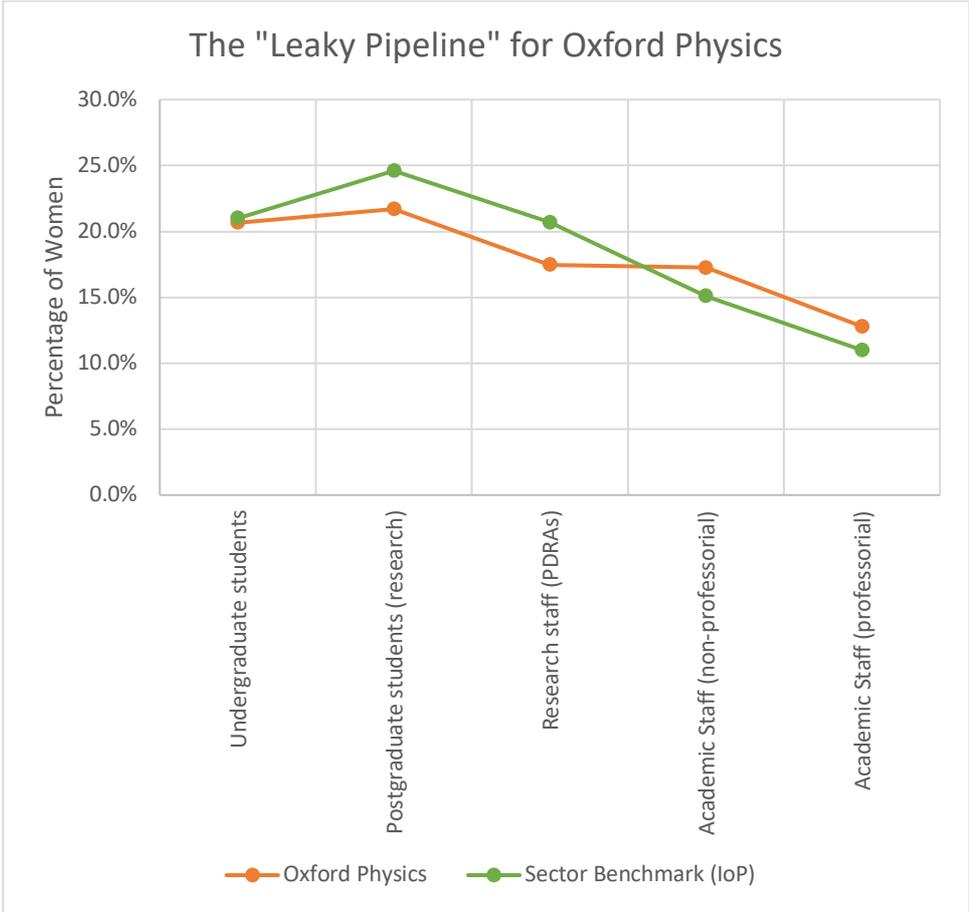


Figure 9: Gender balance within Oxford Physics at various career stages, compared with Institute of Physics and HESA benchmarks.

Table 10: Academic staff numbers by gender and year at Oxford Physics.

Category	Year	Female	Male	% female
Statutory Professor	2013	1	4	20%
	2014	1	5	17%
	2015	0	6	0%
	2016	0	6	0%
	2017	0	6	0%
Titular Professor	2013	7	43	14%
	2014	12	57	17%
	2015	12	61	16%
	2016	12	64	16%
	2017	11	69	14%
Associate Professor	2013	5	35	13%
	2014	3	28	10%
	2015	3	25	11%
	2016	3	22	12%
	2017	3	20	13%
Other (incl. departmental lecturers)	2013	3	9	25%
	2014	3	8	27%
	2015	2	8	20%
	2016	2	6	25%
	2017	2	4	33%

Post-doctoral researchers form the biggest sub-group of research staff – these are career development posts with fixed term, grant funded contracts, typically for a two or three year period. They form the most transient population group within the department, and we have put in place several measures to cater to their needs, and ensure that they are well integrated into the department culture (see sections 5.2(iii) and 5.6(iv) below). A small number of permanent research staff typically play key roles in large projects.

Since 2013, the number of female researchers has remained at 43 (with small annual fluctuations), but the number of male researchers has increased steadily. As a result, the proportion of women has fallen from 24% to 17%. This difference is largely at the junior postdoctoral level. We continually strive to make Oxford Physics a welcoming environment for women researchers from all over the world (see 5.3(iii)), and make sure our recruitment processes are unbiased and proactive in seeking women candidates (see 5.1(i)).

Table 11: Percentages of women research staff by contract type & grade for the last five years

Category	Year	Female	Male	% female
Junior (Grades 6 & 7) fixed term research staff	2013	34	91	27.2%
	2014	33	119	21.7%
	2015	41	136	23.2%
	2016	35	145	19.4%
	2017	34	151	18.4%
Senior (Grades 8+, Marie Curie) fixed term research staff	2013	4	19	17.4%
	2014	6	26	18.8%
	2015	6	28	17.6%
	2016	10	31	24.4%
	2017	6	29	17.1%
Permanent research staff (incl. Royal Society Professor, Senior Research Fellow)	2013	5	29	14.7%
	2014	3	29	9.4%
	2015	3	29	9.4%
	2016	3	31	8.8%
	2017	3	23	11.5%

(ii) Where relevant, comment on the transition of staff between technical and academic roles.

Oxford has no mechanism for staff to transition between technical and academic roles, there is no known example within the reporting period.

(iii) Academic and research staff on fixed-term, open-ended/permanent and zero-hour contracts by grade and gender

Comment on the proportions of men and women on these contracts. Comment on what is being done to ensure continuity of employment, and to address any other issues, including redeployment schemes.

Table 11 shows the fraction of research staff by contract type. Oxford Physics has no staff on zero-hour contracts.

The PMC has in place mechanisms to ensure fair treatment of post-doctoral researchers on fixed-term contracts. Under the scheme, any fixed-term contract renewal or extension requires the supervisor (jointly with the person involved) to formulate a career development plan, which lists the career aspirations of the employee, together with a list of tasks for the employee to undertake to aid their career aspirations. The plan is scrutinised, and logged for reference & review when further contract extensions are requested.

Resulting from our previous (bronze) action plan, the HR manager also maintains an up-to-date list of all staff who have been employed on fixed-term contracts for more than 5 years. The list is reviewed yearly by the PMC, and active steps taken

to ensure that staff are moved off fixed term contracts and on to open-ended / permanent ones, as quickly as possible.

(iv) Academic leavers by grade and gender and full/part-time status

Comment on the reasons academic staff leave the department, any differences by gender and the mechanisms for collecting this data.

Our retention rates for academic staff are very high (see Table 12). Only seven have left in the last four years: three retired (2M, 1F); four for career reasons (2M, 2F).

Research staff: Post-doctoral appointments are career development posts; the vast majority of our PDRAs leave when (or just before) their fixed-term contracts come to an end. Five women left for personal / family reasons over the 4 year period of Table 12, 18 men did the same. Three men retired, one left due to ill-health, one was TUPE, 1 didn't take up post, and 4 men left for other reasons. We do not currently track PDRA leaver destinations. Turnover rates are high (33%, same as divisional average), and the same for men and women (see Table 12 below).

Table 12: Academic and research staff leavers information

		2013		2014		2015		2016		% leaving (average)
		Leavers	In Post							
Academics	Female	0	16	2	19	0	17	1	17	4%
	Male	1	92	2	98	1	100	0	99	1%
Researchers	Female	17	43	8	41	13	49	22	47	33%
	Male	36	139	61	177	60	193	71	201	32%

5. SUPPORTING AND ADVANCING WOMEN'S CAREERS

Recommended word count: 7000 words (8039 words)

5.1. Key career transition points: academic staff

(i) Recruitment

Break down data by gender and grade for: applications; long- and shortlisted candidates; offer and acceptance rates. Comment on how the department's recruitment processes ensure that women (and men where there is an underrepresentation in numbers) are encouraged to apply.

Faculty recruitment: We now run a very thorough three stage faculty recruitment process: it starts with a global search (in the most recent exercise about 150 people were consulted or approached with special emphasis on women and minorities) and advertisement before shortlisting; continues with a visit of several days by each shortlisted candidate during which they give a research seminar and have the opportunity to find out all the things about working here that are not immediately obvious; the process concludes with a formal interview after which the decision is made. This process is much appreciated by the candidates and is clearly worth the hard work involved.

Appointment committees are chaired by the HoD or their deputy and usually have seven members, including at least one woman and one member from another institution; all members must have done unconscious bias training. The application process enables candidates to draw attention to issues that may have affected the quantity but not the quality of their work. If no women are shortlisted, permission

from MPLS is required to proceed (not generally given). After the interviews the committee reports to MPLS giving a detailed analysis of the candidates, gender and minority information about the field, and rank ordering. The final decision to appoint is then taken by the division.

We have had very few faculty recruitments over the last few years (a hiatus following a spate of recruitments leading up to REF2014). Since our last submission, only three new faculty have started. Although all three appointees were male, conscious and concerted efforts as described above were made to try and address the gender imbalance in the department.

Research staff recruitment follows the process set up by University HR. Table 13 shows that the fraction of applications from women is commensurate with sector benchmarks; this is maintained through the shortlisting process. It is disappointing that we are appointing fewer women (overall numbers hide substantial sub-departmental variations), although the gender balance of recruitment panels has markedly improved in recent years (see Table 14), a consequence of a conscious effort. We have also made unconscious bias training compulsory for all recruitment panel members.

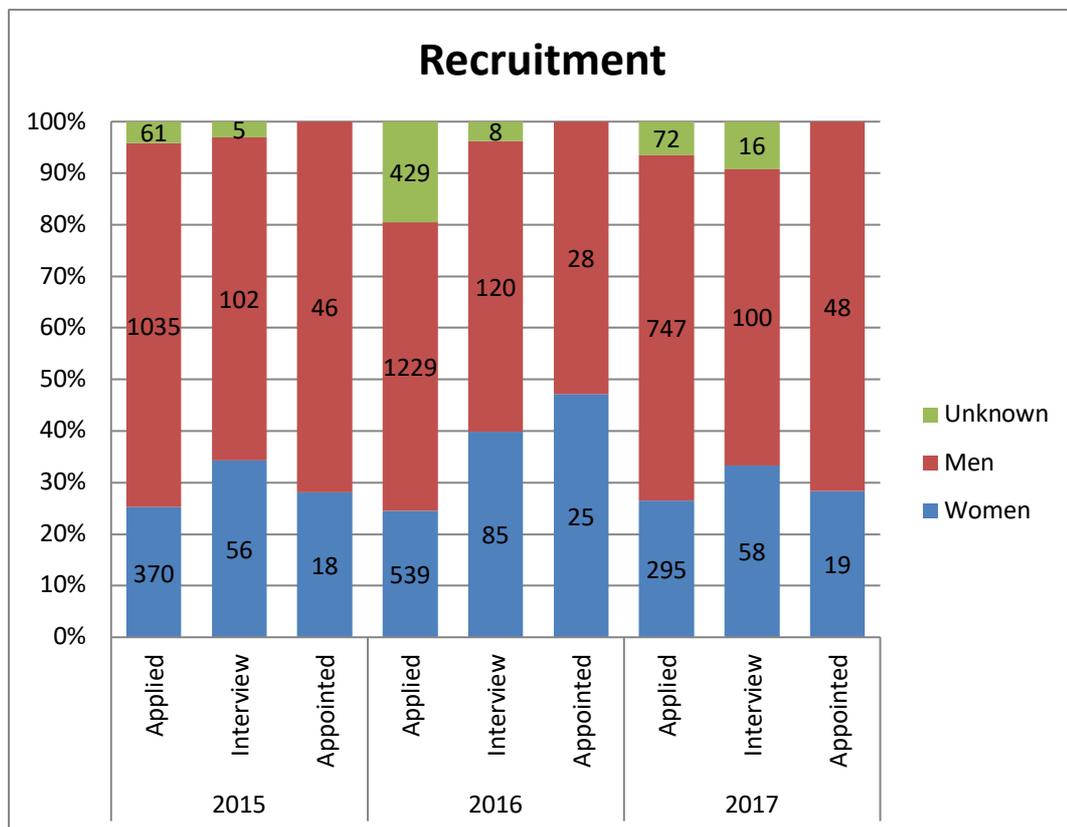


Figure 10: Recruitment statistics by gender for all staff types over the last three years. Several applicants do not wish to disclose gender at early stages of the recruitment process.

Table 13: Gender balance throughout the PDRA recruitment process.

Grade	Status	Female	Male	Unknown	% female
Grade 7	Applied	174	588	37	22%
	Shortlisted	24	80	4	22%
	Offer	8	43	0	16%
	Accepted	8	42	0	16%
Grade 8	Applied	3	12		20%
	Shortlisted	0	1		0%
	Offer	0	1		0%
	Accepted	0	1		0%
Academic post	Applied	5	52	4	8%
	Shortlisted	0	6	1	0%
	Offer	0	1	0	0%
	Accepted	0	1	0	0%

Table 14: Gender balance of recruitment panels within Oxford Physics.

	2015	2016	2017
Panels with <= 25% women	37	24	18
Panels with >= 25% women	26	52	33
Percentage with >25% women	41%	68%	65%

(ii) Induction

Describe the induction and support provided to all new academic staff, at all levels. Comment on the uptake of this and how its effectiveness is reviewed.

Faculty induction: New faculty attend the general staff induction session (see 5.2(i) below). They also have a meeting with the HoD which covers any start-up issues that need resolving, reviews the contractual five-year probationary arrangement, and discusses their immediate training needs. New faculty are required to attend courses on teaching and on the supervision of graduate students, and have a session with the head of our grants team to familiarise them with local processes. Those on their first faculty appointment also attend courses on managing post-doctoral staff and grant proposal writing.

Numbers are too small for a sensible uptake and effectiveness analysis.

Research staff: There is a unified induction for all staff, described in 5.2(i).

(iii) Promotion

Provide data on staff applying for promotion and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

There is no formal promotions process at Oxford: the main route to progression is through applying for a higher grade post in open competition. However, staff achievements can be recognised in the following ways:

The annual Recognition of Distinction (RoD) exercise invites Associate Professors and senior researchers to apply for the title of Professor. The award of title does not change their work duties but does recognise a substantial contribution to research, teaching and good citizenship, on a par to that expected of full professors elsewhere. The RoD applications are considered by a University panel to ensure equality. Successful candidates receive a modest salary increase and are eligible to apply for professorial merit pay awards.

Information about the application process is circulated to all faculty and the HoD arranges to meet with eligible faculty members to support their application. Figure 11 and Table 15 show the RoD statistics for the past few years. Success rates for men and women are comparable.

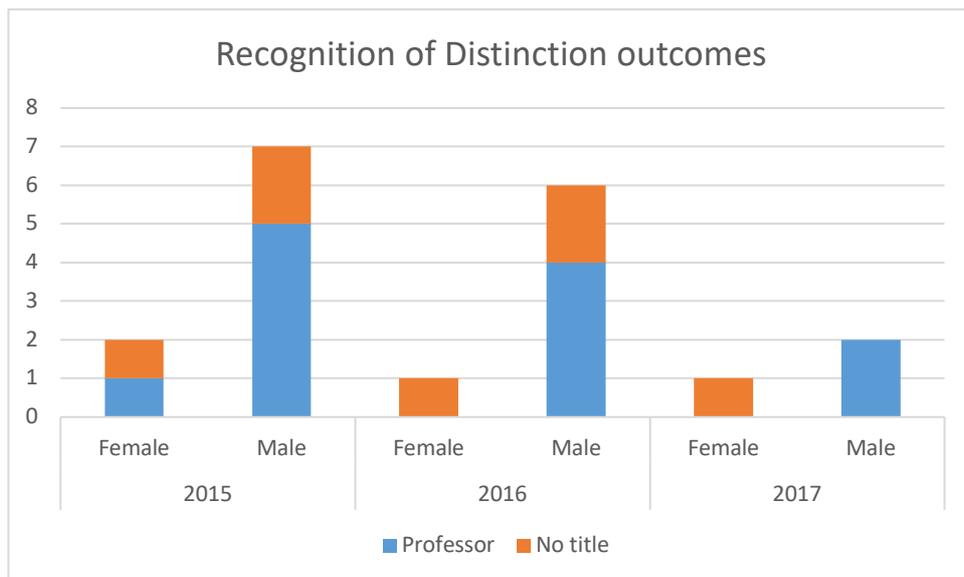


Figure 11: Outcomes of Physics submissions (successful in blue) to the RoD exercise by gender and year

The scheme was suspended in the years preceding 2014. Revised guidance to HoDs introduced in 2014 encouraged them to identify and mentor eligible staff; this guidance was welcomed by the HoD who views mentoring (at all levels) as a valuable tool to encourage women to put themselves forward for awards and recognition of distinction. In the last two years, female numbers are low, as there have been few eligible female academics.

The annual Reward and Recognition Scheme for researchers and support staff rewards exceptional performance, significantly above that which might reasonably have been expected for an individual's grade. It awards either advancement to the next point on the pay scale or payment of a lump sum to the value of one increment. All nominations of women for pay awards in the last 3 years have been successful, as against 66% of men.

Table 15: RoD statistics for Oxford Physics.

Year	Gender	Successful	Unsuccessful	Total
2014	Female	4		4
	Male	11	4	15
2015	Female	1	1	2
	Male	5	2	7
2016	Female		1	1
	Male	4	2	6
2017	Female		1	1
	Male	2		2
Total Female applicants		5	3	8
Total Male applicants		22	8	30
% Female applicants		19%	27%	
% Male Applicants		81%	73%	
% Female outcome		63%	38%	
% Male outcome		73%	27%	

Action(G3.4): Publicise to all PIs and Line Managers that the department / University will underwrite extra costs incurred from excellence awards that cannot be charged to grants, ensuring there is no bias against nominating staff.

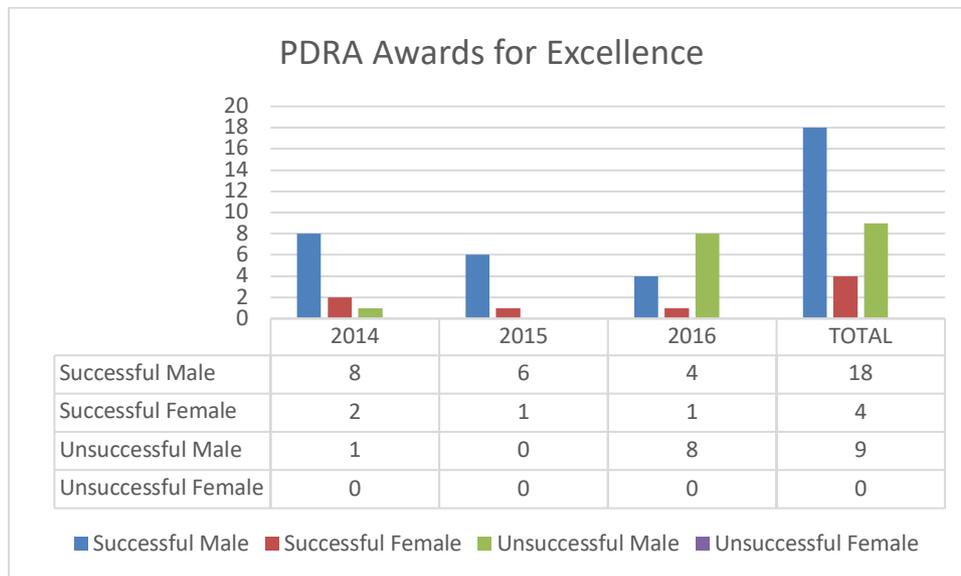


Figure 12: Statistics for Post-doctoral researchers submitted to the "Reward and recognition scheme" by gender and year.

Staff whose role has grown such that they are required to work 'above' their grade can apply for their post to be regraded. The Department has a Grading Committee which considers re-grading applications before they are submitted to the University, to offer the applicants support in making their case and ensure that there is equity in applications. All academic and research regrading applications were successful. Figure 13 shows the statistics for re-grading requests. 5 out of 21

requests were from women (24%), better than the percentage of women academics and researchers.

Action(G3.4): Inform all staff (in particular PIs) that any additional costs stemming from successful re-grading that cannot be charged to grants will be under-written by the department, thus eliminating bias in applications for re-grading.

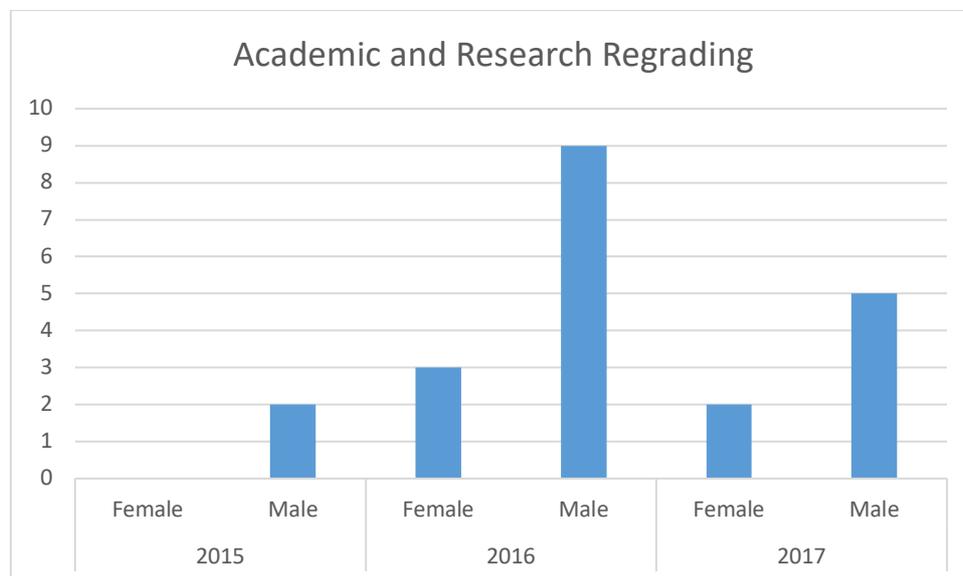


Figure 13: Number of re-grading requests by men and women within Oxford Physics by year.

(iv) Department submissions to the Research Excellence Framework (REF)

Provide data, by gender, on the staff submitted to REF versus those that were eligible. Compare this to the data for the Research Assessment Exercise 2008. Comment on any gender imbalances identified.

We submitted 124.7 FTE in REF2014, corresponding to a head count of 130 to the Physics panel, of which 106 were men, and 24 were women (18.5%). Another 17 staff were eligible, but not submitted, of these 15 were men, and 2 were women (11.8%). Thus, there is no gender bias in the number that were withheld. Indeed, very careful scrutiny was carried out by the internal (gender balanced) REF panel for each excluded academic, including multiple independent reviews of submissible output. The HoD met in person with each academic who was not to be submitted, and they received formal letters from the Pro-VC Research.

For REF2008, all eligible staff were submitted. Of a total of 150, 133 were men and 17 women (11.3%). The total number count of REF eligible academics shows a healthy improvement for REF2014 in the number of women (17.7%, up from 11.3%)

5.2. Key career transition points: professional and support staff

(i) Induction

Describe the induction and support provided to all new professional and support staff, at all levels. Comment on the uptake of this and how its effectiveness is reviewed.

In 2015, PMC considered the feedback received on the previous induction, which pointed out that “it was too HR heavy”, and that it skipped the positive aspects of

what being a member of the department entailed, instead being more about what newcomers were required to do. PMC decided to re-vamp the induction, making it a joint presentation by a senior academic (member of PMC) and the HR manager. Since 2016, induction is offered to all staff four times a year, on a fixed date each term, plus one in summer. In 2016/17, four sessions were run by the Chair of E&D committee, and the HR manager. Besides providing some background and a taste for the variety of research being done in Oxford Physics, the induction provides details of the department organisation and governance, highlights where to find relevant information, and opportunities available to staff. Our engagement with Athena SWAN, IoP Juno, and other E&D initiatives is emphasized. The HR part includes an overview of maternity and parental leave provisions, training (incl. unconscious bias), career development, SDD, ADD, “awards for excellence”, scheme, and the “Women in Physics” society.

Uptake and satisfaction is high (see Figure 14 below for all staff groups combined). Responses to the 2014 survey indicated only 44% of staff had an induction, rising to 55% in 2016. The latest 2018 survey has 59/80 reporting having an induction (74%) and 42/80 (53%) found it very useful or quite useful. Only 10 said they were not offered an induction (13%). There are no meaningful gender differences.

Action(G6.2): Ensure that flexible working practices (and other policies and procedures) are adequately communicated to staff, both at induction and on a regular basis (e.g. through the HR newsletter).

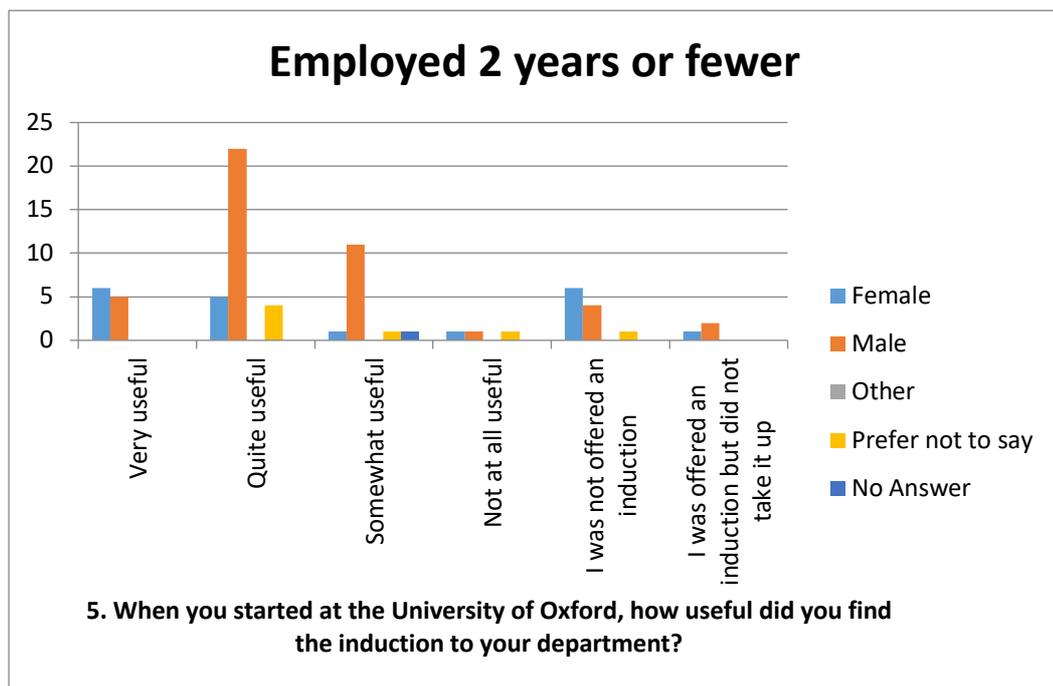


Figure 14: Induction for newcomers - uptake and satisfaction rates (Staff survey 2018 for all staff groups treated together)

(ii) Promotion

Provide data on staff applying for promotion, and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

Like Academic and Research staff, there is no formal process for promotion, promotion can usually only be achieved by applying for a higher graded post. There

are some opportunities for this within the department, but greater scope through application to a wide range of posts throughout the University. The department Grading Committee reviews applications from professional and support staff before they are submitted formally, and provides advice on improving them. Over the last 3 years, 12 of 25 regrading applications were from women, well exceeding the proportion of women staff in these roles.

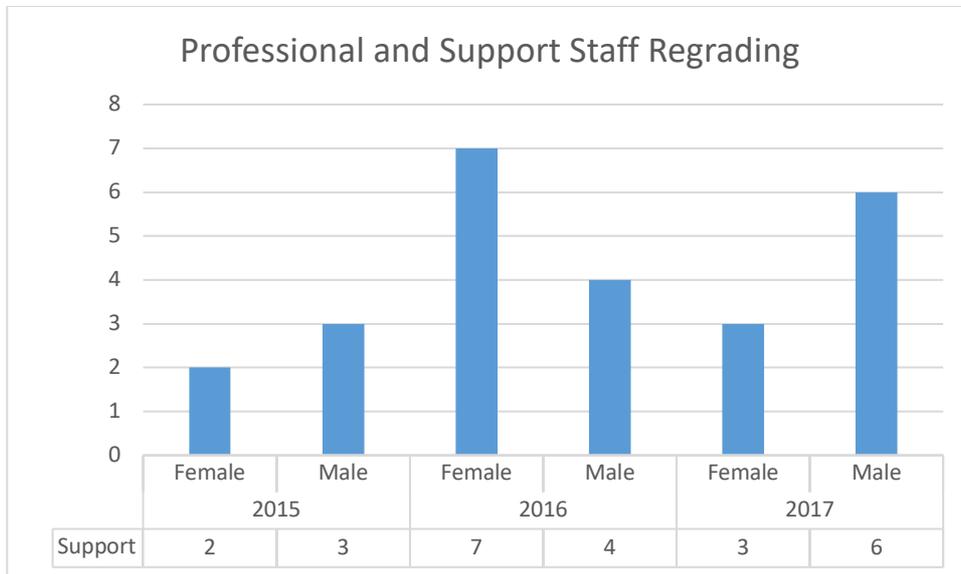


Figure 15: Regrading statistics for professional and support staff by gender and year.

The University Reward and Recognition scheme is particularly powerful for rewarding professional and support staff for exceptional performance. Success rates for women have improved in recent years, but it is still the case that men are disproportionately entered for these awards (49% of male professional & support staff, 39% of female staff nominated over 3 year period).

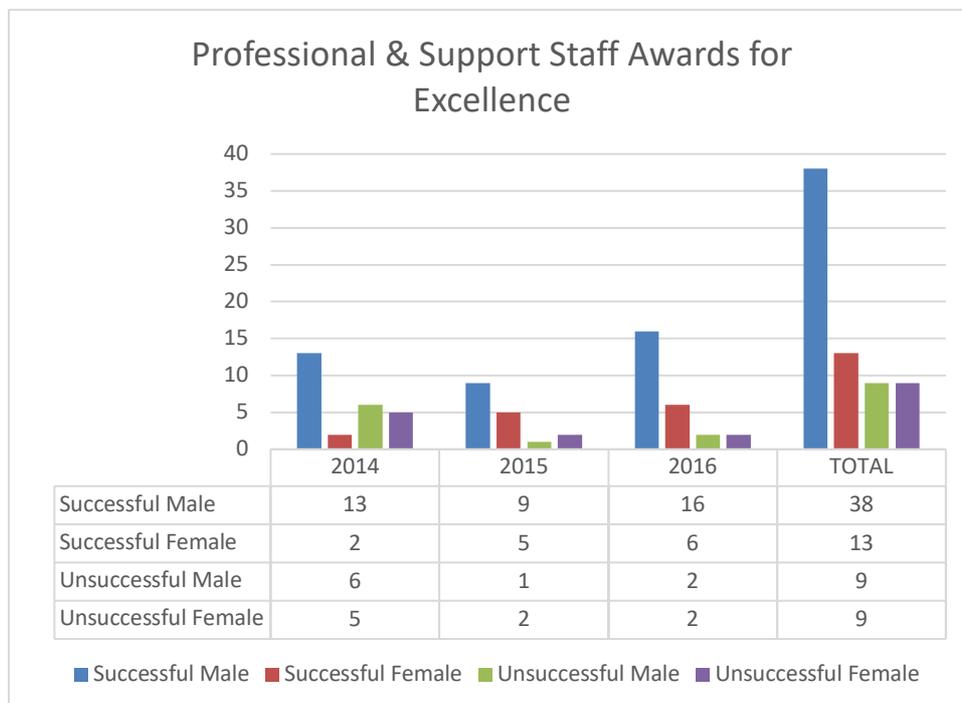


Figure 16: Statistics for submissions from professional and support staff to the reward and recognition scheme.

5.3. Career development: academic staff

(i) Training

Describe the training available to staff at all levels in the department. Provide details of uptake by gender, and how existing staff are kept up to date with training. How is its effectiveness monitored and developed in response to levels of uptake and evaluation?

We have supported a divisional initiative to provide all PDRAs with an entitlement of up to 10 training days per year.

Action(G3.3): Add the training entitlement to job descriptions to improve the attractiveness of Oxford posts. Engage with PIs to encourage their PDRAs to avail of training, particularly in transferable skills.

The annual Staff Development Discussion (SDD) for researchers specifically prompts researchers to consider what skills have been acquired in the course of the year and what skills or training is required for their ongoing development. Many of these can be satisfied through the University's wide array of training, development and mentoring schemes.

The University offers many free courses to all staff through the Oxford Learning Institute (OLI), including teaching and learning, management and leadership, and core transferable skills. OLI courses are available online or face-to-face. Oxford University Computing Services offer many computing and software courses.

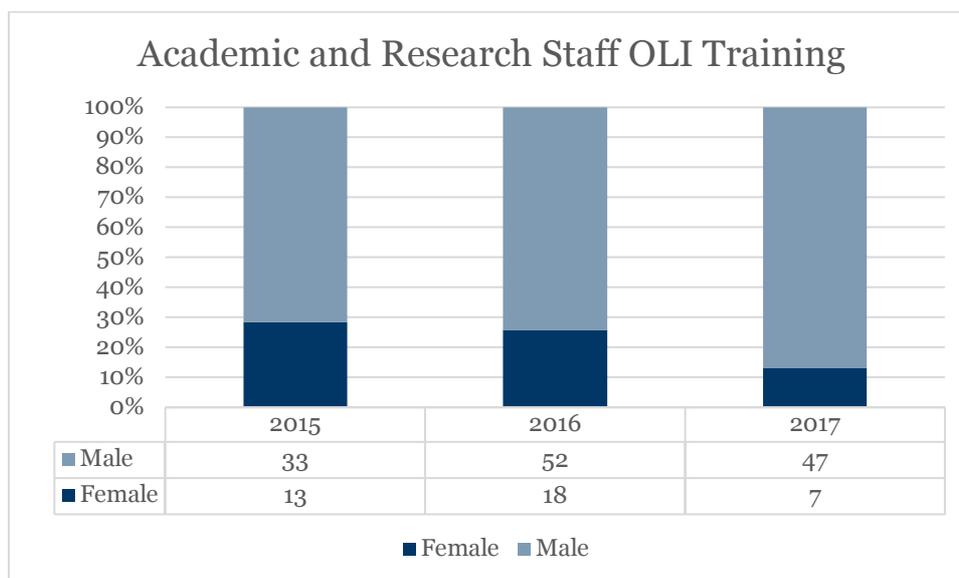


Figure 17: OLI training undertaken by academic and research staff by gender

The OLI track all training performed, including unconscious bias training (the department is provided termly updates). They use an online survey for all course attendees. They adapt and change course structure and content using these evaluations.

Figure 17 shows that in 2017 the proportion of courses undertaken by women academics and researchers drops from 28% and 26% respectively for the previous years to 13%. This is simply because unconscious bias training forms a large fraction of OLI training, female academic and research staff were quicker to take up unconscious bias training when a revamped course was first offered in 2015.

(ii) **Appraisal/development review**

Describe current appraisal/development review schemes for staff at all levels, including postdoctoral researchers and provide data on uptake by gender.

Provide details of any appraisal/development review training offered, and the uptake of this, as well as staff feedback about the appraisal/development review process.

Academic staff: There are differing rules in place depending on the exact nature of the contractual appointment. For academic staff holding joint appointments with a college (majority of academics) and for statutory professors

- A formal discussion must take place every five years, and can be requested at any point annually by the appraisee or the appraiser.
- Discussions are held with the line manager (HoD or Head of Division depending on the individual), and include:
 - Reflections on work objectives, successes and difficulties since the last discussion
 - Objectives for the coming year(s)
 - Support, career development and training needs
 - Comments on what the employer could realistically do to improve working life

For newly appointed academics, a formal five year probation period exists before re-appointment to retirement age (tenure). A formal “initial period review” is required by the division five years after appointment, including letters from three external eminent scientists, plus reports on teaching (dept and college), grants, publications, committee participation, good citizenship. An interim review is held at 2.5 years, to provide feedback to new academics and help them on their career path. A mentor (senior academic) is also allocated to each new appointee, and holds yearly discussions to assist with the tenure process. Every year they have a formal meeting with their HoSD to review progress and address any problems.

Table 16: Uptake and usefulness of staff development discussion (SDD) by staff group (Researchers, Academics, and Professional & Support Staff) from 2018 staff survey. People who replied “don’t know” to their job role have been excluded. The number who found the SDD useful is the sum of responses “somewhat useful”, “quite useful” and “very useful”.

	Female	Male	Prefer not to say	Female	Male	Prefer not to say	Female	Male	Prefer not to say
	Fixed term (PDRAs)			Academics			Professional / Support staff		
Had SDD	14	44	5	4	19	1	26	33	7
of which found useful	13	37	5	3	18	0	22	24	5
Didn't have SDD	7	27	2	3	18	3	14	5	1
of which recently appointed	5	11	1	0	1	0	10	5	0
of which not invited	1	6	0	2	7	1	3	2	1
of which didn't arrange	0	5	0	0	4	1	0	0	0

Research staff: For research staff (including department only appointments and RS IV professors), there are no formal institutional arrangements for appraisal and development review. Within Oxford Physics, staff are invited every year to a (mandatory) “Staff Development Discussion (SDD), with a focus on career development rather than performance review. They have broadly the same content

as the discussions for academics and for members of support staff (see section 5.4(ii), below). SDD forms are archived in personnel files.

When development reviews were first introduced several years ago, staff did not see it as a valuable use of their time. However, over time, the SDD has become ingrained within department culture, and self-reported uptake (through the staff survey, Table 16) is constant at 65-70% over the 2014-2018 period, with <10% reporting not being invited to one (the rest are largely recent appointees). The department has actively provided feedback to the central University, so that SDD forms are now fit-for-purpose (different for research and support staff). Satisfaction is high (87% for academic and research staff).

(iii) **Support given to academic staff for career progression**

Comment and reflect on support given to academic staff, especially postdoctoral researchers, to assist in their career progression.

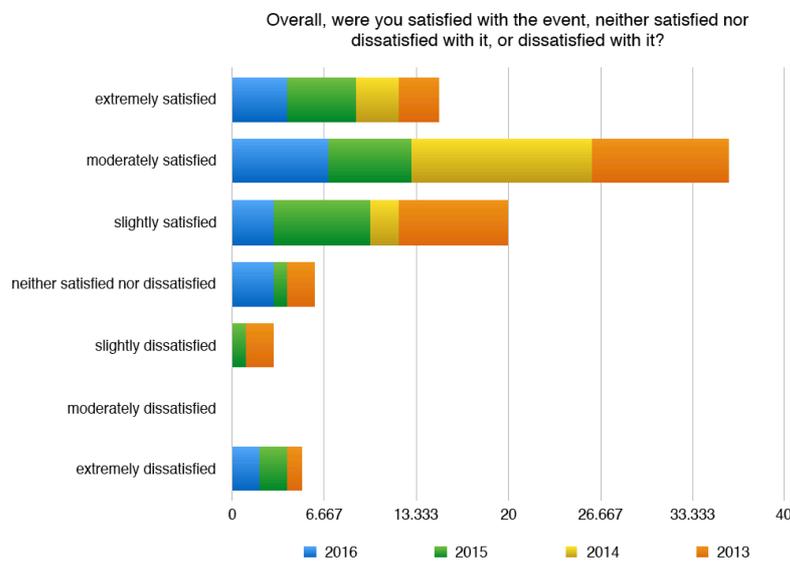


Figure 18: Responses from a post-event survey for the PDRA careers event.

The EDC Chair also heads the Postdoc Liaison Committee (PDLC), ensuring that PDRA related issues are prioritised in the E&D agenda. Since 2013, the PDLC coordinates a yearly PDRA careers event, which has been hugely successful with over 100 attendees (senior D.Phil students are also invited). The event consists of short talks by the Head of the Careers Service, the Head of Research Grants and the Industrial Knowledge Exchange Facilitator, followed by a panel discussion chaired by the HoD, and a networking lunch. The panellists are external invitees who have a physics background, and represent different career paths including academia, industry, finance, national laboratories, teaching, recruitment agents, etc. The audience submits questions beforehand for discussion. Some events have also featured booths from the University’s careers service (see 5.3(iv) below). Impact is shown in Figure 18 and Figure 20.



Figure 19: Panelists (left) and audience (right) for the Postdoc Careers Event 2018

Have you used the resources offered by the Oxford Learning Institute, the Careers Service, and/or the Mathematical, Physical, and Life Science Division, in the past 12 months?



After participating in the 2015 careers event, how likely are you to use the resources offered by the Oxford Learning Institute, the Careers Service, and/or the Mathematical, Physical, and Life Science Division?

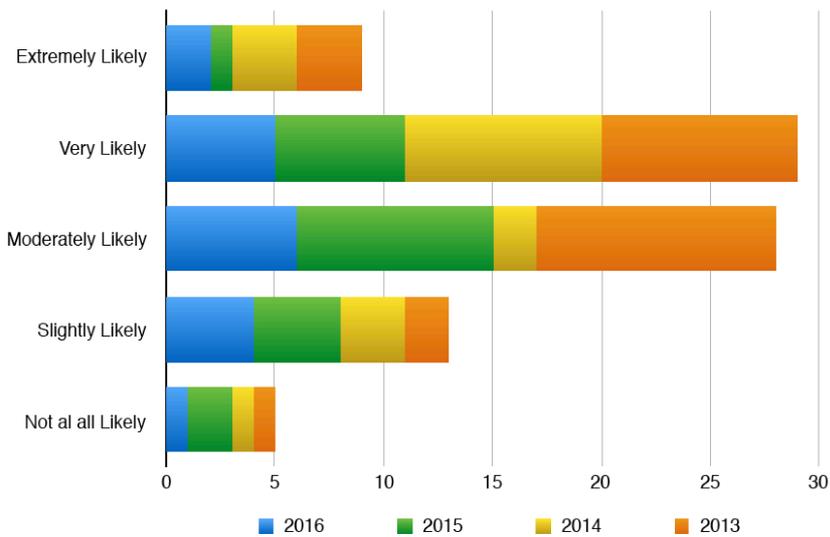


Figure 20: Post event survey feedback (from four consecutive years) showing the impact of the Careers event in encouraging PDRAs to take up training. Horizontal axis shows number of respondents.

Training, particularly in transferable skills, is a topic at the annual SDD, as is attending conferences, and a 5 year career plan. All academic staff can avail of mentoring schemes. In response to PDLC requests, the postdocs have their own wiki where information on teaching opportunities at colleges, fellowship opportunities & jobs is posted. They also have their own section of the departmental website. They hold social and networking events that are subsidized by the department.



Oxford Physics has a vibrant “Women in Physics” society, which is managed and run by post-doctoral researchers with subsidy from the department. Its goal is to promote career development of women in physics while providing a welcoming support network. They aim to enhance the experience of women working in the department through increased interaction with peers, mentors, and role models, including through “tea sessions” with a senior physicist. The society also holds an annual banquet, a welcome event for newcomers, a Christmas lunch and a summer picnic. There are International Women’s Day events, outreach sessions that target girls in high school, and opportunities to engage with eminent scientists who come to give public lectures. “Snack and solve” is a new initiative offering physics problem solving sessions for female undergraduates. Planning is underway to track attendance numbers and maintain statistics of events held and their popularity, so as to inform future plans.

Women in Physics also runs a mentoring scheme that pairs every junior female academic / student with a mentor. The scheme has received wide support, and is well-structured and well organised right from undergraduates through to staff. Mentoring can cover any topic, including careers, prospects, promotion. The scheme is now expanded to “Mentoring for everyone”.

(iv) Support given to students (at any level) for academic career progression

Comment and reflect on support given to students (at any level) to enable them to make informed decisions about their career (including the transition to a sustainable academic career).

Both undergraduate and postgraduate students get lifelong careers support through an excellent careers service organised by the University. They are a one-stop-shop for CVs, cover letters, career fairs, internships and micro-internships, student consultancies, advisors, and details of career prospects and paths in different sectors and occupations. They run a “springboard for women” scheme particularly for female students. College tutors also provide pastoral care for students in their respective colleges, including mentoring.

In the department, female postgraduate students are mentored through the Women in Physics initiative. We provide summer internships (undergraduates) and work experience placements (A level students) to give students a taste of research and academic life.

(v) Support offered to those applying for research grant applications

Comment and reflect on support given to staff who apply for funding, and what support is offered to those who are unsuccessful.

A team of four supports research grant applications: 2 senior research facilitators, 1 research facilitator and the Head of Grants Administration. Each facilitator has a specific area of expertise (e.g. UKRI). Between them, they read all draft applications and provide feedback. Researchers that are new to the grants process are assigned a mentor, and all European Research Council (ERC) grant applicants are required to identify a “critical friend” – in both cases these are senior academics who can provide support and feedback.

Opportunities are advertised to all academic staff. The facilitators provide a structured timetable for getting the various parts of the grant application ready on time. They help with all financial aspects of grant preparation, do all the costings, and provide guidance on what costs are eligible. They also advise on eligibility criteria, especially about factoring in career breaks.

Table 17: Statistics for research grant funding applications 2014 - 2017

Research Grant Support		
Period Aug 2014 - July 2017		
	Female	Male
Eligible staff	20 (14%)	126 (86%)
Applications for research funding	144 (16%)	738 (84%)
Of which successful	48 (33%)	230 (31%)

For all applicants, particularly early career researchers, research facilitators arrange mock interviews where appropriate to all applicants who intend to hold their fellowships at Oxford, even if they are not currently employed by the department.

Table 17 shows statistics on the number of grant application by men and women researchers, showing that the fraction of applications from women perfectly reflects the fraction of women academics. It also shows women are slightly more successful than men at attracting grant funding (see Case Study 2). The department does not de-brief unsuccessful candidates in detail, but the facilitators do request any written feedback the applicants have received, both to help with incorporating it for repeat applications, and to provide guidance for future ones. They also provide template successful past proposals (sensitive information redacted) on request.

5.4. Career development: professional and support staff

(i) Training

Describe the training available to all professional and support staff, at all levels, in the department. Provide details of uptake by gender, and how existing staff are kept up to date with training. How is its effectiveness monitored and developed in response to levels of uptake and evaluation?

Professional and support staff have access to department and University-provided training, including line management training. Administrative staff also attend systems training appropriate to their role (e.g. Oracle financials, CORE HR). We have supported professional and support staff to gain professional or other qualifications (e.g. a member of the finance team is doing her ACCA). HR and finance teams attend regular briefings run by the central university and networking sessions run by MPLS.

Training and development needs and achievements are reviewed at least annually during the SDD (see below) between individual and line manager. Figure 21 below shows a marked difference between training uptake by men and women. This is because many of the male members of professional and support staff are engineers, mechanics or technicians, and OLI training is geared towards IT and finance.

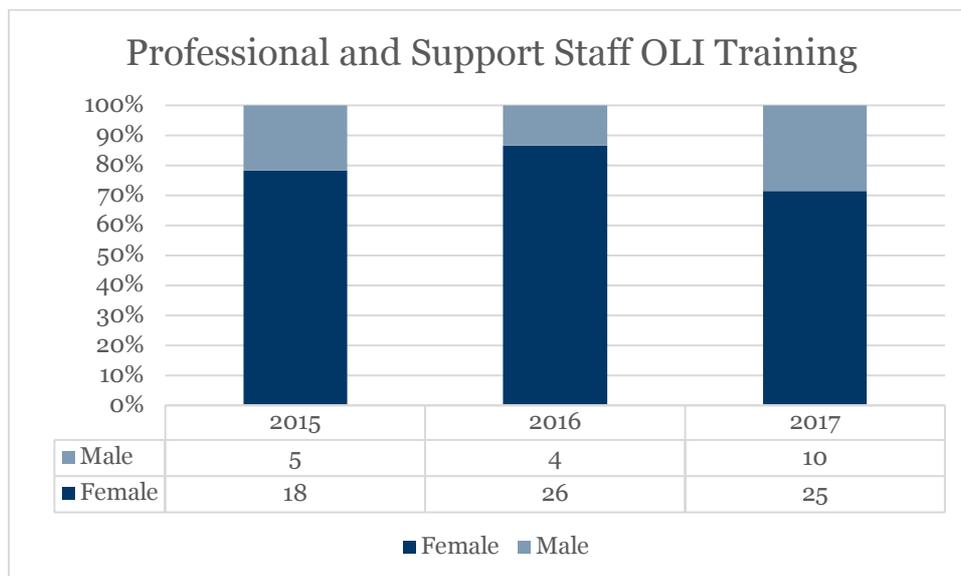


Figure 21: Training courses at the Oxford Learning Institute (OLI) attended by members of professional and support staff.

Separately, the University launched a “Technician Commitment” on 16th April 2018 at an event held in the Department of Physics to support skills development for technicians. The commitment, a Research Council initiative, aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research. The Department strongly supports this initiative, though it is too soon to evaluate its impact.

(ii) Appraisal/development review

Describe current appraisal/development review schemes for professional and support staff, at all levels, and provide data on uptake by gender. Provide details of any appraisal/development review training offered, and the uptake of this, as well as staff feedback about the appraisal/development review process.

The department runs an annual process of SDDs for all professional and support staff. These consist of a discussion meeting with their line manager and cover a wide range of areas, including:

- A review of key activities in the previous year, and which areas have gone well or could be improved.

- Discussion around clarity of roles and responsibilities.
- A key question around “The senior management of the department want every member of staff to be supported and fulfilled. What changes might reinforce those feelings for you and your colleagues?”
- Training and development needs and aspirations.
- Review of previous, and agreement of ongoing, SMART objectives
- Discussions around the levels of work-related stress (if any), and confirmation of resolution channels if there are stress concerns.

SDDs are mandatory for all professional and support staff. Anonymised feedback of common themes or areas of concern are escalated through to senior management, and are reviewed and discussed at senior management committees (e.g. in 2017, feedback was on communications within the department, SDD process, induction process – processes were tweaked in response)

Staff feedback on a wide range of areas, including on personal development, is collected annually through the staff survey (see Table 16). Uptake amongst professional and support staff is good (only 7% report not being invited to SDD), and satisfaction rates are high (77%), though not as good as research staff. The HR manager provides training to line managers and academics prior to the start of each round of SDD.

Action(G5.3): Rejuvenate training for holding SDDs, targeting line managers and academics with line management responsibilities. Ensure they are aware of training initiatives and opportunities, secondment, and mentoring opportunities available to their staff, through a dedicated leaflet.

(iii) Support given to professional and support staff for career progression

Comment and reflect on support given to professional and support staff to assist in their career progression.

We offer support staff the opportunity to be seconded to a different department or division to meet temporary staffing needs elsewhere. Usually, the secondment is to a more senior role, and results in a better offer at a higher grade in subsequent years. The recent review of engineers and technicians highlighted the need to ensure that staff dedicated to specific multi-year projects have sufficient access to training, and to maintain a diverse portfolio.

There is a University wide mentoring scheme for support staff, but few support staff are aware of it, and take up is low.

5.5. Flexible working and managing career breaks

Note: Present professional and support staff and academic staff data separately

(i) Cover and support for maternity and adoption leave: before leave

Explain what support the department offers to staff before they go on maternity and adoption leave.

The University provides generous parental leave. The University’s contractual maternity pay scheme is very generous, and provides enhanced maternity pay (full pay) for 26 weeks. For the remaining period staff receive statutory maternity pay for 13 weeks, and can take a further 13 weeks of unpaid leave.

Currently, all staff are offered personalised support via a meeting with the Head of HR when they know they are about to be new parents. During this meeting, the HR manager informs the staff member of all the policies (both University and departmental), as well as all the benefits they can avail of. Shared parental leave and paternity leave is part of this discussion. Parental leave allowances and benefits are also outlined at induction; newcomers are also provided a “Guide for parents” leaflet. The meeting also helps the department plan for suitable parental /maternity leave cover. Section 5.6 (iii) describes our beacon activity to pay maternity stipend for all student parents for 6 months, putting them on par with staff entitlement.

(ii) Cover and support for maternity and adoption leave: during leave

Explain what support the department offers to staff during maternity and adoption leave.

The department seeks to hire a replacement for support staff taking leave, including a hand-over period. Academic staff are provided with cover for their teaching duties, and are supported by arranging a team member to provide research coordination during their absence. In addition, the department offers up to 10 KIT days (Keep-In-Touch days) for all staff, as required by law.

For researchers, provision for replacement funding (either to fund a replacement person, or to extend the research grant for a commensurate period) is determined by the funder’s rules. Some funders, notably the Wellcome Trust and UK Research Councils reimburse the non-statutory costs of maternity leave for researchers employed 100% on the grant, and allow grant funds to be used to recruit a maternity cover post or to extend the grant by a period equivalent to the amount of leave taken. Most other funders, however, do not provide any additional funding for replacements.

The Physics department has led efforts (coordinated by the E&D Unit across the University) to reduce the impact on research and the wider research team, as fears about the impact on research are a bigger driver of behaviour. To ensure that no bias is introduced in recruitment, the MPLS Division has agreed to establish a Divisional fund to support departments in meeting the costs of maternity cover and contract extensions.

(iii) Cover and support for maternity and adoption leave: returning to work

Explain what support the department offers to staff on return from maternity or adoption leave. Comment on any funding provided to support returning staff.

The Personnel team is knowledgeable and supports people returning to work; this is augmented by informal support from colleagues and local management. Line managers hold returning to work meetings (before and after the conclusion of the career break) and are empowered to agree local arrangements to suit, often in conjunction with flexible working requests.

A few years ago, the department participated in a scheme to ‘sponsor’ nursery places at the University nurseries. Childcare provision is heavily over-subscribed in Oxfordshire, and obtaining a place at one of the University nurseries provides a substantial added benefit to parents with young children, as it provides a potential cost subsidy (through a salary sacrifice scheme) and provides nursery places within easy commuting distance. Parents who are ‘sponsored’ have significantly shorter waiting times for nursery places. Six places were purchased by the department. In

2015 and 2017, new calls were announced, and although the department bid to renew all six places, only four were allocated in 2015, and five in 2017, due to increased demand from other University departments.

The University's Returning Carers Fund is a small-grants scheme to support academics and researchers (both women and men) who have taken a break of at least six months for caring responsibilities to re-establish their research careers. The grants will pay for a range of activities, such as short-term administrative or research assistance, teaching buy-outs, conference attendance, visits of research collaborators and training. Funding calls are widely publicised, Physics has six successful recipients of the Fund in the 2014-2017 period.

On return to work, the department makes provisions for new parents to help their transition to work. A baby-care room is provided within the department, equipped with appropriate amenities (an easy chair, bottle warmer, fridge), where parents are afforded privacy and can feed the infant or express milk. The department is child-friendly, and staff can bring their children into the department, provided they are supervised at all times.

We advertise holiday play schemes for half term school breaks and holidays. The University also subscribes to the childcare voucher scheme.

Childcare responsibilities are one of the priority categories the department considers when allocating its extremely limited number of parking permits, to facilitate the school run and ease family emergency needs.

(iv) Maternity return rate

Provide data and comment on the maternity return rate in the department.

Data of staff whose contracts are not renewed while on maternity leave should be included in the section along with commentary.

Provide data and comment on the proportion of staff remaining in post six, 12 and 18 months after return from maternity leave.

Maternity return rates are high; one academic staff leaver in 2013 reached the end of an extended fixed term contract, one professional staff leaver left at the end of a fixed term contact (2013) and another support staff leaver (2016) left because a part-time role could not be accommodated within the circumstances of that specific case, but this individual remains in touch with the Department.

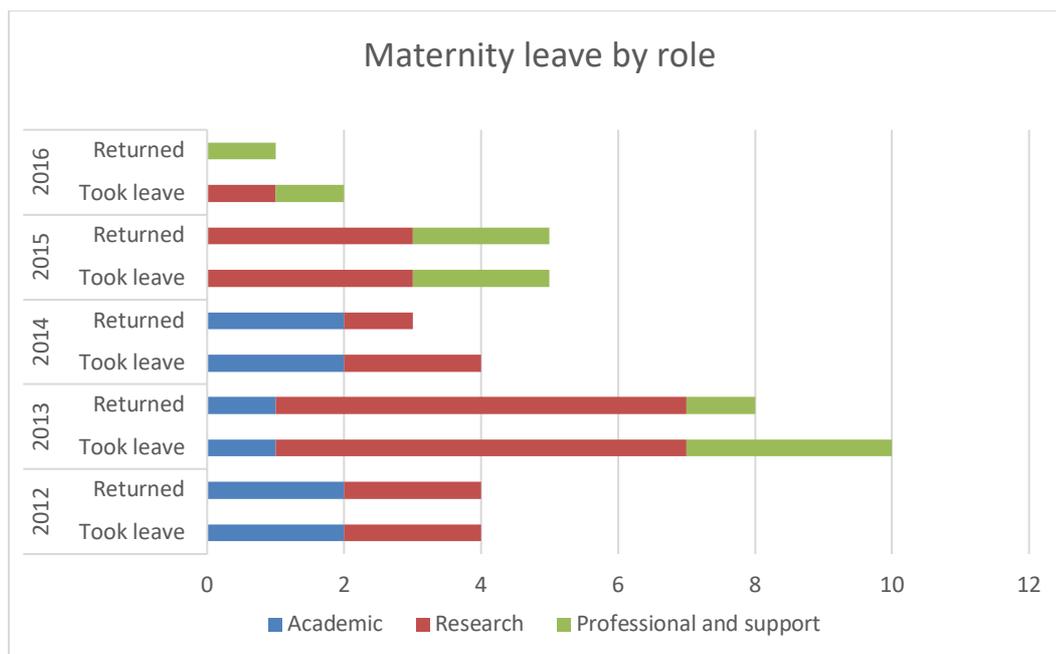


Figure 22: Return rate for maternity leave takers by year and staff type

Of those returning after maternity leave, the vast majority are still in post 18 months after returning to work.

Table 18: Data on fraction of maternity leave returners in post 6, 12 and 18 months after returning.

Maternity return data		Returned staff still in post at:				
	Left	Returned	< 6 months	6 + months	12 + months	18 + months
2012	0	4	100%	100%	75%	75%
2013	2	8	100%	100%	88%	88%
2014	0	4	100%	100%	100%	100%
2015	0	5	100%	80%	80%	60%
2016	1	1	100%	0%	0%	0%

(v) **Paternity, shared parental, adoption, and parental leave uptake**

Provide data and comment on the uptake of these types of leave by gender and grade. Comment on what the department does to promote and encourage take-up of paternity leave and shared parental leave.

In the last 3 years, 24 staff have taken paternity leave (3 academics, 17 researchers, 4 professional / support staff). Since its introduction, two men have taken Shared Parental Leave. All men are strongly encouraged to take paternity leave. Shared parental leave options are discussed as part of the personalised support provided by the HR manager.

Table 19: Paternity and parental leave uptake for last 3 years

	Paternity (2 weeks)			Shared Parental (male)
	2015	2016	2017	2017

Professional & support staff	1	2	1	
Research staff		6	11	2
Academic staff		1	2	
Total	1	9	14	2

(vi) Flexible working

Provide information on the flexible working arrangements available.

The department has an ingrained culture of flexible working, and this is wholeheartedly embraced across the department (including being prominently stated on staff web pages). Employment contracts for academic staff and academic-related support staff make no reference to work hours, or to a mandatory place of work, typically stating simply “hours of work are such as are reasonably required to carry out your duties to the satisfaction of the HoD”.

Table 20: Formal and informal flexible working arrangements in Oxford Physics [2018 survey]

All Categories	Female	Male	Other	Prefer not to say	No Answer	Total
67. What is your sex?						
Yes - I have a formal arrangement	11	6	1	5	0	23
Yes - I do so informally	34	106	0	20	0	160
No - I have no need to do so	15	30	0	4	0	49
No - it's not possible in my role	3	9	0	1	0	13
No - I haven't asked / am not aware of these	5	9	0	4	0	18
No Answer	0	0	0	0	0	0
Total	68	160	1	34	0	263

Team members are therefore largely completely free (other than for structured contact time, such as lectures and tutorials) to organise their day and working arrangements as they see fit, and regularly make use of this to work from home, or to telecommute from other institutions (the use of Skype and video conferencing is widely used). Table 20 above shows that only a tiny fraction of staff believe they cannot or are not aware of flexible working (5% and 7% respectively), while 160 have informal and 23 have formal flexible working arrangements!

For support staff (those in grades 1-5), there is a more structured scheme to arrange flexible working. This can be condensed hours (working a full week in a shorter period), different term-time / vacation time work patterns, remote working, flexing FTE arrangements or other ways of facilitating flexible working. All of these have been requested and deployed across the Physics team.

(vii) Transition from part-time back to full-time work after career breaks

Outline what policy and practice exists to support and enable staff who work part-time after a career break to transition back to full-time roles.

The department has no formal policy in this area. However, staff of all categories returning from maternity leave often return to reduced hours or reduced days at work (e.g. see case study), both of these are encouraged and supported, and several individuals have availed of the flexibility in recent years.

5.6. Organisation and culture

(i) Outreach activities

Provide data on the staff and students from the department involved in outreach and engagement activities by gender and grade. How is staff and student contribution to outreach and engagement activities formally recognised?

Comment on the participant uptake of these activities by gender.

Oxford Physics has a series of highly active outreach programmes, reaching over 200,000 people in the last five years. Activities are delivered by staff and students across the department and include research talks, workshops, shows, festival stalls, tours and competitions. In 2016 the Department received a Vice-Chancellor's Public Engagement with Research Award for undertaking high quality public engagement. The programme has five main themes (i) supporting students from UK schools with no tradition of applying to Oxford Physics (ii) enriching the school curriculum with links to our research (iii) supporting and encouraging young female physicists to continue their studies in Physics through activities that build confidence, stimulate interest and highlight applications of the subject. (iv) providing young people with a taster of academia through work experience and research projects, and (v) showcasing our research to the general public.

Table 21: Headline figures for 2016-17 for outreach events in schools, by Key Stage.

No. events	Total participants	No. students	No. teachers	No. parents
156	23,763	21,041	1,517	1,205

Girls total (%)	Primary		Secondary		Sixth form
	KS1	KS2	KS3	KS4	KS5
40	175	1,485	6,072	5,564	7,745

We are conscious of the additional burdens this program puts on participating staff, and work to coordinate and run events is carried out by the three full time members of the outreach team. Staff contributions to outreach are recorded on the ADD. Students are encouraged to take on leading roles in small projects, gaining experience of skills including project management, and are paid for participation in more formal events.

Table 22: Outreach staff participation by staff type and gender (total 174 events in 2016/17)

	People involved	Permanent research / academic staff	PDRAs / Fellows	DPhil students	UG students	Support staff
Total	334	61	53	115	80	25
Female	120	10	19	41	34	16
% female	35.9%	16.4%	35.8%	35.7%	42.5%	64.0%

Female student and PDRA participation is high, with just over a third of physicists in outreach events being female. The proportion is lower, at 17% for permanent staff. The department makes sure that researchers taking on this work are rewarded; this is especially difficult for PDRA's and research fellows. We have recently established a fund for projects led by early career researchers to ensure that these staff can lead their own projects, rather than merely participate in those run by the department.

Our outreach has a deliberate focus on attracting girls to careers in Physics. Recognising that young girls make career choices already in late primary / early high-school years, we specifically target these age groups. The newest of these events was our Greenlight 4 Girls event for girls in Key Stage 3 (age 11-14). A total of 104 girls visited the Department for a series of hands-on workshops and their parents attended the Accelerate! Show. Our success is reflected in the continually increasing number of female applicants to the undergraduate course (see Table 4 and Figure 4 above).

Table 21 shows the participation of high school (KS3 and KS4) and sixth form (KS5) students (40% are girls!) in the department's outreach activities that target these age groups (our admissions related focus is sixth form students). In addition, we hold access and training events for school teachers (both specialist and non-specialist). The annual 'Stargazing' event attracts ca. 1200 members of the public every year; families with children form the largest category of visitors.

A key access initiative (for students from low socio-economic backgrounds or low chances of progression to higher education) is the 1 week UNIQ summer school. Over the last three years, it has attracted huge numbers, with a large fraction of women – over 10 times oversubscribed for the 36 places on offer each year (see Table 23 below). A large fraction of the women progress to applying to study Physics.

Table 23: Gender statistics for 1st choice applicants and accepted participants to the UNIQ summer school.

		Female	Male	% female
Applicants	2015	99	231	30%
	2016	145	263	36%
	2017	102	154	40%
Participants	2015	17	19	47%
	2016	16	20	44%
	2017	16	20	44%

(ii) **Visibility of role models**

Describe how the institution builds gender equality into organisation of events.
 Comment on the gender balance of speakers and chairpersons in seminars, workshops and other relevant activities. Comment on publicity materials, including the department's website and images used.

The department runs term-time weekly colloquia sessions and a number of invited and public lectures. Of the 37 events Feb2016 – Feb2018, 7 (19%) were delivered by female academics. The colloquium committee actively seeks women speakers to maintain good gender balance.

Action(G6.5): Widen active efforts to seek women speakers to all seminars across the department, following the lead of the colloquium committee.

The department's website focuses its public facing images on science materials rather than individuals (e.g. the research themes of the department as per the screen capture below (Figure 23)) – images of individuals are typically layers deeper in the webpage structure –research group pages are directly maintained and controlled by the individual PIs / Research Group.

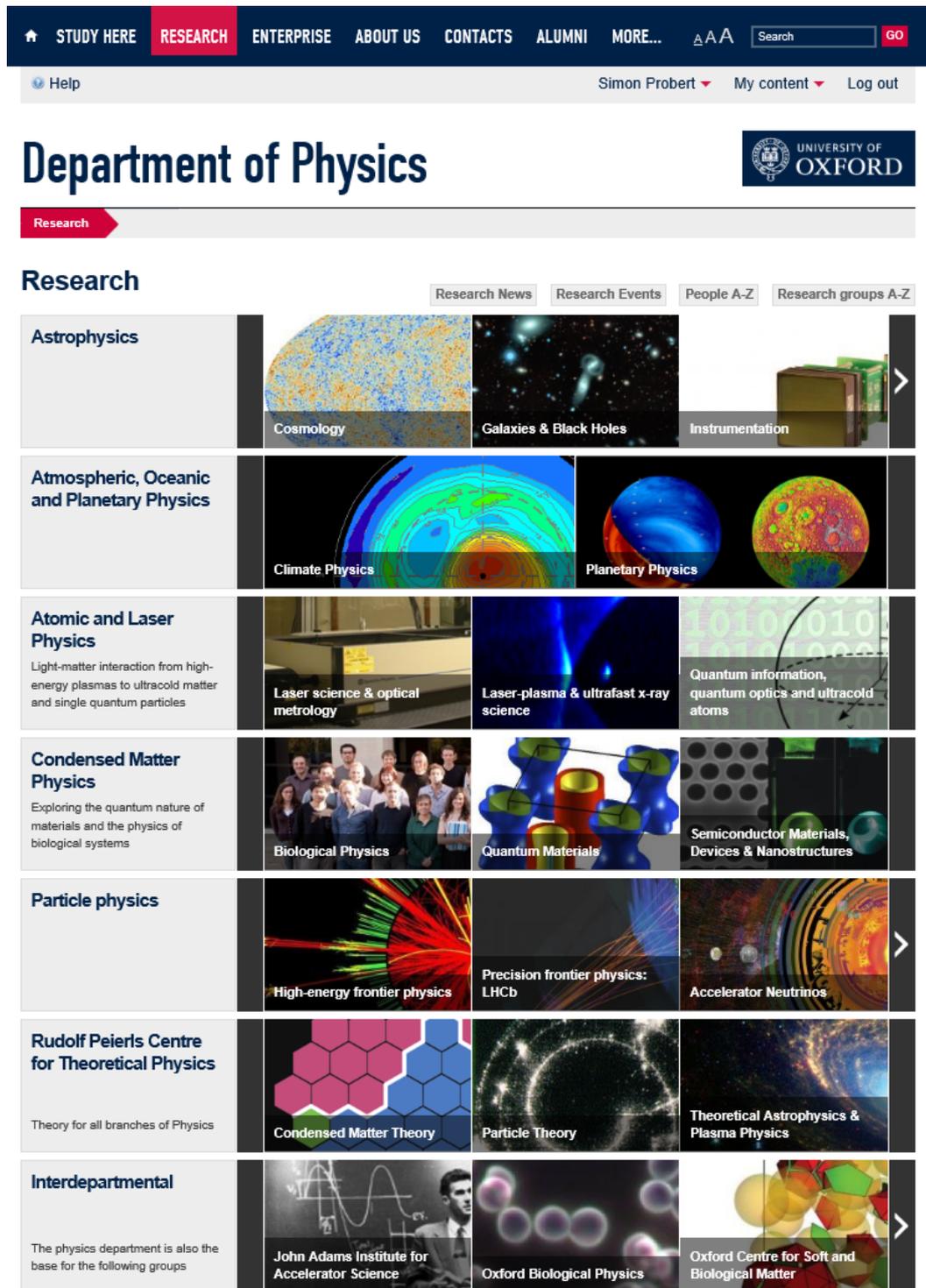


Figure 23: Screen shot of the department's web page highlighting the various research themes

The department prominently placed current female academics (Profs Sonia Contera and Dimitra Rigopoulou) on safety hoardings surrounding the recent Beecroft building development (Figure 24). These 8 foot images stood for over two years whilst the building was being constructed and celebrated the activities within the department, together with the history of Physics and Natural Philosophy in Oxford.



Figure 24: Portraiture on hoardings during Beecroft building construction, portraying the work of women physicists (left Prof. Dimitra Rigopoulou, right Prof. Sonia Contera).

As part of an effort to diversify the portraiture in and around Oxford, the University's E&D Unit commissioned 24 new portraits of current and recent students / staff, to celebrate the diversity within Oxford. We are very pleased that two prominent women physicists (Prof. Dame Jocelyn Bell Burnell and Prof. Dame Carole Jordan) were amongst the 24. The portraits were displayed for 3 months at an exhibition in the Weston Library, and are now on permanent display at the University's Examination Schools.

An exemplar of a role model, Prof Daniela Bortoletto has developed from scratch and successfully delivered leadership of CUWiP (see 5.6(iii) below), a now annual event. The conference agenda includes sessions on inspirational women leaders in Physics – the 2018 conference included presentations and panel sessions from many distinguished women speakers including Dame Prof. Julia Higgins, and Prof. Valerie Gibson.

Women's achievements and recognition is widely advertised and celebrated through news items on websites, the newsletter, and at the State of the Union (see 5.6(iv) below). The department has an excellent track record in awards for women, the HoD and senior management actively encourage female applicants.

(iii) Beacon activity

Demonstrate how the department is a beacon of achievement, including how the department promotes good practice internally and externally to the wider community

We highlight two activities, where Oxford Physics has helped spread good practice, across the wider UK Physics community and within the University, particularly the MPLS Division.

A: CuWiP: Under the able leadership of Prof. Daniela Bortoletto, the Conference of Undergraduate Women in Physics (CUWiP) has been a resounding success for the past four years. *CUWiP aims to help undergraduate women continue in*

physics careers by showcasing options for their educational and professional futures. Each year, over 200 applicants vie for the 100 places for undergraduate women from universities and institutions across the United Kingdom and Ireland come to participate in a variety of events. They find the experience amazing and inspiring – simply to be in a room full of so many women physicists is a novel and stimulating experience for nearly all concerned.

The conference programme includes talks by distinguished speakers, careers panels, academic panels, skills workshops, an “Insights into Teaching” workshop, a medical physics visit, tours to national laboratories (at the Harwell Campus), tours of Physics laboratories at the University of Oxford, and social activities, including a Café Scientifique.



Figure 25: Prof. Daniela Bortoletto with some of the participants of CUWiP 2017

Since its inauguration in 2015, the conference has gone from strength to strength, and is now poised to leave its Oxford home and become an event that tours the UK annually. IoP, STFC, EPSRC, Ogden Trust, Royal Astronomical Society, Winton Capital, and the Physics Department have now been supporting the conference for several years.

The conference has two key goals (1) to enhance the participants’ self-concept, namely the extent to which participants view themselves as physicists and (2) to improve their self-efficacy: the extent to which participants believe they can succeed in physics. The conferences enable attendees to meet, network with, and be inspired by successful women in physics with whom they can share experiences, advice and ideas.

CUWiP UK aims to support and broaden the participation of women in physics by providing information, resources, networks and motivation to pursue advanced degrees and/or careers in physics. The participants come from a variety of backgrounds, with academic attainment and ethnicity reflecting the nation’s female undergraduate population. The conference is supporting widening participation in higher education.

In post-conference feedback, many said they felt much more confident about pursuing a career in physics, and there were many comments testifying how much they had enjoyed and benefited from the conference. It is clearly a transformative experience for many.

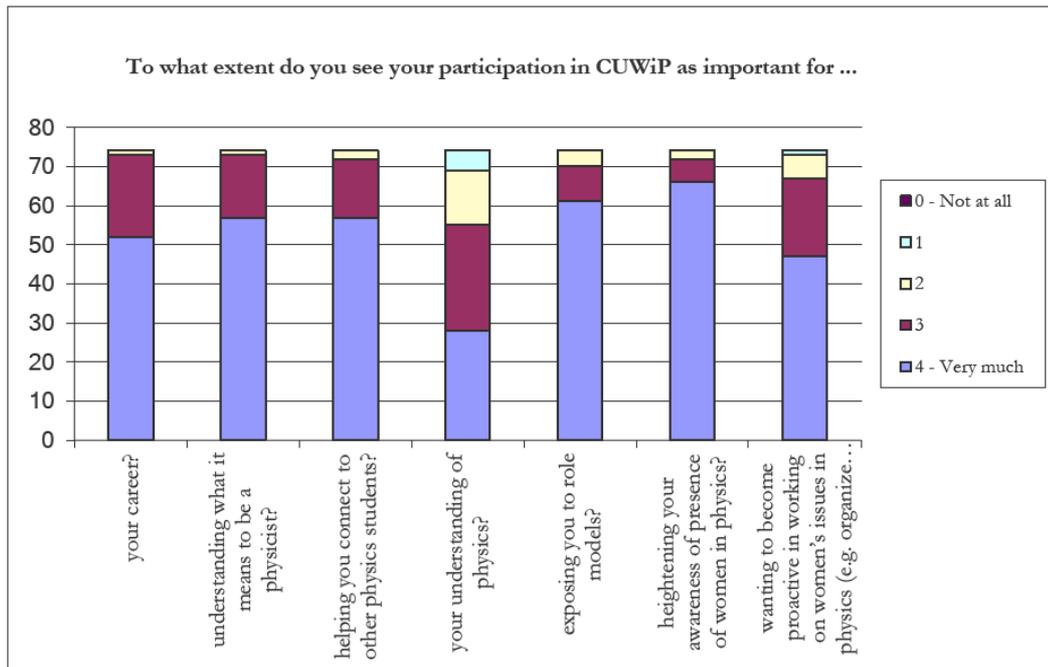


Figure 26: Participants' views of the importance of their participation in CUWiP UK 2017.

Impact: CUWiP is highly oversubscribed every single year. Figure 26 and participant feedback show the tremendous and transformative impact of CUWiP (data from post-conference survey 2017). Further impact statistics are presented in Table 24 below.

Table 24: Participants' responses about CUWiP and what they intend to do after the conference.

This is the first time I have ever found myself in a room of 100 women all discussing Physics and having genuine in depth conversations that are both exciting and stimulating!!

It was such a valuable experience and If I was in charge I'd have this compulsory for all female physicists.

	2015	2016	2017
More confident	53.1%	35.4%	27.6%
Share with others	28.1%	54.2%	20.7%
Better idea about career	64.1%	58.3%	64.0%
Will contact mentor	26.6%	8.3%	19.0%
Motivated to work harder	-	10.4%	13.8%

I am so overwhelmed from the conference and it has been absolutely life changing!

I would say this was the single most significant experience in my physics career so far. This conference was incredible.

B: Maternity funding for all student parents: In 2016, we looked at the current parental leave provision for graduate students, and proposed to PMC that the department should try to harmonise the provision of parental leave to all D.Phil

students, as part of our action plan to treat all members of the department fairly and equally.

Graduate students have little protection and benefits if they become parents during their studies. As a general rule, they are not employees and so do not qualify for statutory maternity pay, or shared paid parental leave benefits. To treat everyone equally, irrespective of funding source, we decided to extend the benefit to all of them, including self-funded students.

In Autumn 2016, PMC adopted the policy that the Department of Physics will pay the standard RCUK stipend for up to 26 weeks for D.Phil students taking parental leave (to either partner, keeping the spirit of UK employment rules), irrespective of funding source. This is not in addition to, but in lieu of, any provision by the funding agency. The Department liaises with the funder, and requires that the student suspends her/his status during the parental leave period.

The paid parental leave period will not affect the normal duration for which the stipend would be paid. The department expects those students availing of paid parental leave to return to studies immediately after the parental leave period, and continue their D.Phil studies to completion. For those opting not to return, the department will make every effort to recover the value of parental leave funding made available.

Impact: It is too early to gauge the full impact of the policy, as student parents are not common in Oxford Physics. However, following the adoption of the policy by PMC, several other departments within the division used our policy document as a template to adopt similar policies. This ultimately led to a uniform, division wide policy being adopted by MPLS division, which is in force since 2017.

(iv) Culture

Demonstrate how the department actively considers gender equality and inclusivity. Provide details of how the Athena SWAN Charter principles have been, and will continue to be, embedded into the culture and workings of the department.

Recognising that the HoD's leadership, active encouragement and backing substantially impact the department's culture, we have written Equality and Diversity into the job description of the HoD and Heads of sub-departments (and influenced MPLS division to do the same for all HoDs). E&D is also a standing agenda item on departmental committees. The previous title of "Chairman of Physics" has been changed to "Head of Physics" to make it more gender neutral.

The department has a positive and inclusive culture, with high fractions reporting supportive colleagues and feeling integrated in their teams, without any appreciable gender differences (see Table 25). The new Beecroft building will allow us to improve further, as it provides better social spaces for interactions. We will have opportunity to install new portraits celebrating diversity. The Beecroft building will be used as a template for redevelopment of other parts of the Physics estate (e.g. the building hosts gender-neutral toilets).

Table 25: Satisfaction of survey respondents with colleagues, and work environment

		Supportive colleagues	Feel integrated in team	Recommend working here
2016	Female	82%	86%	74%
	Male	85%	92%	77%
2018	Female	83%	81%	71%
	Male	88%	88%	78%

Communication across all members of a large department is necessary to promote a culture where everyone feels respected for their work. We subsidise the canteens as the two common rooms are focal points of interaction. Screens in entrance lobbies and lecture theatres are used to promote departmental training sessions, seminars, colloquia and other activities. Physics produces a high quality printed newsletter twice a year, distributed to all staff and alumni.

Action(G3.2): Encourage more men to become involved in promoting gender equality, so that it is not seen as for women, by women.



Figure 27: A tea event organised by Women in Physics

The HoD gives a “State of the Nation” talk twice a year, to which all staff and postgraduates in the department are invited. The talks feature E&D issues, and information about new policies and initiatives. The HoD also applauds the achievements (awards and recognitions) of department members, particularly women physicists (e.g. Women of the Future awards, L’Oreal-UNESCO Women in Science awards) – these also feature as news items on the department web pages and on social media. IoP Juno principles are prominently displayed on posters, as are Women in Physics events.

Action(G6.2): Promote case studies of staff who have directly benefitted from the E&D policies in the department.

(v) Timing of departmental meetings and social gatherings

Describe the consideration given to those with caring responsibilities and part-time staff when scheduling departmental meetings and social gatherings.

Since 2013/14 all committee meetings have been scheduled to take place in core hours between 9.30am and 4pm. The weekly colloquia open to the whole department are held at 3.30 pm followed by tea after the lecture. In 2014, this lecture series was held at 4.15, trials of an earlier time were tested and in 2015/16, after consultation with the department, a 3.30 time was settled upon.

The department holds a family friendly summer barbeque with games in the University parks at the end of the school day, and this year shared a very successful Christmas Party, with another department, for staff and postgraduate students and their families, starting at 4 pm with activities and food for children, and running later into the evening for dancing.

(vi) HR policies

Describe how the department monitors the consistency in application of HR policies for equality, dignity at work, bullying, harassment, grievance and disciplinary processes. Describe actions taken to address any identified differences between policy and practice. Comment on how the department ensures staff with management responsibilities are kept informed and updated on HR policies.

The department operates within the wider institutional context, and HR policy is largely driven by the central University.

The department influences institutional policy through the Divisional Business Partners, and from direct communication lines with central HR. The Head of Finance and Deputy Administrator sits on the HR Futures Priorities Group project board, which is conducting a wide-ranging review of institutional processes across four workstreams:

- Management capability;
- Business process reviews;
- Structuring and Supporting University HR;
- HR policies and processes.

The department identified, through staff and student surveys, that Bullying and Harassment were considered to be significant concerns. In 2016, 9% of respondents identified that they had experienced bullying or harassment, with approximately 14% saying that they had witnessed bullying or harassment. Women reported higher instances of both experiencing and witnessing bullying and harassment, although the overall numbers are very small, and a number of respondents chose not to disclose gender.

The department takes this feedback extremely seriously, and the findings of the survey were discussed in both EDC and PMC, and the following actions agreed:

- A Bullying and Harassment training package to rolled out, to increase awareness of risks, of acceptable and unacceptable behaviour, and of appropriate actions to take.

- Training be delivered in small group workshops on a regular basis.
- Specifically train demonstrators for the undergraduate practical course (given their outward-looking role, as discussed with the IoP Juno panel); and
- That training be mandatory for everyone with line management responsibility (senior staff grades 9 and above, and all academic posts)

To date, over 100 participants have taken part in regular, monthly, training sessions delivered in department, and there has been very positive feedback from delegates.

Perhaps as a result of the increased awareness training, the 2018 staff survey reported an increase in the proportion of respondents indicating they had experienced bullying and harassment to 14%, split virtually equally between men and women. This continues to be a high priority for the department, particularly as the instances of bullying and harassment being reported through the formal HR channels are extremely small (of the order 0 – 2 per year). It is thought to be concerns about the impact on future career prospects that lead to non-reporting, further demonstrating the need for training and development.

We are increasing the number of “Harassment Advisors” – members of staff who are available for informal discussions in confidence. The scheme has been in place for several years, though recent feedback showed that people are only likely to approach people they know personally. Further, we have piloted ‘Responsible Bystander’ training, and are considering how to consolidate those messages into the existing training sessions. We hold exit interviews to get honest feedback from departing staff.

Communication of changes to members of the department takes many forms:

- Institutional and departmental webpages are routinely updated (Staff pages in 2018) with new and developing policies.
- There are separate, specific, webpages for the work of the EDC.
- Minutes of Personnel, EDC and PMC meetings are routinely published on the departmental webpages (redacted as appropriate for confidential materials)
- Since Sep 2017, the Personnel team produce and publish a termly e-newsletter, with details of new and updated policies, together with news on events and activities. This is circulated to all staff and students by email.

Action(G6.2): Establish the HR e-newsletter as a termly publication that highlights E&D issues, with archived copies available on the department website.

(vii) Workload model

Describe any workload allocation model in place and what it includes. Comment on ways in which the model is monitored for gender bias and whether it is taken into account at appraisal/development review and in promotion criteria. Comment on the rotation of responsibilities and if staff consider the model to be transparent and fair.

Physics has smoothly operating workload model (Academic Duties Database – ADD) that is highly regarded by other University departments (we were asked to give presentations to the Workload Allocation Workshop). We started well over a decade ago, with lecturing and examining duties, leading up to a formal ADD v2. Following the Athena-Swan Silver

submission in 2014, steps were taken to consolidate the workload model to ensure fair distribution of the teaching, examining and committee workload across all members of academic staff (v3). In particular, we are monitoring workload by gender across the department and within each sub-department. The interpretation of the plots below (Figure 28) is that men and women have similar median loads, but the moderately under loaded women are usually more under loaded than the corresponding men, and the really under loaded and the really over loaded academics are mostly men.

Description of our workload model: The workload allocation model includes teaching and ‘good citizenship’ (both considered in RoD and tenure). It covers “things you don’t want to do that are in others’ interest”: this includes lecturing, demonstrating, tutorial and class teaching, project supervision, examination paper setting and marking, serving on departmental and external committees, headship of sub-depts, etc. The model doesn’t include research because we don’t have a problem getting people to do it.

It’s mainly used by heads of sub-departments and the Head of Teaching to allocate tasks – it’s useful to be able to point out to someone that they’re doing less than others. Scores are only visible to HoD, Head of Teaching (all scores) and HoSDs (members of their sub-department only). Other academics only have access to their individual data, their rank in the department, and some statistical summary information.

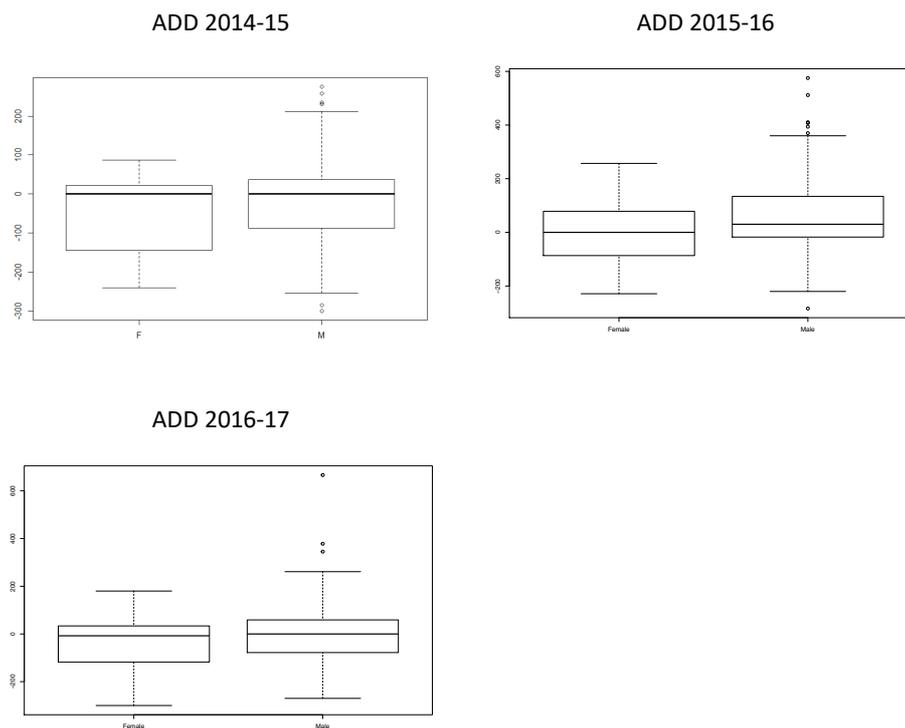


Figure 28: Tukey box plots showing the distribution of workload for female and male academic staff, for three academic years. The dark line represents the median, while the bottom and top of the box represent the first and third quartiles of the distribution. The “whiskers” extend to the highest and lowest values, excluding outliers.

Each person starts with a negative points score (-300 for Lecturers and Associate Professors, -200 for academics on ‘research-heavy’ contracts, 0 for independent research fellowship holders) and then works their way to zero, with points awarded for every task they do. If a substantial amount of their salary is paid from a research grant, the workload is reduced appropriately. College teaching is counted if part of contractual stint, but not

if it is separately remunerated. Points are averaged over time, with each person reviewing entries yearly, agreeing that their workload is fairly represented. Relief is given for sabbatical leave or parental leave at a level which fulfils stint for the period of leave. Exceptional relief can be granted should compelling circumstances arise.

Action(G6.4): Identify activities where women academics would be seen as role models (e.g. undergraduate lecturing, appointment panels) and encourage / entice women to preferentially take on those roles.

There is reasonable balance between the six sub-departments and between men and women; women are under-represented at the top of the scale, largely related to seniority. Plots of the points distribution for the past three years are shown below. Women are on the left, and men on the right.

Committee membership is typically for a 3 year period, as are examining duties (2 years for prelims). Given the effort required to prepare a lecture course, academics usually prefer to lecture for a 3-4 year period. Figure 29 (2018 staff survey) shows the satisfaction levels of the academic staff (excluding research staff) with the fairness of the ADD process. There is no gender bias in satisfaction levels. While 21/52 (40%) are dissatisfied, only 52 of 115 eligible responded to the survey. Across the broader department, workload allocation is deemed fair by 74% (2018) and 76% (2016), up from 49% in 2014.

Academic	Female	Male	Other	Prefer not to say	No Answer	Total
67. What is your sex?						
Strongly agree	1	4	0	0	0	5
Agree	2	19	0	1	1	23
Disagree	2	11	0	0	0	13
Strongly disagree	1	3	0	3	1	8
Don't know	1	1	0	1	0	3
Not applicable	0	0	0	0	0	0
No Answer	0	0	0	0	0	0
Total	7	38	0	5	2	52

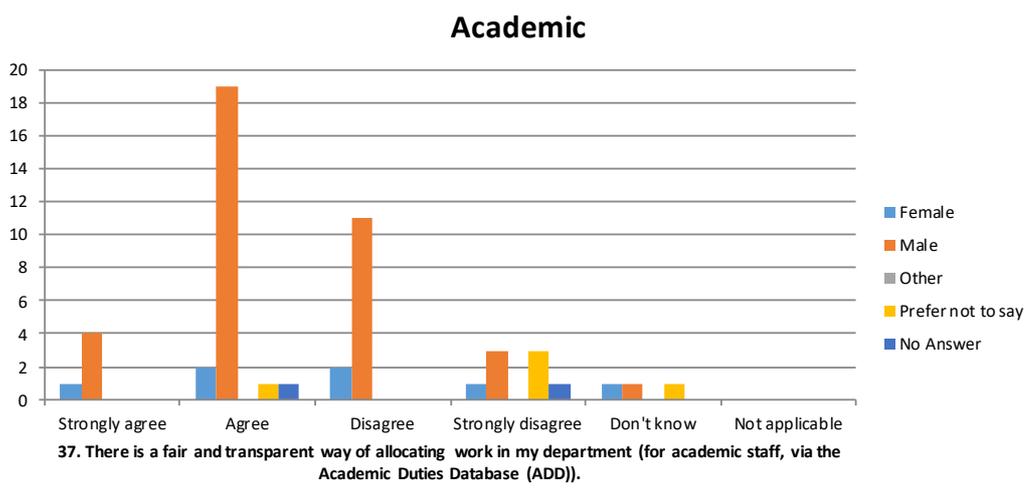


Figure 29: Responses of academic staff (excluding research staff) to fairness of the ADD, from staff experience survey 2018. 52 responses out of 115 eligible academics.

(viii) Representation of men and women on committees

Provide data for all department committees broken down by gender and staff type. Identify the most influential committees. Explain how potential committee members are identified and comment on any consideration given to gender equality in the selection of representatives and what the department is doing to address any gender imbalances. Comment on how the issue of 'committee overload' is addressed where there are small numbers of women or men.

The smooth running of the Physics Department relies on a number of committees that meet termly (or more frequently). A list of the main committees (PMC and standing committees of PMC), with the fraction of women representatives for the past 3 years, is provided in Table 26 below. Also listed are the staff types for the current year. The main decision making body is the PMC, which oversees all aspects of departmental activity. Committee membership is taken into account in the workload model (ADD), ensuring that no single person is overloaded with committee work. Committee membership generally has a three year stint. Upcoming vacancies are advertised by the HoD office in the summer term and (self-)nominations are requested. The HoD appoints new committee members from amongst those nominated giving due consideration to gender equality, and ethnic diversity, where possible; usually there are enough people nominated to fill all the vacancies.

Table 26: List of the main Physics committees – participation by staff type & gender over last 3 years

		Female	Male	% female
Physics Management Committee (PMC) (12 Academic, 0 Research, 2 Support)	2015-16	1	12	8%
	2016-17	2	11	15%
	2017-18	3	11	21%
Standing Committees of PMC				
Academic Committee (11 Academic, 5 Support, 1 Student)	2015-16	3	11	21%
	2016-17	3	12	20%
	2017-18	5	12	29%
Access and Outreach Committee (7 Academic, 2 Research, 4 Support)	2015-16	8	8	50%
	2016-17	7	6	54%
	2017-18	7	6	54%
Industrial Liaison Committee (7 Academic, 9 Support)	2015-16	2	12	14%
	2016-17	3	11	21%
	2017-18	3	13	19%
Clarendon Campus Planning Group (5 Academic, 4 Support, 3 External)	2015-16	0	12	0%
	2016-17	0	8	0%
	2017-18	2	10	17%
Personnel Committee (5 Academic, 4 Support)	2015-16	4	5	44%
	2016-17	5	4	56%
	2017-18	6	3	67%

Grading Committee (4 Academic, 5 Support)	2015-16	2	8	20%
	2016-17	3	7	30%
	2017-18	5	4	56%
Safety Committee (2 Academic, 1 Research, 2 Support)	2015-16	0	6	0%
	2016-17	0	7	0%
	2017-18	0	5	0%
Postdoc Liaison Committee (3 Academic, 8 Research, 1 Support)	2015-16	2	8	20%
	2016-17	3	8	27%
	2017-18	4	8	33%
Equality and Diversity (8 Academic, 3 Research, 7 Support, 1 Student)	2015-16	9	10	47%
	2016-17	12	8	60%
	2017-18	10	9	53%

There is no discernible bias by gender or staff type in committee participation. We actively try not to overburden women with committee and panel participation.

(ix) Participation on influential external committees

How are staff encouraged to participate in other influential external committees and what procedures are in place to encourage women (or men if they are underrepresented) to participate in these committees?

Currently we have 11 people serving on major UKRI or Royal Society committees, of which 5 are women. Membership of external committees where it is in the department's interests to have members (e.g. UKRI, Royal Society, professional bodies, major CERN committees, journal editorial boards) is recognised in the ADD workload model. The HoD advertises openings and urges all academics to apply.

6. CASE STUDIES: IMPACT ON INDIVIDUALS

Recommended word count: 1500 words [1019 words]

Three individuals working in the department should describe how the department's activities have benefitted them.

The subjects of the case studies should include a member of the self-assessment team and a member of professional or support staff. The case studies should include both men and women.

More information on case studies is available in the awards handbook.

Dr. Hannah Lingard, Research Facilitator (support staff), member of SAT.

I started my maternity leave on 18/09/2016 and returned to work on 18/09/2017. During my maternity leave, I was able to use some KIT days to keep up to date with what was going on in the department – department policy meant that I was able to bring my baby along to these. This meant I could continue feeding her and I was supported to feed whenever and wherever necessary in the department and at the away day that I attended. On my return to work, I was permitted to use the annual leave that I had accrued during my maternity leave to take leave on every Friday and Monday between 18/09/2017 and the Christmas break 2017, which meant that I could have a gradual

return to work. This was helpful for both me and my daughter to get used to being apart and for her to still have a good amount of time with mummy as well as time at nursery, and for me to get used to the work environment again. Just before my daughter's birth my husband and I moved to Southampton because he took up a position as a lecturer there, so on my return to work we put a formal flexible working plan in place. This involves me commuting from Southampton some days and working from home on others. Now that I am back working full time, I work from home on Mondays and Fridays usually. Tuesday to Thursday, I commute from Southampton, working in the office from 9:00 until 16:00, with another hour of work on the train each way. This arrangement allows me to still see my daughter in the evenings when I commute to Oxford. Work from home days can be moved around to attend the occasional important meeting on a Monday or Friday in person. I have an EASIT card, which entitles me to 15% off advance train tickets; this is a regional scheme, which the University subscribes to. The arrangement is working well for me and for the department (I have not found any instances of it preventing me from completing my work) and my line manager seems happy with it.

Dr. Nicole Robb, Independent Research Fellow

I completed my undergraduate studies at Imperial College London before doing a DPhil at the University of Oxford. Since completing my DPhil seven years ago, I have embarked on my post-doctoral career, as well as taken time off on two occasions for the births of my two little girls, aged 2 and 5. The generous nature of the University of Oxford's contractual maternity pay scheme allowed me to take 6 months off, whilst receiving my full salary, following the births of each of my children.

After my maternity leave, I chose to return to work, partly to fulfil my own ambition to become an independent scientist, and partly because I wanted to set an example to my daughters that it is possible to be a mum and have a full-time career! This would have been much more difficult if it wasn't for the flexible nature of scientific research. For example, flexible working hours allow me to avoid traffic doing my journey to or from the lab, or to work from home when possible. I make use of the University's childcare voucher scheme with salary sacrifice to help pay for nursery and after-school care.

When I came back to work after the birth of my second daughter I applied to the Returning Carer's Fund, which supports those who have taken a break for caring responsibilities to re-establish their research careers. Although this was just small award in monetary terms it represented my first success at attaining my own independent funding, which greatly helped to boost my confidence in applying *for other awards*. *Following this, I applied for, and was awarded, a Dorothy Hodgkin Fellowship from the Royal Society, which commenced in October 2017.* I am now busy establishing my own fledgling research group. Overall, the support that I have obtained from my direct supervisors, my department, and the University of Oxford as a whole, have been a tremendous help in allowing me to progress my career while maintaining a healthy balance between work and home.

Dr. Scott Osprey, Atmospheric Physics researcher

Balancing Family Life

I arrived in the Department in 2004, following a fixed-term research position at the Rutherford Appleton Laboratory. Now under sub-contract from the National Centre for Atmospheric Science, I have gained promotion and my position is now open ended. I am

married with two primary school children. My partner also works at the University and is in a similar position to myself.

In my time working in the department, I have twice benefitted from two weeks paternity leave. On return to work I was given the flexibility to reschedule my office times, as my partner was initially working part-time. Now both our children attend a local Oxford school; we continue to benefit from flexible working arrangements. These arrangements include spreading work hours beyond the statutory office times.

Many working parents can attest a continual tension between work and home life. During a typical week my partner and I work complementary times to maintain full work hours while fitting in necessary time to meet our childcare commitments. Working arrangements have been flexible enough to cover those odd occasions when the children fall ill and during school mid-term breaks.

In addition to childcare and work flexibility, we also benefit from the right to park within the wider science area. As we live 10 miles from Oxford and need to drop the children off to school in Oxford, the right to find parking near the department has proven invaluable.

It is clear that other staff across the department benefit from similar arrangements. This is shown by the family-friendly scheduling of seminars and colloquia and by the not uncommon appearance of younger family members during the afternoon-pickup and mid-term breaks. In my view the department is acutely sensitive to staffs' life commitments and continues to monitor and assess its provision for staff work life balance.

7. FURTHER INFORMATION

Recommended word count: 500 words[0 words]

Please comment here on any other elements that are relevant to the application.

8. ACTION PLAN

The action plan should present prioritised actions to address the issues identified in this application.

Please present the action plan in the form of a table. For each action define an appropriate success/outcome measure, identify the person/position(s) responsible for the action, and timescales for completion.

The plan should cover current initiatives and your aspirations for the next four years. Actions, and their measures of success, should be Specific, Measurable, Achievable, Relevant and Time-bound (SMART).

See the awards handbook for an example template for an action plan.



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Gold Action Plan 2018-2022

HoD = Head of Department; EDC = Equality and Diversity Committee; PMC = Physics Management Committee; WiP = Women in Physics Committee; DA = Dept. Administrator (Head)

1. Actions specifically related to Undergraduate Students

Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G1.1 Attract more undergraduate applications from qualified women	<p>Extensive programme of outreach and access events already take place, with excellent participation by women</p> <p>Despite the access schemes already in place, this remains an area of focus due to the low levels of women studying Physics at undergraduate level.</p>	<p>Continue to extend the department's access programme and develop strategies for more effective activities to attract young women into physics, particularly targeting KS3 and KS4 year groups.</p> <p>Assess the impact of college access initiatives, with a goal of widening participation if impact is positive</p>	<p>Schools Liaison Officer, UNIQ coordinator</p> <p>Head of Teaching</p>	<p>Immediate and on-going</p> <p>From 2021, once current entrants to Oxford course from access courses have graduated.</p>	<ul style="list-style-type: none"> • Access initiatives activities highly rated by University reviews • Increase in percentages of girls applying to read physics at Oxford, aiming for 30% by 2022 • Access course students doing as well as, or better than average on graduation
G1.2 Continually monitor and review the gender bias in the Undergraduate Admissions process, and act to eliminate any bias, as far as possible.	<p>Data routinely collected and analysed (application numbers, aptitude test scores, shortlist numbers, offers made / accepted).</p> <p>Guidelines improved and tweak the PAT format to achieve uniform results.</p>	<p>Continued analysis of the PAT test and interview scores for each year group and 5 year running average to assess impact of initiatives;</p> <p>Re-assess the weighting of GCSE results, PAT tests and interview marks in the decision making process, in light of analysis results</p> <p>Working with schools advisory group on PAT content and guidance; develop pre-PAT 'Bridging materials' to help those with limited support in preparation for them and thus to aid familiarity with PAT-style problems.</p>	<p>Head of Teaching Administration & Undergraduate Admissions Coordinator</p>	<p>Immediate and in annual reviews</p>	<ul style="list-style-type: none"> • Achieve parity in mean PAT test scores between men and women. • Increased percentage (statistically significant) of women accepted to read Physics at Oxford (aim for 25% by 2025) • Increased by 50% the number of minority and socio-economically disadvantaged pupils accepted to read Physics.

<p>G1.3 Improve information provided to candidates about the interview process to demystify it.</p>	<p>Detailed analysis of admissions process, showing that different groups (e.g. women) perform differently in interviews</p>	<p>Make mock interviews questions available on website.</p> <p>Make videos of mock interviews available to prospective students.</p>	<p>All faculty involved in admissions, Admissions co-ordinator</p>	<p>By Nov 2018</p>	<ul style="list-style-type: none"> • Results of analysis of admissions process in subsequent years show reduced bias at interviews.
<p>G1.4 Encourage women to take up 4 year MPhys course, in preference to 3 year BA degree.</p>	<p>Made 4 year course the default option at entry, with an opt-out (instead of opt-in from 3 year BA)</p> <p>Women in Physics (WiP) Society Mentoring Scheme set up.</p> <p>Removed academic hurdle for continuing on 4 year course.</p> <p>Uniformity of summer internship process across the department</p>	<p>Pursue funding to expand opportunities for 2nd year undergrads to experience research environment in academic and industrial contexts, e.g. summer Intern positions; collect statistics and analyse uptake.</p> <p>Review uptake of 4 year course for cohorts with opt-out, and set up focus groups if significant gender differences continue.</p> <p>Review attainment statistics for women and under-represented groups at end of course.</p>	<p>HoD + EDC + Head of Teaching Administration</p>	<p>On-going</p> <p>For 4 year course outcomes, from 2020 onwards</p>	<ul style="list-style-type: none"> • Opportunities for all 2nd-year undergraduate women to experience a research environment • Equal proportion of women and men choosing to stay for the 4-year MPhys course
<p>G1.5 Monitor undergraduate performance by gender and minimise any attainment gap</p>	<p>Data routinely collected and analysed (3-yr BA and 4-yr MPhys option, mid-term transfers, finals results.</p> <p>Bridging programme introduced for new 1st years.</p>	<p>Send yearly reminders to all tutors about enrolling students to Bridging Course, to ensure that all entrants likely to benefit are referred to the programme.</p> <p>Review A-level offer criteria, and relationship of performance to having Further Maths A level qualification at entry.</p> <p>Continue to participate in Attainment Gap working group and feedback lessons learned.</p>	<p>Head of Teaching Administration</p> <p>College tutors</p> <p>Exams (incl. prelims) coordinator</p>	<p>Immediate and on-going</p>	<ul style="list-style-type: none"> • Improved data on gender differences in performance, particularly with reference to Further Maths qualifications • Elimination of attainment gap that has opened up in recent years

G1.6 Take active leadership in UK to encourage more female undergraduate physicists (and other under-represented groups) to remain in physics careers	'Conference for Undergraduate Women in Physics (CUWiP)' being organised yearly since 2015 (now in its 5 th year)	<ul style="list-style-type: none"> • Aim to get CUWiP to move around the country from year to year. • Secure funding from charities and professional bodies on an on-going basis. • Track participants to provide statistics on eventual uptake of Physics careers. • Use CUWiP model to expand to other under-represented groups 	HoD + CUWiP committee +EDC	On-going (yearly activity) Expansion of CUWiP model in 2019 / 20	<ul style="list-style-type: none"> • Funding for future events secured on an on-going basis • Tracking information presented annually to EDC from 2019. • An event for other under-represented minorities is held
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2. Actions specifically related to Postgraduate Students					
Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G2.1 Encourage more women into postgraduate studies	Data routinely collected and analysed including application numbers and offers made / accepted at sub-dept level Sub-dept web pages updated and guidance for applicants improved WiP Mentor programme introduced; Summer Internships available	Gather statistics on eventual career paths of summer interns to verify impact on pursuing graduate careers in Physics (for all interns, and by gender) Introduced a single (co-ordinated) procedure for DPhil applications across the department, with uniform criteria. Improve information about gender friendliness of DPhil programme on website, through improved imagery and links to sources of help, advice and information.	Head of Teaching Administration Director of Graduate Studies Website coordinator	On-going for summer interns 2020-21 for introduction of single DPhil in Physics	<ul style="list-style-type: none"> • Increased numbers of women applying for DPhil places at Oxford (currently 23%), above national average (25%). • Increased percentage of Oxford graduates continuing to doctoral studies.
G2.2 Ensure parity of DPhil programme for all graduate students	Formalised process of "Transfer of status" (end of year 1) and "confirmation of status" (end of year 2) with written report and viva by 2 independent faculty members to ensure smooth progression through DPhil Funding for student parents for 6 months of parental leave	Continued monitoring of completion rates by sub-dept and gender Biennial graduate student survey to get feedback on inclusion of graduate students within the department (w.r.t. policies and culture) Monitor take-up of parental leave and related completion rates	Director of Graduate Studies Chair of EDC / Head of HR	Annually for completion rates, biennially for survey	<ul style="list-style-type: none"> • Uniformity of completion rates across sub-dept, as well as by gender and ethnicity • Graduate student survey indicates students feel valued, respected and included in dept. culture • All student parents complete within expected period.

G2.3 Eliminate unconscious bias in student-supervisor relationship	Unconscious bias training for all supervisors rolled out across department	Provide guidance to prospective supervisors of best practice in handling informal DPhil queries Provide secretarial support to route queries to prospective supervisors	All DPhil supervisors	Yearly, prior to admissions cycle start	<ul style="list-style-type: none"> Improved diversity in DPhil student intake across department
G2.4 Provide DPhil women students with support to promote careers in Physics / Academia	Career service run by University to provide life-long career help and advice to DPhil students Senior DPhils invited to annual postdoc Career event	Provide support for DPhils to apply to independent fellowships, formalise availability of mock interview training Monitor take-up of transferrable skills training across department	Chair of Postdoc Liaison Committee + Head of HR Head of Teaching administration	On-going + Yearly for careers event	<ul style="list-style-type: none"> Improvement in career choice statistics of DPhil Alumni (more uptake of Physics / STEM careers)

3. Actions specifically related to Postdoctoral Researchers (PDRAs)					
Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G3.1 Reduce risk of bias on part of Principal Investigators (Grant holders) to hire young women as Post doctoral researchers	Stress uniformity of Shared Parental leave provision to improve take-up of parental leave by men Communicate research council funding rules to PIs to ensure clarity of maternity / parental leave provision Create divisional pot that MPLS departments can access to fund contract extensions / replacement recruitment for parental leave takers.	Better communicate the provision of replacement recruitment / contract extensions that PIs can access, so as to reduce their (un)conscious bias in recruiting young women Ensure unconscious bias training course is updated to make/keep it fit-for-purpose. Augment online course with personalised training, as far as possible	HoD / Grants administrator Chair of E&D / Head of HR, OLI All Principal Investigators	2018 and on-going	<ul style="list-style-type: none"> Parity for women and men in success rates of applications for PDRA posts, independent of funder. Good & continued take-up of unconscious bias training by all academic staff, such that 100% of current academics have received training and new starters undertake training within their first year of appointment.

G3.2 Improved integration of PDRAs in department culture and activities	Revamped Postdoc Liaison Committee with Chairperson being a PMC member Post-doc specific Wiki, PDRA web pages, Post-doc social events (subsidised by dept), WiP events	Ensure that Postdoc Liaison committee members are also sub-dept postdoc representatives, and are invited to sub-dept staff meetings Encourage men to attend WiP events, monitor attendance and up-take of WiP events, and streamline provision accordingly	HoD, HoSD, PMC WiP President and Treasurer	2018/19 and on-going	<ul style="list-style-type: none"> Feedback from biennial staff survey indicates postdocs are happy with level of inclusion in dept culture / events / they have a say in the way the department is managed WiP events report broad attendance from all sub-groups, matching gender fractions for each staff type,
G3.3 Enhance transferable skills training for PDRAs	Annual careers event held specifically for PDRAs, including talks by Career Service Divisional policy to ensure PDRAs are allowed at least 10 training days per year.	Coordinate advertisements for teaching opportunities for PDRAs, particularly for college teaching and demonstrating, and track uptake (both via Postdoc wiki) Add 10 day training entitlement to job descriptions and contracts for PDRAs	Head of Teaching Administration All PIs hiring PDRAs	On-going	<ul style="list-style-type: none"> PDRAs report satisfaction in careers survey with levels of training and transferable skills opportunities available. Take-up of teaching opportunities matches fraction pursuing academic careers.
G3.4 Improve uptake of re-grading and awards for excellence amongst PDRAs	Specific training for Awards for Excellence nominations rolled out to PIs.	Communicate to PIs that extra costs stemming from re-grading / awards for excellence that cannot be charged to grants will be under-written by the department, thus encouraging more nominations	All PIs / grant holders	Yearly, for Awards for Excellence exercise	<ul style="list-style-type: none"> Increased number and diversity of PDRA staff nominated for Awards for Excellence / putting themselves up for re-grading

4. Actions specifically related to Academic Staff

Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G4.1 Encourage more female applicants for posts, especially at Academic Staff and Fellowship levels	Despite small number statistics, monitor the number of applicants, short-listed candidates, offers and acceptances by women for faculty posts.	Adopt best practice formulated by MPLS (benefit of access to larger numbers) about wording of applications in a gender neutral manner, critically assessing the "required criteria" in job adverts.	HoD + PMC + HR Selection panels for faculty posts	On-going	<ul style="list-style-type: none"> Increased numbers of women applying for academic posts Long-term increase in proportion of female academics, with aim of every one in four new hires being women

G4.2 Improve gender balance on recruitment panels, improve reporting of gender-related data and increase awareness of unconscious bias	Unconscious bias training mandatory for Panel Chairs, and majority of panel members All academic appointments have 2 female panel members	Consider awarding ADD points for membership of recruitment panels (particularly for graduate student recruitment) Compulsory unconscious bias training for all recruiters, whether for undergraduate / postgraduate students, postdocs, support staff or academic staff. Improve record keeping for panel membership of postdoctoral recruitments	HR + PMC + all faculty engaged in recruitment of students / PDRAs / staff	On-going	<ul style="list-style-type: none"> Improved (recorded) representation of women on recruitment panels 100% of panel members undergoing unconscious bias training
G4.3 Encourage women academics to apply for promotion (Recognition of Distinction)	Yearly / biennial PDR (development discussion) for all faculty with Head of Dept / Head of Division	Encourage women faculty to apply for promotion (regrading / Recognition of Distinction) by providing information of process at PDR Encourage all academic staff to undertake PDR every year Advertise Academic Leadership programme widely and encourage women to apply	HoD + Head of HR+ HoSD	On-going	<ul style="list-style-type: none"> All eligible women faculty have applied for regrading / RoD, at appropriate point of career. Improved uptake of PDR by all academic staff, particularly women aiming for 100% of those in post for over a year.

5. Actions specifically related to Support Staff

Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G5.1 Improve uptake of re-grading and awards for excellence amongst support staff	Specific training for Awards for Excellence nominations rolled out to PIs	Communicate to PIs that extra costs stemming from re-grading / awards for excellence that cannot be charged to grants will be under-written by the department, thus encouraging more nominations	All PIs / grant holders	Yearly, for Awards for Excellence exercise	<ul style="list-style-type: none"> Increased number and diversity of support staff nominated for Awards for Excellence / putting themselves up for re-grading

G5.2 Improve participation of support staff in WiP	Support staff are included in all announcements of WiP events	Clarify to support staff that they are welcome to WiP events and encourage participation Expand WiP mentoring opportunities (both mentors and mentees) to support staff	WiP	2018-2020	<ul style="list-style-type: none"> Support staff participation in WiP events to match the profile of the department by 2020. Mentoring take-up by support staff increased to 50%
G5.3 Enhance SDD monitoring and uptake amongst support staff	PDR (SDD) is compulsory for all staff in the department Monitoring via web form and copy of SDD record in personnel files	Rejuvenate SDD training for line managers / academics, provide dedicated leaflet with list of opportunities available (training / mentoring / secondment) Incentivise line managers and staff to complete SDD regularly PMC to act on anonymised feedback from SDD	DA + Head of HR + all line managers	Yearly, for SDD cycle	<ul style="list-style-type: none"> SDD seen as useful by majority of staff.

6. Actions specifically related to Department Culture and Environment

Action	Previous Actions	Further Planned Actions	Responsibility	Timeline	Success Measure
G6.1 Roll out anti-harassment and anti-bullying training (AHAB) to all staff	AHAB training sessions on offer several times per term, since roll-out of training at start of academic year 2017-18 Special training sessions for laboratory demonstrators arranged Inclusion of responsible bystander training element in AHAB training	AHAB training to be made compulsory for all staff, starting with senior academic staff (supervisors, PIs, grant holders) and line managers Establish AHAB training for new staff as part of training requirement (similar to Health and Safety training)	Head of HR + DA	Immediate and on-going	<ul style="list-style-type: none"> Reduction in level of bullying and harassment reported by all staff in biennial staff survey Increased awareness of what constitutes “respectful behaviour” amongst all staff with line management / supervision responsibilities All academics and senior staff (>1yr in post) have undertaken AHAB training by July 2019

<p>G6.2 Improve communication within department, particularly of policy and events</p>	<p>Administrators meeting following every PMC meeting to ensure policy decisions are promptly conveyed to sub-dept administrators</p> <p>Information screens at entrances to all Physics buildings</p> <p>Unrestricted minutes of all committees on website</p> <p>Bi-annual "State of the Nation" address by HoD</p>	<p>Use overhead projectors in seminar rooms to double as information screens</p> <p>Use "postcards" to communicate recent successes of the staff.</p> <p>Termly HR newsletter to disseminate information about policies, initiatives and training. Archived copies available at induction.</p>	<p>HoD + DA + Head of HR + EDC + PMC</p>	<p>2018-19</p>	<ul style="list-style-type: none"> Improved information flow mechanisms (screens, postcards, newsletters) from departmental management to members of staff and students in place by end of 2019 Positive feedback from staff survey in terms of communications within the department
<p>G6.3 Devolve leadership of E&D within the department by distributing areas of responsibility</p>	<p>EDC members responsible for specific data gathering within areas of remit</p>	<p>Improve engagement of EDC members by distributing responsibility amongst EDC</p>	<p>HoD + EDC chair + EDC</p>	<p>2018-19 and on-going</p>	<ul style="list-style-type: none"> Increase in number and range of E&D initiatives being actively pursued.
<p>G6.4 Promote the visibility of female role models in the Department</p>	<p>E&D webpages completely revised during 2014</p> <p>WiP webpages introduced 2014</p> <p>Higher weight to outward facing roles (lecturing), improving diversity</p>	<p>Monitor and maintain high visibility of women in departmental literature, websites and outreach programme</p>	<p>HoD + EDC + Outreach Officer + Head of Teaching</p>	<p>Summer 2015</p>	<ul style="list-style-type: none"> High visibility of women in department literature / websites
<p>G6.5 Improve diversity of Seminar speakers</p>	<p>Central monitoring of colloquium speaker gender</p>	<p>Good gender balance on colloquium and seminar committees across department.</p> <p>Expand monitoring of speaker gender to all departmental seminars</p>	<p>HoD, HoSD, PMC and all faculty</p>	<p>On-going</p>	<ul style="list-style-type: none"> Aim for 25% representation of female speakers in all department seminars over the next 4 years.

