

Name of institution	Imperial College London	
Department	Department of Mathematics	
Focus of department	STEMM	
Date of application	20 May 2020	
Award Level	Silver	
Institution Athena SWAN award	Date: April 2016	Level: Silver
Contact for application	Prof. Tom Coates	
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Departmental website	https://www.imperial.ac.uk/mathematics	

Total word count: 12266

Word limit, including the 500 additional words available due to COVID-19: 12500

1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

Recommended word count: Bronze: 500 words | Silver: 500 words

Dear Mr Lush,

Our Silver application process is essential to our drive to embed equality and transparency into every aspect of Department life.

This has been a key priority for me since becoming Head of Department in October 2017. I began my academic career at Harvard at a time when one heard unfair remarks behind closed doors about the academic potential of female and other minority PhD students. The impact this had on my friends and colleagues impressed on me the importance of building a research culture where *everyone* is encouraged and valued. When I moved to UC Irvine in 2003 to help build a new Department of Statistics, I prioritized transparent processes and finding staff who value fairness. Here at Imperial, we have long struggled with diversity: not only in terms of gender (the focus of our Bronze process), but also racial, socio-economic, LGBTQ+, and cultural. We are strikingly homogenous and change will require a deliberate and sustained strategy. We have taken a number of steps toward this, and are beginning to see results. Over the last two years our proportion of academic staff who are female has increased from 7% to 11% – important progress against a long-standing imbalance. I was particularly happy to see evidence of a positive, supportive culture from our interviews and focus groups with female staff.

Since becoming Head of Department I have led an overhaul of our procedures to emphasise transparency and fairness, and to make expectations and best practice explicit. This is most visible in changes around promotion and recruitment, where we also see encouraging results: in the past year we hired two new female Lecturers, two female Senior Lecturers joined the Department, and all three new Chapman Fellows (our flagship postdocs) are female. We have expanded our diversity committee, which I sit on, adding Teaching Fellows and Professional Services members (to reflect *all* Department staff) and renaming it the Equality, Diversity and Inclusion Committee (to emphasise all aspects of diversity). I ensured that a new administrator, David Whittaker, has substantial time allocated to support EDI activities; he acts as Committee Secretary. We have introduced annual mandatory all-staff EDI-training activities: Unconscious Bias training this year and Active Bystander training next year.

Our top three priorities going forward are: undergraduate gender balance, gender balance in academic recruitment, and our academic pipeline. Despite several initiatives in our Bronze process, our undergraduate gender balance remains poor and we are particularly concerned about the small number of undergraduate women who go to postgraduate study. Here I highlight our beacon activity: Mary Lister McCammon Summer Research Fellowships. Started in 2019, this is a ten-week summer research program for female undergraduates entering the final year of a Masters programme. It provides a generous bursary, a research project supervised by a member of the Department, communications training, advice on postgraduate applications, and cohort-building activities. This is a

substantial commitment of resources (£49K/year) and staff time, targeted directly at a key spot in the “leaky pipeline”. Feedback from the first cohort was extremely positive.

Our Silver process supports one of my key priorities for our Department: building a culture and an environment rooted in fairness, in which everyone is supported and everyone can succeed.

The information presented in this application (including qualitative and quantitative data) is an honest, accurate and true representation of our Department.

Sincerely,

David A. van Dyk
Head of Department

Word count for Section 1. Letter of endorsement from the Head of Department: **562 words**
Aggregate word count for application: **562 words**

2. TABLE OF ABBREVIATIONS

Abbreviation	Full term
CDT	Centre for Doctoral Training
EDI	Equality, Diversity and Inclusion
FT	Full Time
HoD	Head of Department
L&T	Learning and Teaching
MAT	Mathematics Admissions Test
PGR	Postgraduate Research
PGT	Postgraduate Taught
PI	Principal Investigator
PDRA	Post-Doctoral Research Assistant
PFDC	Post-Doc and Fellows Development Centre
PRDP	Personal Review and Development Plan
PT	Part Time
SAT	Self-Assessment Team
UG	Undergraduate
WP	Widening Participation

3. DESCRIPTION OF THE DEPARTMENT

Recommended word count: Bronze: 500 words | Silver: 500 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 Department is one of the larger Mathematics departments in the UK, with over 200 staff. We offer 3-year BSc and 4-year MSci programmes (see Table 2) and 1-year taught MSc courses in Applied Mathematics, Mathematical Finance, Pure Mathematics, and Statistics, as well as two small 1-year MRes programs. The Department hosts six EPSRC-funded Centres for Doctoral Training (CDTs), and is involved in a number of others across Imperial. All staff and students are based in one building at Imperial’s South Kensington campus.

Table 1: Current Staff and Student Numbers in the Department

	Female	Male	Total
Undergraduates (UG)	229	479	708 (32% F)
Taught postgraduates (PGT)	49	101	150 (33% F)
Research postgraduates (PGR)	41	181	222 (18% F)
Research Staff	16	68	84 (19% F)
Learning and Teaching Staff	5	8	13 (38% F)
Academic Staff	6	80	86 (7% F)
Professional Services Staff	13	9	22 (59% F)

Table 2: Gender Balance in Undergraduate Courses offered by the Department.

Course	Enrolment
BSc Mathematics	208 (36% F)
MSci Mathematics	253 (19% F)
BSc Pure Mathematics	24 (17% F)
MSci Mathematics with a Year in Europe	29 (31% F)
BSc Mathematics with Applied Mathematics/Math. Physics	22 (41% F)
BSc Mathematics with Mathematical Computation	7 (29% F)
BSc Mathematics with Statistics	50 (48% F)
BSc Mathematics with Statistics for Finance	106 (52% F)
BSc Mathematics, Optimisation and Statistics	9 (44% F)

The Department holds strong research groups across the full range of mathematics, including Biomathematics, Fluid Mechanics, Geometry, Mathematical Finance, Number Theory, and Statistical Learning. This research depth enriches the undergraduate and PGT experience in several ways: students are offered a wide range of topics for essays, Undergraduate Research Opportunity (UROP) projects, first-year and final-year BSc and MSci projects, and MSc projects.

The Department has a long-standing problem with gender balance at all levels, and with lack of diversity more broadly. Key areas where we have focussed and seen improvements are the gender balance among post-doctoral researchers, in transparency and fairness of procedures (especially around promotion), and in gender balance in academic staff recruitment. Key challenges going forward, where we have made changes but have yet to see clear results, include gender balance in our undergraduate programs, tackling the achievement gap in our undergraduate programs, and increasing diversity in all its forms (including race, socio-economic background, LGBTQ+ status) across the Department. This requires a conscious and deliberate process of cultural change. We are no longer at the beginning of this process – we believe that we are on the right track, and can see the first changes taking root – but there is still a long way to go.

Word count for Section 2. Description of the department: **289 words**


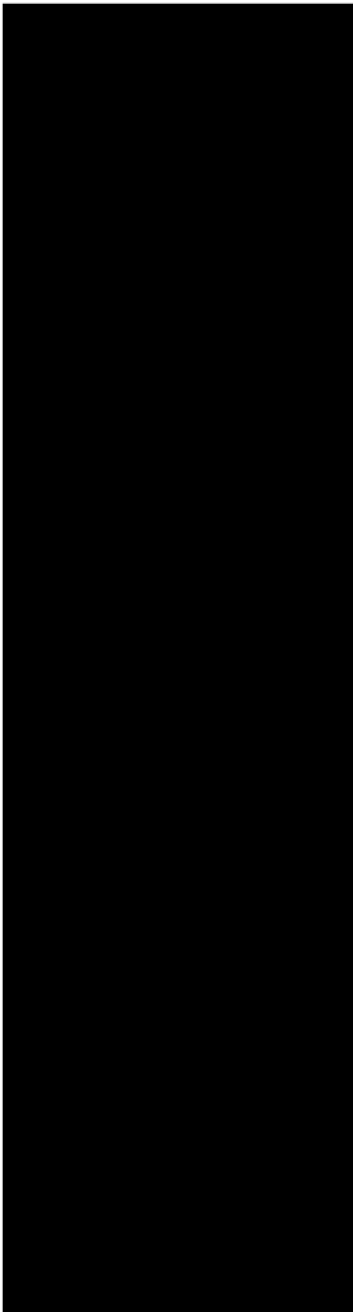



Aggregate word count for application: **851 words**


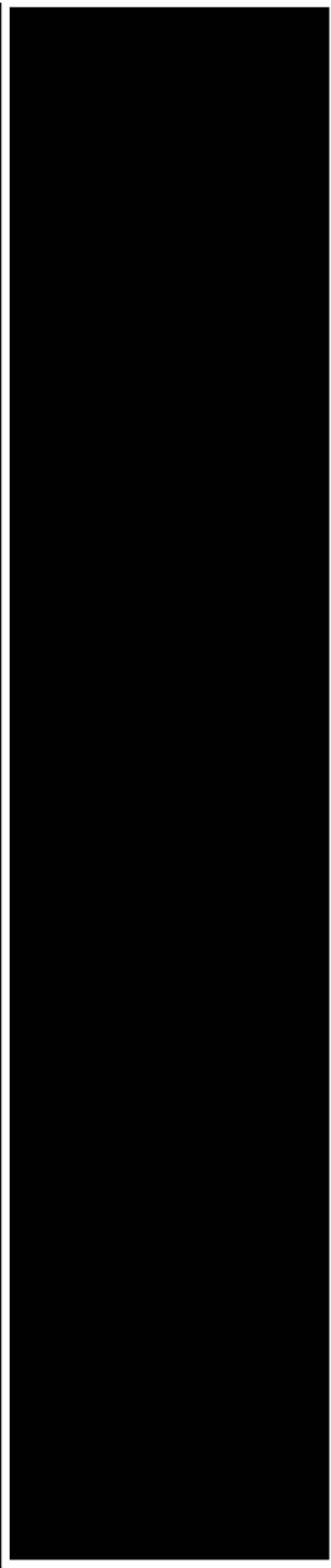


4. THE SELF-ASSESSMENT PROCESS



Recommended word count: Bronze: 1000 words | Silver: 1000 words


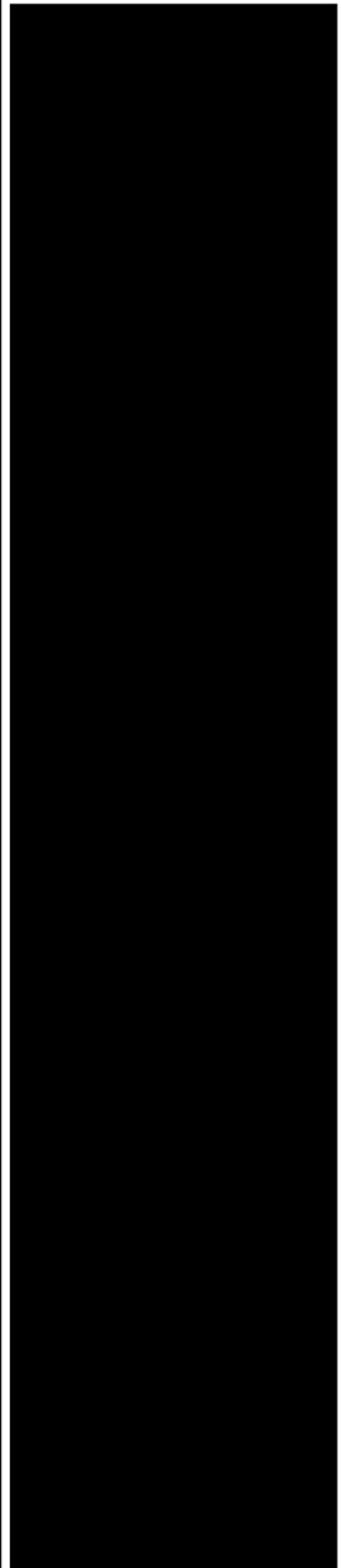



(i) A description of the self-assessment team

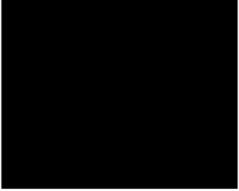
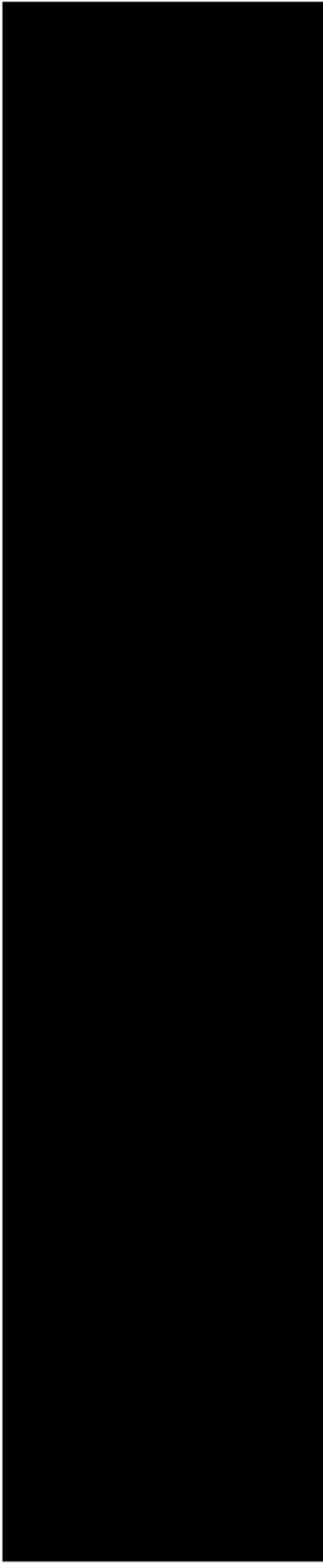
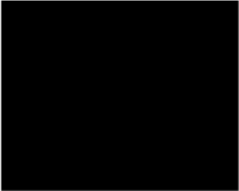
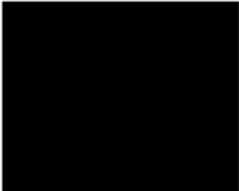
Table 3: Membership of the Self-Assessment Team

Name Gender Date of joining SAT	Job title / Grade Role on SAT	Profile / Experiences
Heather Battey 	Lecturer in Statistics Equality and Diversity Officer for the Mathematics of Planet Earth CDT Performed data analysis Designed Action Plan items Wrote parts of the application	
Claudio Bellani 	PGR student PGR representative	
Rob Bell 	College Athena SWAN Coordinator, Level 3b Contributed to data collection and analysis Advised on application Provided link to College-level activity	
Tom Coates 	Professor of Pure Mathematics Chair of the EDI Committee Co-ordinated the application Designed Action Plan items Wrote parts of the application	

<p>Colin Cotter</p> 	<p>Professor of Computational Mathematics</p> <p>Co-Director of the EPSRC Centre for Doctoral Training in Mathematics for Planet Earth</p> <p>Contributed to data analysis Designed Action Plan items Wrote parts of the application</p>	
<p>David van Dyk</p> 	<p>Head of Department</p> <p>Designed Action Plan items Wrote parts of the application</p>	
<p>Liz Elvidge</p> 	<p>Head, Postdoc and Fellows Development Centre</p> <p>Advised on the application Provided link to College and national-level activity Designed Action Plan items</p>	

<p>Inkeri Hibbins</p> 	<p>Undergraduate Liaison Office Co-chair of the Student Staff Committee Deputy Chair of the EDI Committee</p> <p>Performed data analysis Designed Action Plan items Wrote parts of the application</p>	
<p>Charlotte Kestner</p> 	<p>Senior Teaching Fellow</p> <p>UG Admissions Tutor</p> <p>Sits on the Promotions panel for staff in the Teaching and Learning family.</p> <p>Designed Action Plan items Wrote parts of the application</p>	

<p>Marie-Amelie Lawn</p> 	<p>Strategic Teaching Fellow in Pure Mathematics</p> <p>Teaching Fellow representative</p> <p>Designed Action Plan items Wrote parts of the application</p>	
<p>Daniel Mortlock</p> 	<p>Senior Lecturer (joint appointment with the Department of Physics)</p> <p>Part-time guest Professor in the Astronomy Department at the University of Stockholm</p> <p>Particular interest in career development issues, and in sharing best practice between the Departments of Mathematics and Physics.</p> <p>Performed data analysis Designed Action Plan items Wrote parts of the application</p>	
<p>Isabel Müller</p> 	<p>Research Fellow</p> <p>Post-doc representative</p> <p>Designed Action Plan items</p>	
<p>Andy Parry</p> 	<p>Deputy Head of Department</p> <p>Designed Action Plan items Wrote parts of the application</p>	

<p>Vahid Shahrezaei</p> 	<p>Reader in Biomathematics</p> <p>Diversity Champion for the Faculty of Natural Sciences</p> <p>Designed Action Plan items Wrote parts of the application</p>	
<p>Adam Townsend</p> 	<p>RA in the Applied Mathematics and Mathematical Physics section, Grade B</p> <p>Postdoc representative</p> <p>Designed Action Plan items</p>	
<p>David Fong Whittaker</p> 	<p>Executive Assistant and Office Manager</p> <p>Secretary of the EDI Committee</p> <p>Sourced and collated data Designed Action Plan items Wrote parts of the application</p>	

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(ii) An account of the self-assessment process

Our self-assessment team (SAT) is the Department Equality, Diversity, and Inclusion Committee. This was previously called the Academic Opportunity Committee. It was reconstituted and expanded in January 2017; prior to this, EDI activities in the Department were less structured and relied on heroic efforts by a small number of staff members¹. Since then we have expanded the Committee further, adding representatives of Professional Services staff and Teaching Fellows, and changed its name to reflect our increased emphasis on diversity more broadly (not just gender) and broader remit (not just academic staff). The Deputy Chair of the Committee is a member of Professional Services. Some members join the EDI Committee through volunteering; the Chair of the Committee and HoD also invite specific members of the Department to join, so that the Committee is representative of the whole Department. Committee membership and EDI-related activities are taken account of in the Department workload model: see Section 6.6(v) on page 69.

Since the expansion of the EDI Committee, we have systematically reviewed practices and policies in the Department, with this process ramping up as we approach our Silver submission. This process has been energised by the appointment of a HoD who has made improving equality and transparency key goals of his tenure, and by the hiring of an administrator, David Whittaker, with explicit responsibility for supporting Departmental EDI activities.

As well as regular whole-Committee review of policies and data in key areas (such as UG recruitment, staff recruitment, and Departmental culture), in the run-up to Silver submission individuals and small groups of EDI Committee members have taken responsibility for detailed analysis of different sections of the Athena application. The whole Committee then synthesised these sections into one document and agreed on a coherent, prioritised Action Plan. Inputs into our self-assessment process included:

- Data from annual reviews (called PRDPs, for Personal Review and Development Plan) for each staff member. In alternate years, the HoD does the PRDP for each member

¹ In particular: Dorothy Buck, Tom Coates, Caroline Colijn, and Emma McCoy.

of academic staff, and ahead of these gets input from the Chair of the EDI Committee regarding EDI-related topics to be discussed².

- Data from the biannual College-wide Staff Survey. We looked at responses by staff type to gain the most from the survey. The response rate to the 2019 survey was 45%.
- To strengthen the gender focus of our staff consultation, we ran focus groups and individual interviews with female members of staff (PDRAs, permanent academic staff, and Professional Services staff). To maintain anonymity these were performed by an external consultant, who aggregated and anonymised the responses before reporting to the EDI Committee. All female members of staff in the Department were invited to participate; a total of 23 interviews were conducted.
- Focus groups with female UG students (31 participants). We worked together with the EDI Committees at University College London and the University of Warwick to hold focus groups with female UG students at each institution, concentrating on their experience of the admissions process. The focus groups were moderated by an external consultant, with the (aggregated, anonymised) results shared with each institution. This collaboration allowed us to get insight from undergraduate students who chose not to apply to our program, leading to a number of changes to our Open Days and admissions policies.
- Shared experience and best practice from other Departments. In particular, the Department of Physics at Imperial shares many of the same challenges as us, and is further along the process of tackling these. A member of our EDI Committee, Daniel Mortlock, who holds a joint appointment with Physics and sits on their Juno Committee (=Athena SAT), acts as a conduit. Other Committee members, Rob Bell and Liz Elvidge, bring significant Athena experience from across College and other institutions. Tom Coates and Vahid Shahrezaei represent the Department on the Faculty of Natural Sciences EDI Committee, which shares best practice in EDI across the Faculty.

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

The EDI Committee meets regularly – at least twice per term – and the Chair of the EDI Committee is automatically a member of the Department Management Committee. There is a dedicated slot in the bimonthly all-Department meeting for reporting on EDI activities, and a dedicated noticeboard in the Department for EDI news and events. All of this will continue going forward.

In the first meeting after our Athena award, the EDI Committee will translate the Action Plan into a schedule of work (Gantt chart). The EDI Administrator, David Whittaker, will be responsible for maintaining this schedule and an up-to-date copy of the Action Plan, and for reminding those responsible for actions of their tasks and deadlines. At the first meeting we will also make any changes to the Action Plan that are necessary due to the coronavirus pandemic. The majority of this application was completed before the start of the pandemic, and is based on a self-assessment process which took place over many months. The effect of the pandemic on UK academia and our Department is likely to be profound, but is at this

² This led directly, for example, to the Department's new policy funding caring costs for conference attendance.

point still unclear. Rather than attempt to predict this, or to rapidly repeat our self-assessment in a time of substantial uncertainty, we will adjust Actions going forward as appropriate. In doing so, we will pay very close attention to the implications of the pandemic and associated lockdown for gender equality – particularly for those who have caring responsibilities, or with roles that have a substantial teaching component.

Word count for Section 3. The self-assessment process: **1020 words**
Aggregate word count for application: **1871 words**

5. A PICTURE OF THE DEPARTMENT

Recommended word count: Bronze: 2000 words | Silver: 2000 words

5.1 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. Provide data on course application, offers and acceptance rates and degree completion rates by gender.

All UG students at Imperial are FT.

Table 4: Gender Balance At Each Stage of the UG Admissions Process

Year	Applications		Offers		Acceptances	
	F (%F)	M	F (%F)	M	F (%F)	M
2010/11	619 (35%)	1,134	315 (36%)	571	177 (37%)	299
2011/12	561 (35%)	1,053	269 (35%)	490	159 (38%)	261
2012/13	555 (32%)	1,155	312 (34%)	601	183 (38%)	304
2013/14	566 (33%)	1,169	293 (32%)	623	167 (35%)	309
2014/15	496 (34%)	969	264 (30%)	626	151 (30%)	345
2015/16	585 (34%)	1,150	271 (31%)	591	171 (34%)	333
2016/17	621 (32%)	1,320	238 (28%)	621	158 (30%)	369
2017/18	729 (35%)	1,327	298 (34%)	584	194 (35%)	368
2018/19	831 (34%)	1,589	273 (32%)	593	144 (29%)	352
2019/20	956 (37%)	1,663	268 (30%)	625	169 (31%)	384

Figure 1: Undergraduate Admissions Statistics

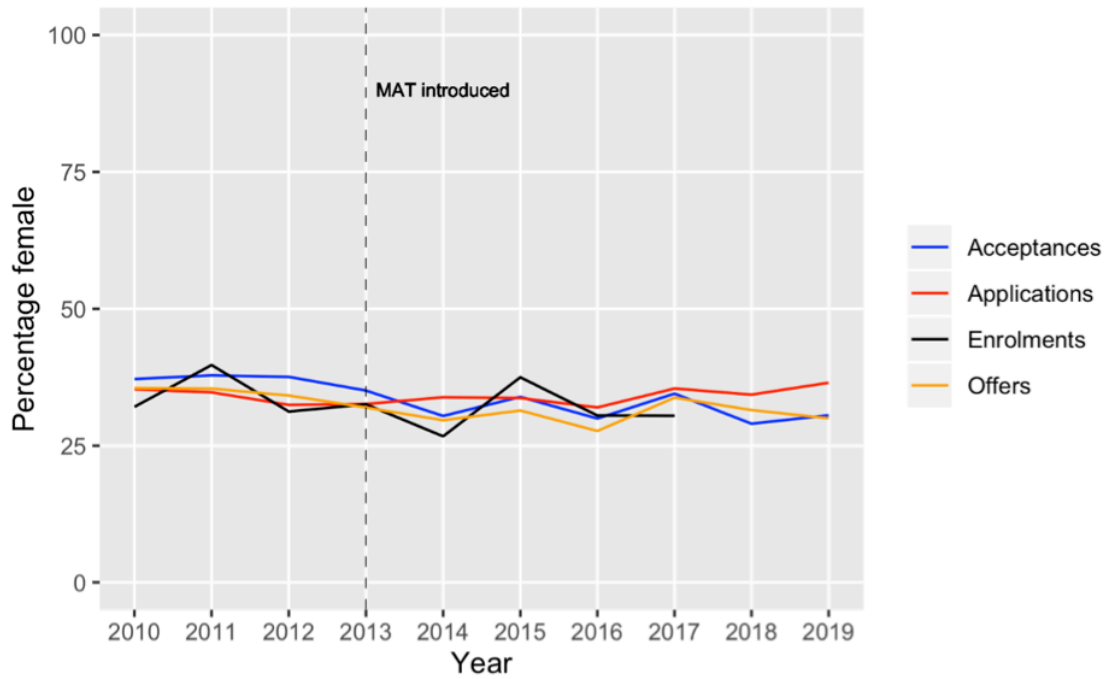


Figure 2: Undergraduate Admission Statistics for Home/EU and Overseas Applicants

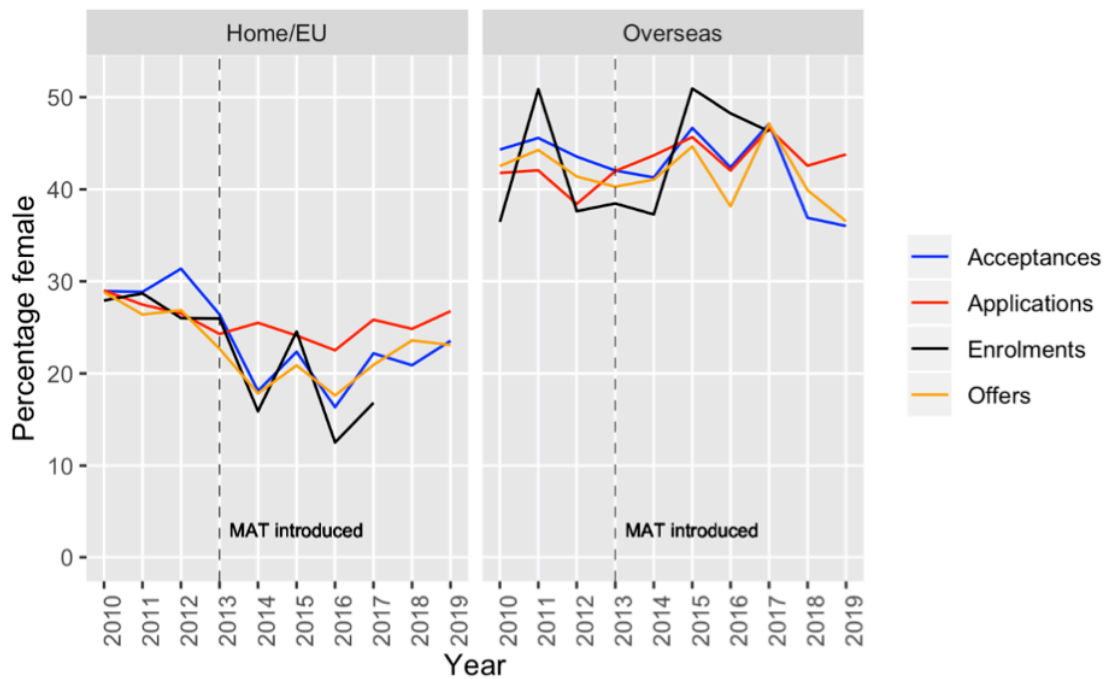


Figure 3: Undergraduate Gender Balance Benchmarked Across Institutions (Heidi Data)

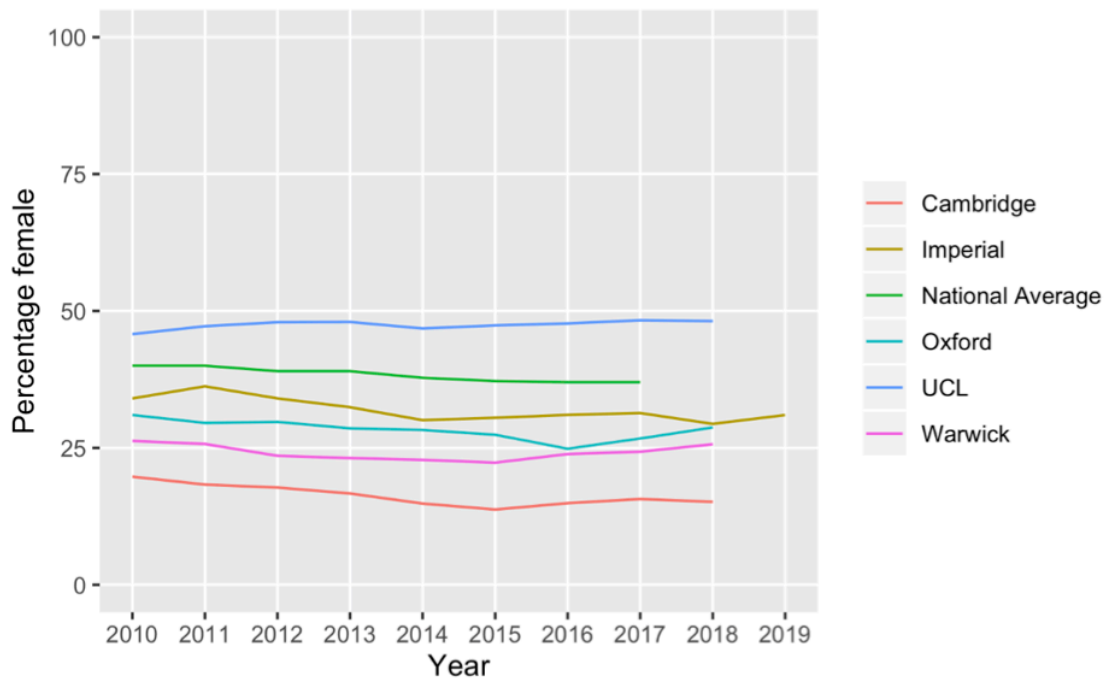


Figure 4: Gender Balance on our BSc (3 year) and MSci (4 year) Undergraduate Programs

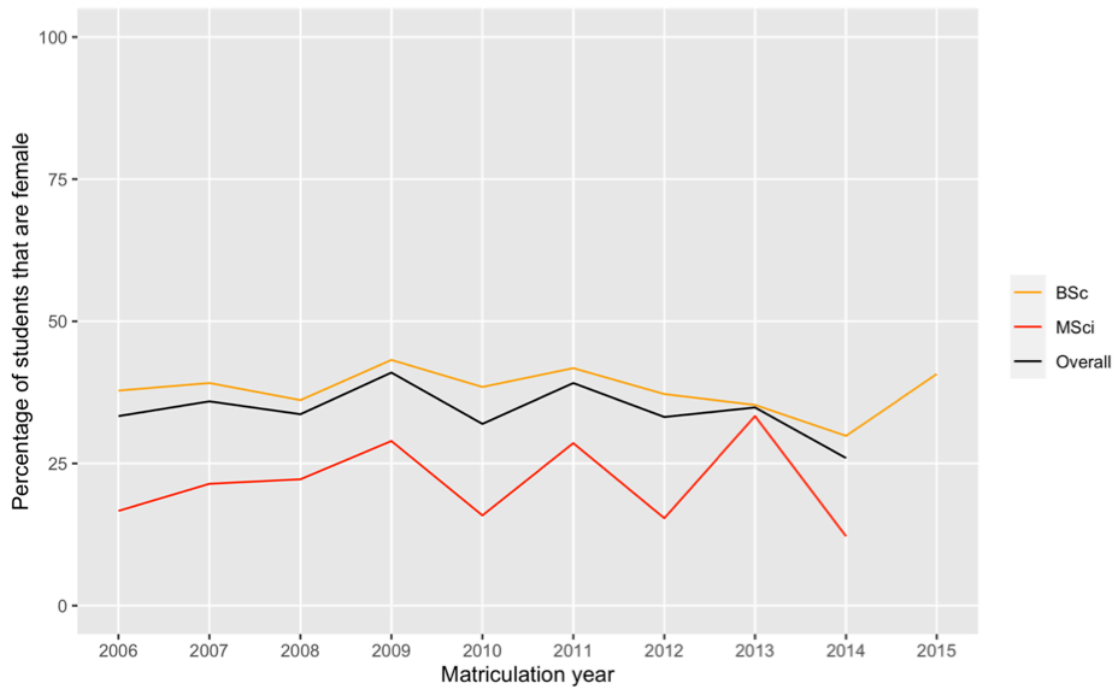


Table 5: Gender Balance on our BSc (3 year) and MSci (4 year) Undergraduate Programs

Matriculation	BSc		MSci	
	F (%F)	M	F (%F)	M
2006/07	59 (38%)	97	7 (17%)	35
2007/08	74 (39%)	115	9 (21%)	33
2008/09	60 (36%)	106	8 (22%)	28
2009/10	89 (43%)	117	11 (29%)	27
2010/11	60 (38%)	96	10 (16%)	53
2011/12	71 (42%)	99	12 (29%)	30
2012/13	64 (37%)	108	6 (15%)	33
2013/14	54 (35%)	99	15 (33%)	30
2014/15	43 (30%)	101	5 (12%)	36
2015/16	55 (41%)	80		

Figure 5: Gender-Resolved Undergraduate Degree Outcomes (years 2009-2018, aggregated)

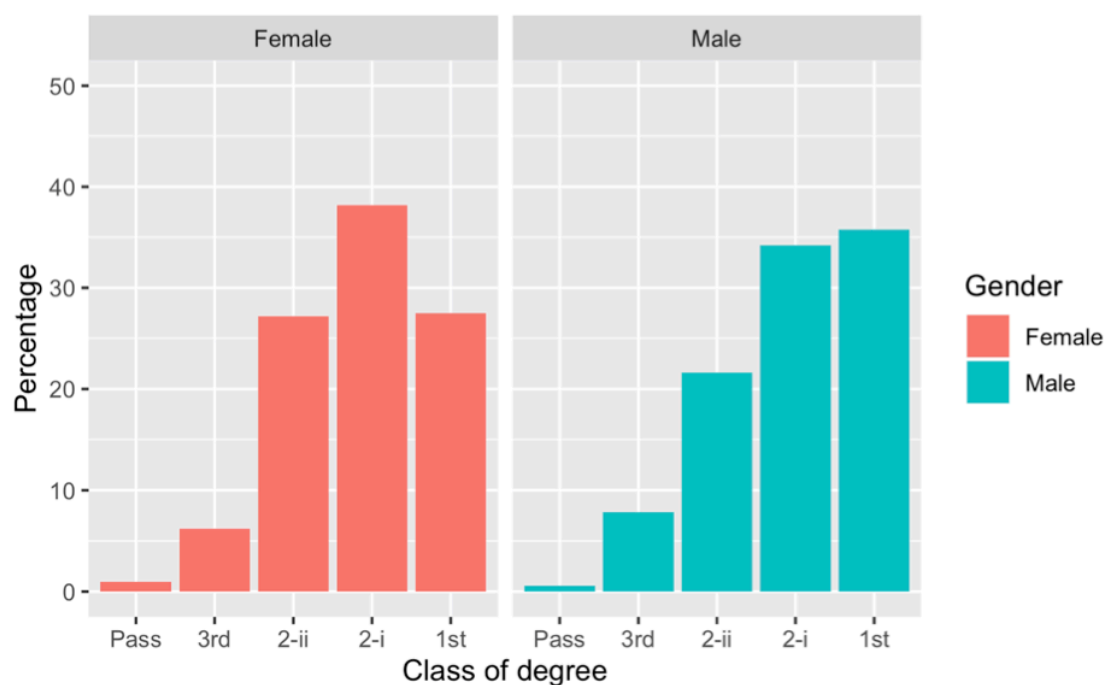


Table 6: Gender-Resolved Undergraduate Degree Outcomes

Year	Degree	BSc		Msci	
		F	M	F	M
2008/2009	First Class Honours	10	21	4	27
	Upper Second	22	31	5	9
	Lower Second	25	30	0	6
	Third Class Honours	2	13	0	0
	Pass	0	2	0	0
2009/2010	First Class Honours	11	18	4	21
	Upper Second	25	45	3	12
	Lower Second	30	34	0	2
	Third Class Honours	6	17	0	0
	Pass	2	1	0	0
2010/2011	First Class Honours	6	32	3	21
	Upper Second	24	32	6	11
	Lower Second	27	34	0	1
	Third Class Honours	1	5	0	0
	Pass	2	3	0	0
2011/2012	First Class Honours	30	34	7	23
	Upper Second	32	44	1	5
	Lower Second	18	30	0	0
	Third Class Honours	7	9	0	0
	Pass	2	0	0	0
2012/2013	First Class Honours	18	28	6	25
	Upper Second	15	41	4	2
	Lower Second	22	22	1	0
	Third Class Honours	5	5	0	0
	Pass	2	0	0	0
2013/2014	First Class Honours	22	45	8	33
	Upper Second	32	28	2	20
	Lower Second	12	18	0	0
	Third Class Honours	5	8	0	0
	Pass	2	0	0	0
2014/2015	First Class Honours	23	53	6	22
	Upper Second	27	29	6	8
	Lower Second	7	18	0	0
	Third Class Honours	7	8	0	0
	Pass	2	0	0	0
2015/2016	First Class Honours	17	46	5	25
	Upper Second	26	38	1	7
	Lower Second	8	11	0	1
	Third Class Honours	3	4	0	0
	Pass	2	0	0	0
2016/2017	First Class Honours	16	46	12	20
	Upper Second	18	38	3	10
	Lower Second	9	12	0	0
	Third Class Honours	0	5	0	0
	Pass	2	0	0	0
2017/2018	First Class Honours	20	41	3	25
	Upper Second	19	22	2	10
	Lower Second	13	11	0	1
	Third Class Honours	3	6	0	0
	Pass	2	0	0	0

Approximately 31% of our undergraduate students are female. This proportion has remained roughly constant over the past decade, and is substantially below the national average for Mathematics degrees (37%; Heidi data).

Figure 3 compares our performance with the national average and with several other institutions that require similar A-level grades for admission; we see that Oxford, Cambridge, and Warwick have similar problems, but that UCL does much better (around 48% female).

The gender balance in our undergraduate admissions was a key focus of our Bronze process: we made a number of changes to Open Days, outreach, and admissions procedures, based on best practice shared by UCL and other Departments in College. For example, we introduced London Girls Maths outreach events³, as well as hosting teachers conferences and providing female keynote speakers for them. We changed our admissions process, starting to contextualise applicants' results on the Mathematics Admissions Test (MAT) by their school. All staff involved in UG admissions have had unconscious bias training. As Figure 1 and Table 4 indicate, these changes have been ineffective. But many of the new procedures are good things to be doing (for example, contextualising the MAT scores by school increased the socio-economic diversity of our offer pool), and it is possible that some positive effects may only become visible over a longer timeframe (for example, from our outreach efforts to maths teachers).

From our Silver Self-Assessment process, we believe that we now understand why our previous actions have had little impact. We gained important insights from focus groups with female undergraduates conducted in collaboration with UCL and Warwick, which allowed us to learn from students who chose not to apply to Imperial. Key context here is that, in 2013, we moved from making offers on the basis of predicted grades and qualitative analysis of UCAS form to using an admissions test, the MAT⁴, that the students take in November. (Note, in the Home/EU graph in Figure 2, that the offer rate to female applicants drops below the application rate at precisely the point where the MAT is introduced.) There is a pronounced gender skew in MAT results among our Home applicants, but not among Overseas or EU applicants, and we believe that this skew is getting worse over time. The focus group feedback, as well as discussions with colleagues at other institutions who use the MAT, suggest that this reflects different levels of support and exam preparation provided by schools: male Home candidates receive significantly more preparation and encouragement⁵. Note that if this is true then we should expect that, on average, a female student with a given MAT score will be stronger than a male student with the same MAT score.

Starting this year we will change our approach to admissions. We will use MAT scores to divide applicants into bands, admitting the top band, rejecting the bottom band, and using a more holistic analysis of grades, predicted grades, and UCAS form in the borderline band. If our hypothesis is correct, this should increase the number of female applicants to whom we make an offer. Our Action Plan contains several new steps to address our undergraduate

³ Held in March 2018 and March 2019; the 2020 event was cancelled due to the coronavirus pandemic.

⁴ The MAT is also used by the Universities of Oxford and Warwick as part of their admission process.

⁵ Indeed, a number of our female undergraduates were actively discouraged from taking the MAT.

gender balance, including this change to our approach to admissions. The new actions are based on analysis of our Bronze program, discussions with other Departments and institutions, and the focus group feedback discussed above. There are two key areas we need to work on, both of which are visible in Table 4. We need to increase the proportion of our applicants who are female, and we need to increase the proportion of female applicants who receive offers. We should expect the proportion of offer-holders who are women (currently 30%) to be the same as the proportion of applicants who are women (currently 37%); there is a persistent gap here, particularly among Home/EU students (see Figure 2).

Summary Points from Action 4 - Improve the Gender Balance in our UG Applicant Pool

Hold Open Days that emphasise the diversity of students in our Department (3 per year) Launch a Work Experience programme, targeting year 12 students in low income families, with gender-balanced intake Provide speakers for at least two teacher conferences per year Increased target marketing, including promotional videos
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Summary Points from Action 5 - Improve the Gender Balance in our UG Offer Pool

Change approach to admissions, using the MAT admissions test as a banding tool only Develop, support, and publicise women-only preparation for the MAT test
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Summary Points from Action 6 - Increase the Proportions of Female UG Candidates Who Accept our Offers

Hold Offer-Holder Open Days that emphasise the diversity of students in our Department Phone calls to offer-holders by current Mathematics undergraduates, where possible with the same gender and cultural background Adjust raised offers from A*-A*-A* to A*-A*-A-A, as suggested by undergraduate focus groups
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Completion rates are high, and trending upwards over time (Figure 6 and Table 7). They are slightly lower for male students, which is consistent with the hypothesis that we are under-admitting women. There is a clear attainment gap between male and female students on our undergraduate program (Figure 5 and Table 6): male students are significantly more likely to achieve First class degrees, and female students are slightly more likely to achieve Upper Seconds. More precisely, the distribution of degree outcomes for male students has a higher mean but greater variability. Preliminary analysis by the EDI Committee suggests that the achievement gap is real, that it persists over time (Figure 5 aggregates data for the past ten years, but Table 6 shows that the pattern is similar from year to year), and that it is affected by a number of other factors (including Overseas versus non-Overseas fee status, Statistics versus non-Statistics degree program, and educational background) that are correlated with gender.

Summary Points from Action 8 - Understand and Mitigate the Gap in UG Degree Outcomes

Determine the underlying causes of the achievement gap, through statistical analysis and focus groups
 Collaborate with the Department of Physics, who have done a lot of work to tackle their own achievement gap as part of their application for an Athena SWAN Gold award
 Mitigate the achievement gap, by setting appropriate quantitative targets and designing policies to achieve them.
 Implement these policies.

Figure 6: Gender-Resolved Failure/Withdrawal Rate for Undergraduate Students

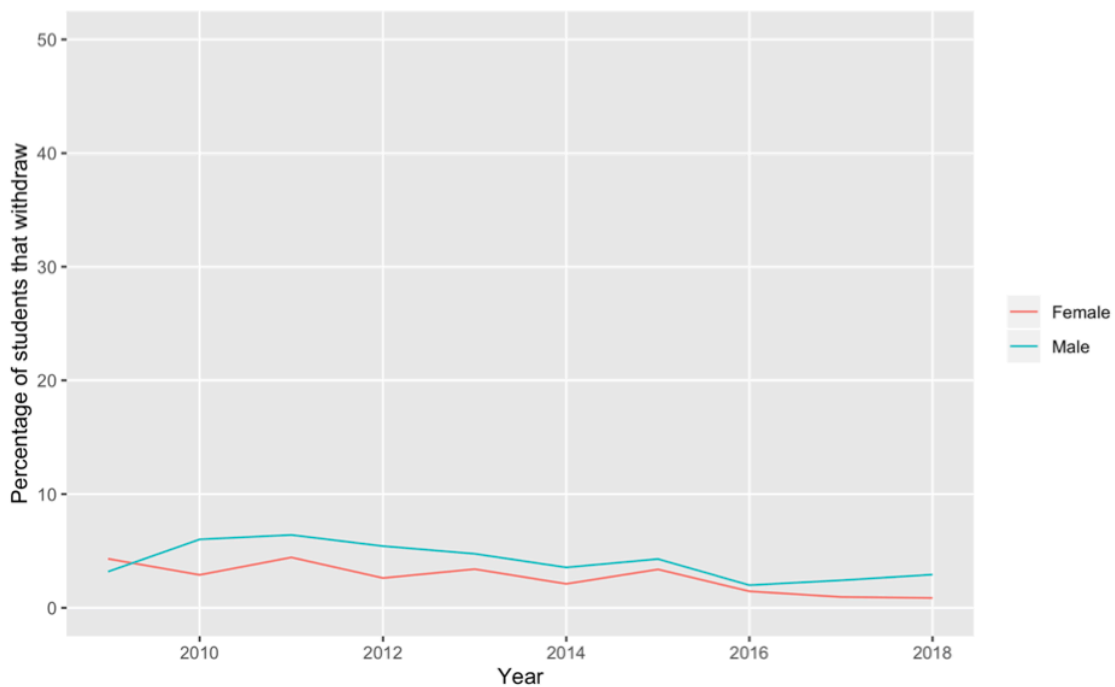


Table 7: Gender-Resolved Failure/Withdrawal Rate for Undergraduate Students

Year	Withdrawals		Total UG Students	
	F	M	F	M
2008/2009	11	16	255	503
2009/2010	8	31	276	515
2010/2011	11	33	248	515
2011/2012	7	26	267	479
2012/2013	8	22	235	463
2013/2014	5	17	237	478
2014/2015	7	20	207	466
2015/2016	3	9	206	451
2016/2017	2	11	209	454
2017/2018	2	14	229	479

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

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

Our Department offers four PGT MSc courses: Applied Mathematics, Mathematical Finance, Pure Mathematics, and Statistics. Over the past decade the numbers of PGT students and applicants have grown significantly. This is in large part due to the creation and rapid expansion of the Statistics MSc. Since 2012-13, our percentage of female students enrolled in PGT taught maths courses has been roughly in line with the national average (Heidi data: see Figure 7) showing a clear improvement over prior years.

No bespoke PGT courses for part time students are offered, and part time students have historically made up a very small fraction of our PGT students (2% over the past 10 years). The past five years has shown a clear improvement in the completion rate of students (Figure 8); improving this, via enhanced pastoral support and tighter admission standards, was a key point in our Bronze Action Plan, in response to the alarming spike in PGT withdrawals in 2014.

Several PGT cohort-building activities have been introduced and/or enhanced over the past five years. These include social events (e.g. Welcome Party, Christmas parties, and Leavers parties), social breakfasts, and career events.

The gender balance for the Statistics MSc has been excellent, with the percentage of enrolled female students regularly exceeding the national average (Table 9 and Figure 7). Nonetheless, for PGT courses as a whole we are consistently making offers to female candidates at a lower rate than male applicants (Table 8). Comparing Table 9 and Table 10 reveals that this is largely a result of admissions to the Mathematical Finance MSc.

Summary Points from Actions 2, 3, 9 and 11 - Improve Gender Balance in PGT Programs

Launch scholarship to encourage female UG students to continue to MSci / MSc study
Revise PGT marketing, highlighting Departmental diversity and our commitment to EDI
Ensure admissions procedures for the Mathematical Finance MSc are free from gender bias
Mandatory Unconscious Bias training for all staff

Table 8: Gender Balance At Each Stage of the PGT Admissions Process

Year	Applications		Offers		Acceptances	
	F (%F)	M	F (%F)	M	F (%F)	M
2011/12	330 (38%)	535	69 (29%)	168	27 (28%)	71
2012/13	389 (37%)	656	86 (31%)	190	32 (31%)	70
2013/14	432 (38%)	702	218 (49%)	225	38 (30%)	89
2014/15	493 (40%)	736	118 (36%)	210	44 (32%)	94
2015/16	618 (43%)	816	125 (34%)	246	53 (36%)	94
2016/17	832 (44%)	1051	131 (35%)	241	68 (42%)	95
2017/18	868 (42%)	1188	132 (35%)	248	50 (32%)	104
2018/19	946 (42%)	1307	133 (36%)	239	62 (36%)	108

Table 9: Number of Male and Female PGT Students by Program

Year	Applied			Pure			Math Finance			Statistics		
	F	M	Tot.	F	M	Tot.	F	M	Tot.	F	M	Tot.
2009	9 (32% F)	19	28	2 (10% F)	18	20	15 (38% F)	24	39			
2010	10 (38% F)	16	26	3 (25% F)	9	12	9 (18% F)	40	49			
2011	11 (28% F)	28	39	6 (43% F)	8	14	9 (21% F)	33	42			
2012	5 (19% F)	22	27	1 (7% F)	13	14	19 (40% F)	28	47	7 (37% F)	12	19
2013	7 (23% F)	24	31	3 (18% F)	14	17	13 (36% F)	23	36	15 (44% F)	19	34
2014	4 (17% F)	20	24	3 (17% F)	15	18	12 (22% F)	42	54	24 (50% F)	24	48
2015	6 (19% F)	26	32	4 (20% F)	16	20	17 (33% F)	34	51	23 (56% F)	18	41
2016	10 (27% F)	27	37	10 (43% F)	13	23	23 (45% F)	28	51	25 (45% F)	31	56
2017	10 (33% F)	20	30	11 (41% F)	16	27	10 (23% F)	34	44	18 (37% F)	31	49
2018	8 (25% F)	24	32	7 (22% F)	25	32	19 (37% F)	32	51	26 (51% F)	25	51

Table 10: Number of Male and Female PGT Applicants by Program

Year	Applied			Pure			Math. Finance			Statistics		
	F (%F)	M	Tot.	F (%F)	M	Tot.	F (%F)	M	Tot.	F (%F)	M	Tot.
2008	42 (40%)	62	104	29 (42%)	40	69	137 (38%)	221	358			
2009	62 (37%)	104	166	39 (37%)	66	105	143 (35%)	264	407			
2010	61 (36%)	108	169	43 (42%)	60	103	169 (34%)	322	491			
2011	59 (35%)	110	169	44 (35%)	83	127	221 (41%)	315	536			
2012	46 (29%)	110	156	17 (21%)	65	82	232 (42%)	316	548	82 (39%)	129	211
2013	43 (32%)	90	133	26 (26%)	74	100	208 (42%)	291	499	143 (41%)	204	347
2014	40 (24%)	126	166	23 (21%)	84	107	210 (41%)	298	508	202 (52%)	187	389
2015	68 (33%)	135	203	44 (35%)	80	124	262 (44%)	334	596	237 (50%)	233	470
2016	89 (34%)	170	259	32 (27%)	85	117	381 (46%)	441	822	313 (51%)	302	615
2017	111 (36%)	198	309	54 (31%)	123	177	350 (43%)	460	810	341 (48%)	374	715
2018	87 (29%)	218	305	42 (25%)	129	171	298 (43%)	389	687	511 (49%)	539	1050

Figure 7: PGT Gender Balance Benchmarked Against the National Average (Heidi Data)

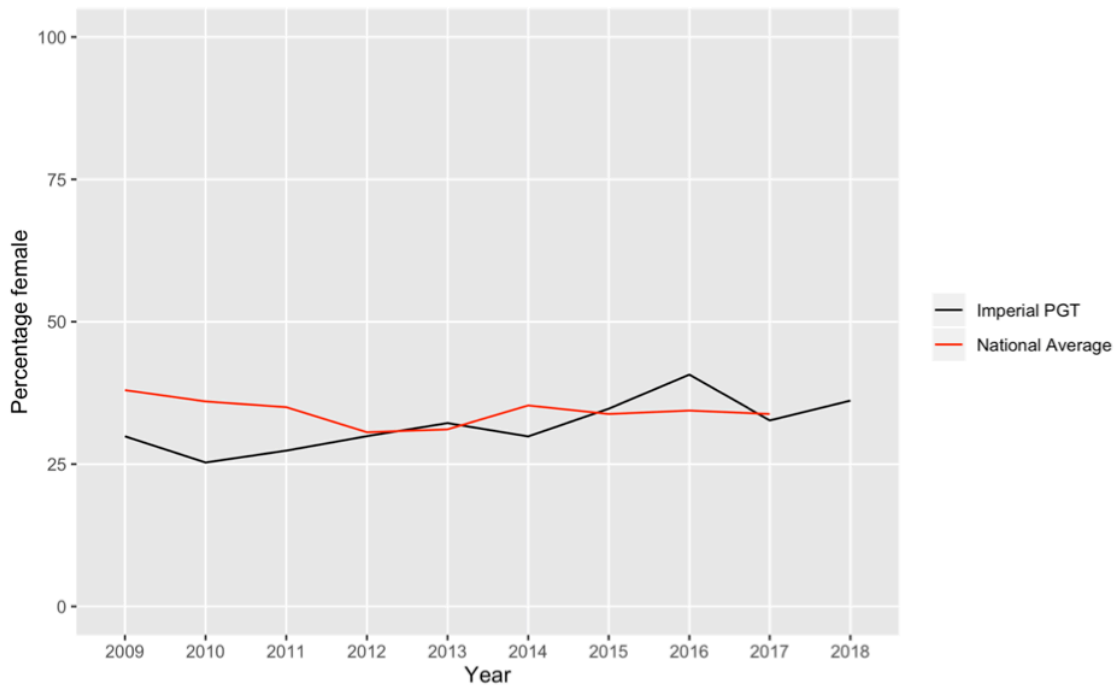
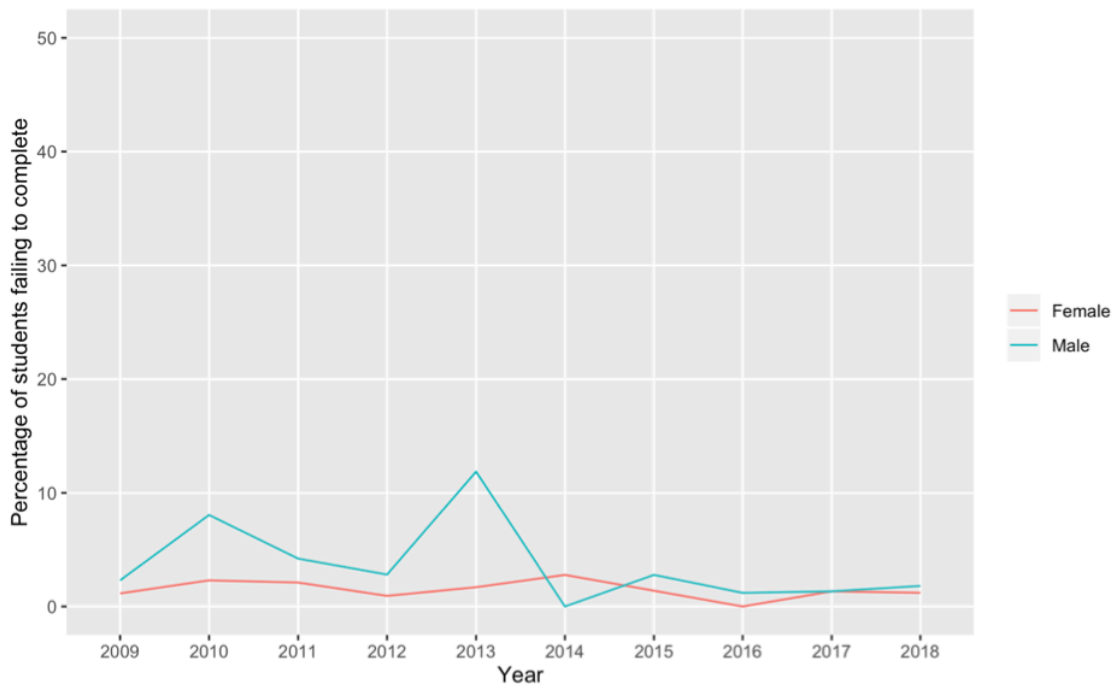


Figure 8: Gender-Resolved Failure/Withdrawal Rate for PGT Students



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

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

The proportion of PGR students who are female has been appreciably below the national average since 2009 (Figure 11), and there has been no noticeable improvement over this time period, remaining at approximately 20%. There have been major changes in the funding and structure of PGR courses since 2014: the majority of our PGR studentships are now funded through Centres for Doctoral Training (CDTs), and many of these CDTs are held jointly with other Departments at Imperial or with other Universities. Each CDT has explicit EDI goals, and is required to report progress against these goals to their funders. As Table 13 shows many of the CDTs are making encouraging progress. The switch to the CDT funding model makes analysis of PGR admissions data for the period 2014 onwards challenging: since the CDTs are shared with other Departments and institutions, students often apply to one institution initially and then transfer to another institution for years 2-4 of their program (by making a formal application at the end of year 1, which is automatically accepted). Thus Table 12, which summarises PGR admissions, should be interpreted with care: in particular the dip in the number of women applying in 2017-18 is mostly due to how CDT admissions and transfers are recorded.

More detailed analysis of our PGR population shows that, over the past five years, a large and increasing proportion of our female PGR students have EU fee status (in 2018-19: 33%), whereas the numbers of home, EU, and overseas students are more balanced for males. Risks related to Brexit are therefore particularly high here. Overseas students represent a slightly higher proportion of the female PGR total than the male PGR total, but the difference is less pronounced than at undergraduate level. PGR completion rates are high, with no evidence of gender skew (Table 14).

In summer 2019 we launched the Mary Lister McCammon⁶ Fellowship, a summer research programme for female undergraduates in the summer before the final year of a (standalone or integrated) Masters. Fellows undertake a 10-week research project with an academic supervisor, supported by a programme of team-building and communications training events and a generous bursary. There were 14 Fellows in the first cohort. The programme has several goals: to motivate talented female undergraduates to go on to PGR study; to increase their chances of gaining admission to a PGR program; to increase the number of women who apply for PGR study at Imperial; to build a reputation as a Department that values and supports female mathematicians; and, in the long term, to build a network of former Fellows that will help us to improve the gender balance in our postdoctoral and academic recruitment. It is too soon to assess the impact of the programme in terms of destinations (at the point of this Athena submission), but qualitative feedback from the first cohort was extremely positive: see Table 11. Only positive feedback is presented there because all feedback was positive.

⁶ Mary Lister McCammon was the first woman to graduate with a PhD in Mathematics from Imperial. She went on to a long and successful career as a Professor at Penn State University.

Figure 9: The 2019 Mary Lister McCammon Fellows



Table 11: Feedback from the 2019 Mary Lister McCammon Fellows

Every participant was moderately or extremely likely to recommend the programme to others. All but one were extremely likely.

“My experience has been fantastic! I found that my topic and the level of maths was just right. My supervisor guided me through the project - and the level of his guidance was just right.”

“I had two supervisors and I feel this had a massive impact on my enjoyment and productivity in the course as having very regular contact with a post doc felt very reassuring. I also had good contact with my supervisors PhD group, feeling included in the group and I have others to rely on for support. In general though, I think both my supervisors were lovely people, constantly saying its important for myself not to stress and also enjoy London. This support during such a significant project did a lot to make this summer enjoyable.”

Summary Points from Actions 1, 3 and 10 - Improve Gender Balance in PGR Programs

Summer research Fellowship scheme for female undergraduates in the summer before they would apply for PGR programs

Share best practices around shortlisting and interviewing between CDTs

Mandatory Unconscious Bias training for all staff

Table 12: Gender Balance at Each Stage of the PGR Admissions Process

Year	Applications		Offers		Acceptances	
	F (%F)	M	F (%F)	M	F (%F)	M
2009-10	52 (24%)	166	19 (27%)	52	10 (24%)	32
2010-11	51 (24%)	165	16 (30%)	38	5 (17%)	25
2011-12	53 (21%)	200	11 (17%)	53	8 (19%)	35
2012-13	54 (20%)	216	13 (20%)	52	11 (22%)	39
2013-14	62 (18%)	288	11 (19%)	48	8 (20%)	33
2014-15	58 (21%)	218	11 (17%)	55	11 (19%)	47
2015-16	60 (20%)	243	19 (21%)	73	17 (21%)	63
2016-17	59 (22%)	208	22 (23%)	75	19 (22%)	66
2017-18	45 (17%)	219	11 (13%)	74	10 (15%)	57
2018-19	67 (23%)	229	15 (21%)	57	15 (22%)	53

Data for the highlighted period should be interpreted with care: see above.

Table 13: Gender Balance in PGR Admissions for our Centres for Doctoral Training

Year	Geometry & Number Theory			Statistics & Machine Learning			Fluids			Mathematics of Planet Earth				
	Applications F (%F)	M	Admissions F (%F)	M	Admissions F (%F)	M	Applications F (%F)	M	Admissions F (%F)	M	Applications F (%F)	M	Admissions F (%F)	M
2014	28 (18%)	130	2 (13%)	14			13 (12%)	100	4 (40%)	6	37 (23%)	121	0 (0%)	12
2015	31 (19%)	130	5 (31%)	11			17 (14%)	103	1 (11%)	8	31 (21%)	117	8 (50%)	8
2016	30 (32%)	65	4 (24%)	13			23 (16%)	117	4 (31%)	9	37 (34%)	72	5 (31%)	11
2017	30 (17%)	148	3 (18%)	14			14 (12%)	106	0 (0%)	10	41 (34%)	79	4 (22%)	14
2018	28 (14%)	170	3 (15%)	17			14 (12%)	99	4 (31%)	9	40 (30%)	93	6 (35%)	11
2019	27 (17%)	117	6 (50%)	6	27 (12%)	198	3 (21%)	11						

Year	Random Systems			Financial Computing and Analytics			
	Applications F (%F)	M	Admissions F (%F)	M	Applications F (%F)	Admissions F (%F)	M
2014					2 (14%)	12	12
2015					3 (21%)	11	11
2016					3 (19%)	13	13
2017					3 (19%)	13	13
2018					1 (7%)	13	13
2019	3 (6%)	45	1 (13%)	7			

The admissions process for the Financial Computing and Analytics CDT was managed by our partner institution (not Imperial) and did not record application data by gender. No new students have joined since 2018, and no further students will join since the CDT was not renewed.

Figure 10: Total Number of Male and Female PGR Students

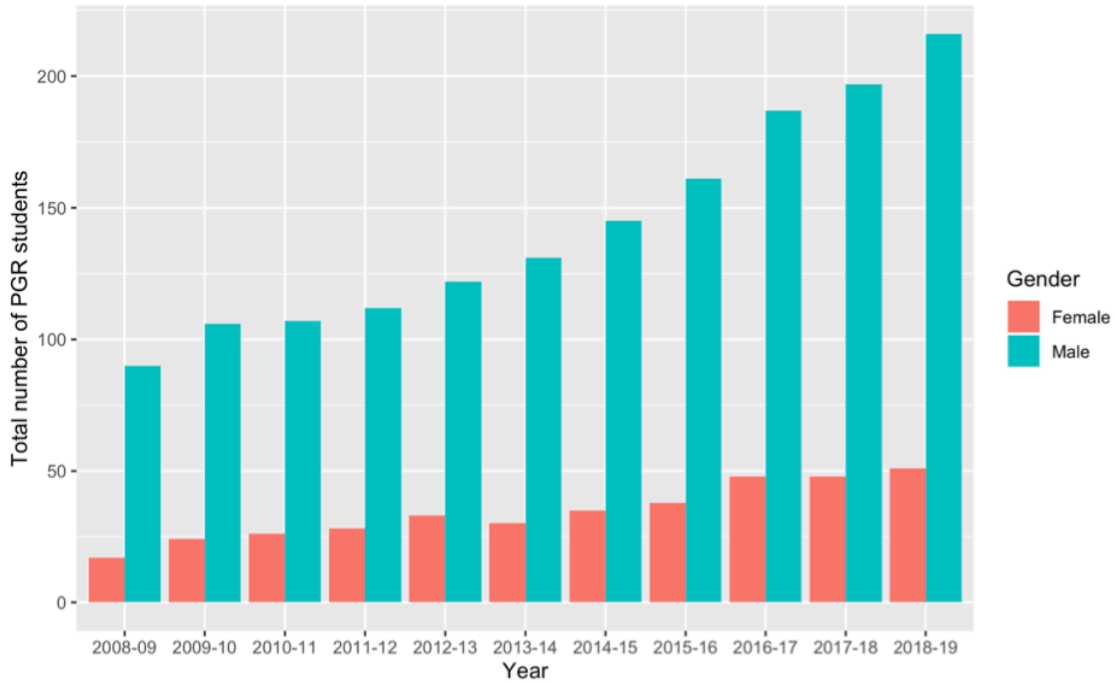


Figure 11: PGR Gender Balance Benchmarked Against the National Average (Heidi Data)

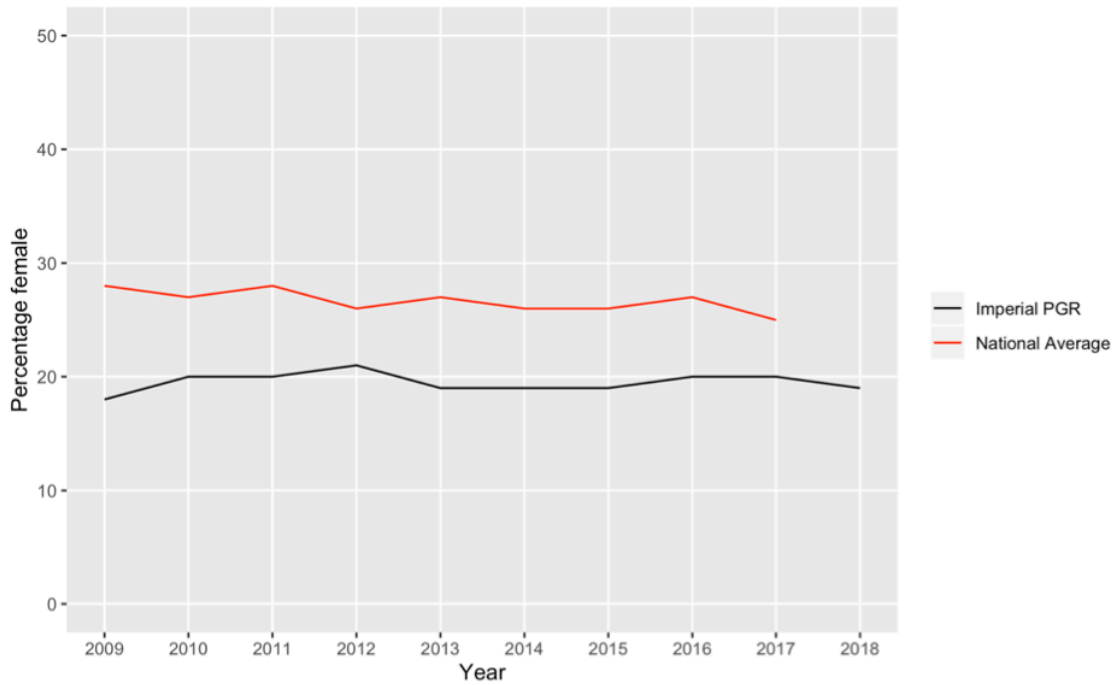


Table 14: Gender-Resolved PGR Degree Outcomes and Completion Rates

Starting year	Completed within 4 years		Completed 4+ years		Ongoing		Failed/Discontinued		Completed within 4 years		Completed 4+ years		Ongoing		Failed/Discontinued	
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
2007-08	4	17		1				2		100%	85%	0%	5%	0%	0%	0%
2008-09	6	21		3			1	3		86%	78%	0%	11%	0%	0%	14%
2009-10	7	19	1	8			2	3		70%	63%	10%	27%	0%	0%	20%
2010-11	4	21		2		1		3		100%	78%	0%	7%	0%	4%	0%
2011-12	4	23	3	3		1		1		57%	82%	43%	11%	0%	4%	4%
2012-13	10	23		12		1			1	91%	64%	0%	33%	0%	3%	0%
2013-14	5	19	3	6		1		3		63%	66%	38%	21%	0%	3%	0%
2014-15	6	21	1	3		5		2		86%	68%	14%	10%	0%	16%	0%

(v) Progression pipeline between undergraduate and postgraduate student levels

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

It is unusual for Mathematics undergraduates at Imperial to continue to postgraduate study at Imperial. (For example, in 2018, only 7 of 59 incoming PGR students came from our MSci program.) But many of our undergraduates go on to postgraduate study elsewhere, and a key step is their choice between the 3-year BSc or 4-year MSci undergraduate degree. Here we have a major problem. Students can choose to switch from the BSc to the MSci at any point provided that they have at least a 2.1, but the fraction of female undergraduates choosing the MSci degree is much lower than the fraction of female undergraduate who get 2.1s (see Figure 5 and Figure 12).

Our Action Plan includes the launch of the Marjorie McDermott Scholarship⁷, a £1000/year scholarship for high-performing female undergraduates in years 2 and 3 which increases to £7500/yr if the recipient stays on for the fourth year of the MSci or MSc program. This scheme recognises and celebrates our strongest female students, and provides a significant incentive to continue to fourth-year studies.

Informal discussions with the Women in Maths undergraduate society suggested that a primary concern at this point in the leaky pipeline is the perceived difficulty of making a career in mathematical fields. To tackle this, since 2017 we have held a fortnightly Women in Maths speaker programme, led by students for students, with alumnae and academic speakers; we also actively promote London-wide and national events in mathematics targeting women. We also arranged Active Bystander workshops for students (voluntary participation) to try to target unwanted behaviours and comments affecting female and other minority students.

Summary Points from Actions 2, 3 and 13 - Progression Pipeline

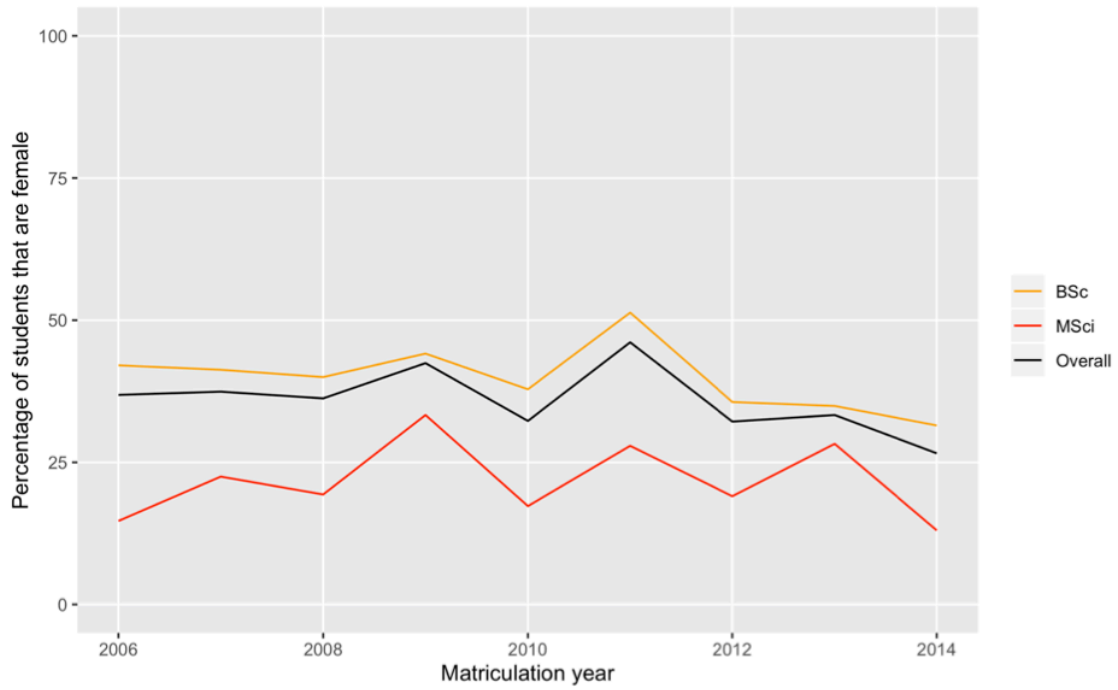
Launch scholarship scheme that incentivizes our strongest female UG students to continue to MSci or MSc study

Expand programs that provide role models for women considering key transitions
Improve the gender balance on our undergraduate summer research programs (UROP)

Mandatory Active Bystander training for all staff

⁷ This scholarship was made possible by a generous legacy gift from Marjorie McDermott, an alumna of the Department. She graduated with a BSc in Mathematics in 1951 and then completed a DIC (MSc) in 1952. The Department also makes an annual contribution of £22,000 to fund the scholarships.

Figure 12: Gender Balance on our BSc and MSci Undergraduate Degrees



Word count for Section 5.1 A picture of the department. Student data: **2017 words**
Aggregate word count for application: **3888 words**

5.2 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.

Table 15: Staff Pipeline for Academic Staff

Year	Lecturer		Senior Lecturer		Reader		Professor		Total	
	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M
2010	2 (13%)	14	3 (33%)	6	0 (0%)	14	0 (0%)	31	5 (7%)	65
2011	3 (14%)	18	3 (27%)	8	0 (0%)	12	0 (0%)	33	6 (8%)	71
2012	3 (14%)	18	2 (18%)	9	1 (7%)	13	0 (0%)	33	6 (8%)	73
2013	1 (7%)	14	2 (15%)	11	1 (10%)	9	0 (0%)	37	4 (5%)	71
2014	0 (0%)	14	0 (0%)	10	3 (23%)	10	1 (3%)	39	4 (5%)	73
2015	0 (0%)	10	0 (0%)	11	3 (23%)	10	1 (2%)	42	4 (5%)	73
2016	1 (10%)	9	0 (0%)	12	3 (21%)	11	1 (2%)	43	5 (6%)	75
2017	1 (8%)	11	1 (8%)	12	2 (14%)	12	2 (4%)	45	6 (7%)	80
2018	1 (7%)	13	1 (8%)	11	1 (8%)	12	3 (6%)	44	6 (7%)	80

The proportion of academic staff who are women has remained roughly constant over the period shown, and is substantially lower than the UK average (18%; Heidi data). Note that the number of female Professors in the Department has increased steadily since 2014, but is still well below the UK average (12%; Heidi data for 2017).

There are three components to the problem here: recruitment, retention, and progression. For recruitment, over the past eighteen months we have revamped our procedures, building on long-standing basic practice (see Section 6.1.(i) on page 43). In the most recent recruitment round we hired two more female Lecturers, and two female Senior Lecturers joined the Department from Imperial's School of Public Health; this will bring the total proportion of academic staff who are female to 11%. Furthermore all three Chapman Fellowship committees (these are our flagship post-doc positions) chose female candidates.

For progression, we have also overhauled our promotion procedures: see Section 6.1.(iii) on page 49. We hope that these changes, which feedback from the Staff Survey suggests have been well received, will also help with retention. Over the past few years a number of female academics have left Imperial to take up Professorships elsewhere; whilst we should (and do) celebrate this, in several cases it is likely that had our promotion procedures been in their current form, we would have retained these staff.

Table 16: Research Staff Grades at Imperial College

Research – Level A	For researchers without a PhD only
Research – Level B	The vast majority of postdoctoral researchers are employed at this level
Research – Level C	Rarely used: only for very senior postdocs

Table 17: Staff Pipeline for Research Staff

Year	Level A		Level B		Level C		Level D		Total	
	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M
2010	0 (0%)	3	4 (14%)	25	0 (0%)	2	0 (0%)	0	4 (12%)	30
2011	1 (17%)	5	5 (19%)	22	0 (0%)	2	0 (0%)	0	6 (17%)	29
2012	0 (0%)	4	13 (25%)	38	0 (0%)	1	0 (0%)	0	13 (23%)	43
2013	0 (0%)	6	17 (27%)	45	0 (0%)	3	0 (0%)	0	17 (24%)	54
2014	0 (0%)	6	18 (25%)	55	0 (0%)	2	0 (0%)	0	18 (22%)	63
2015	0 (0%)	8	17 (24%)	54	2 (33%)	4	0 (0%)	1	19 (22%)	67
2016	1 (8%)	12	16 (26%)	46	2 (40%)	3	0 (0%)	0	19 (24%)	61
2017	1 (8%)	12	17 (22%)	59	1 (33%)	2	1 (100%)	0	20 (22%)	73
2018	2 (11%)	17	13 (21%)	49	1 (33%)	2	0 (0%)	0	16 (19%)	68

Our gender balance for research staff is much better than for academic staff. The proportion of research staff who are women increased sharply in the period 2010-2012, coincident with the changes made as part of our Bronze process, where it was a major focus. It is now in line with the UK average (23%; Heidi data for 2017). We hope that the recent dip here is random fluctuation, and will continue to monitor this. We expect the mandatory unconscious bias training for all staff to help with gender balance among research staff, as recruitment here is generally managed by individual grant-holders, with less Department-level control, and the opportunity for unconscious bias is greater.

Table 18: Learning and Teaching Staff Grades at Imperial College

Learning and Teaching – Level 3b	Learning Technologist Teaching Fellow
Learning and Teaching – Level 4	Senior Learning Technologist Senior Teaching Fellow
Learning and Teaching – Level 5	Principal Learning Technologist Principal Teaching Fellow
Learning and Teaching – Level 6	Rarely used: only for very senior teaching staff

Table 19: Staff Pipeline for Learning and Teaching Staff

Year	Level 3b		Level 4		Level 5		Level 6		Total	
	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M	F (%F)	M
2010	0 (0%)	1	0 (0%)	0	0 (0%)	0	0 (0%)	0	0 (0%)	1
2011	1 (50%)	1	0 (0%)	0	0 (0%)	1	0 (0%)	0	1 (33%)	2
2012	0 (0%)	5	0 (0%)	0	0 (0%)	1	0 (0%)	0	0 (0%)	6
2013	0 (0%)	7	0 (0%)	2	1 (17%)	5	0 (0%)	0	1 (7%)	14
2014	2 (25%)	6	0 (25%)	1	1 (20%)	4	0 (0%)	1	3 (20%)	12
2015	2 (33%)	4	0 (17%)	2	1 (20%)	4	0 (0%)	1	3 (21%)	11
2016	1 (20%)	4	0 (10%)	2	1 (33%)	2	0 (0%)	1	2 (18%)	9
2017	3 (60%)	2	0 (30%)	2	1 (33%)	2	0 (0%)	0	4 (40%)	6
2018	4 (57%)	3	0 (19%)	3	1 (33%)	2	0 (0%)	0	5 (38%)	8

The number of Teaching Fellows in the Department has increased greatly since 2012. The proportion of teaching staff who are women (38%) exceeds the UK average (33%; Heidi data 2017). Note that, since the overall number of teaching staff is small, small year-to-year changes in numbers can lead to wide fluctuations in the proportion of female staff.

Summary Points from Actions 3, 16, and 17 - Recruitment and Career Pipeline

Assess progress and effectiveness of recent changes to recruitment processes
Mandatory Unconscious Bias training for all staff
All job adverts to be checked for gendered language using an on-line tool

Table 20: Full and Part-Time Staff, 2010-2018

Total Academic Staff	Women on Part-time	Women on Full-time	% of Women on Part-time	Men on Part-time	Men on Full-time	% of Men on Part-time
2010		5	0%	2	63	3%
2011	1	5	17%	5	66	7%
2012	1	5	17%	7	66	10%
2013		4	0%	2	69	3%
2014		4	0%	3	70	4%
2015		4	0%	3	70	4%
2016		5	0%	3	72	4%
2017		6	0%	3	77	4%
2018		6	0%	1	79	1%

Total Research Staff	Women on Part-time	Women on Full-time	% of Women on Part-time	Men on Part-time	Men on Full-time	% of Men on Part-time
2010		4	0%	1	29	3%
2011		6	0%		29	0%
2012		13	0%		43	0%
2013	1	16	6%	1	53	2%
2014	2	16	11%		63	0%
2015	1	18	5%		67	0%
2016		19	0%		61	0%
2017	1	19	5%	1	72	1%
2018	3	13	19%	2	66	3%

Total Learning & Teaching	Women on Part-time	Women on Full-time	% of Women on Part-time	Men on Part-time	Men on Full-time	% of Men on Part-time
2010					1	0%
2011		1	0%		2	0%
2012					6	0%
2013	1		100%	6	8	43%
2014	2	1	67%	5	7	42%
2015	2	1	67%	5	6	45%
2016	1	1	50%	3	6	33%
2017	1	3	25%	1	5	17%
2018	1	4	20%	1	7	13%

Total Professional Services	Women on Part-time	Women on Full-time	% of Women on Part-time	Men on Part-time	Men on Full-time	% of Men on Part-time
2010	1	7	13%		5	0%
2011	3	7	30%		4	0%
2012	1	10	9%		4	0%
2013	1	9	10%		5	0%
2014	1	10	9%		5	0%
2015	3	11	21%		5	0%
2016	2	14	13%		5	0%
2017	2	12	14%		7	0%
2018	1	12	8%		9	0%

SILVER APPLICATIONS ONLY

Where relevant, comment on the transition of technical staff to academic roles.

The transition of technical staff to academic roles is very rare at Imperial. There have been no such transitions in Mathematics in the past decade.

(ii) Academic staff by grade on fixed-term, open-ended/permanent and zero-hour contracts by 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.

The vast majority of academic staff, and all female academic staff, are on open-ended contracts (see Table 21). The exceptions are typically senior academic staff who have decided to continue an association with Imperial following retirement: these appointments are usually 0.2% FTE for a fixed term of two years.

Table 22 and Table 23 show the same data for research staff and teaching staff. Essentially all research staff are postdocs on fixed-term funding. Most Teaching Fellows are employed on fixed-term contracts to cover the teaching of staff on Fellowships (including the Elsie Widdowson Fellowship for academic staff returning from parental leave). Note, though, that staff are automatically moved from fixed-term to open-ended contracts after four years continuous employment, so Table 22 and Table 23 should be interpreted with care. There are no gender issues regarding the distribution of open-ended and fixed-term contracts by grade. No staff are on zero-hours contracts.

Year	Women on Fixed-term Contracts	Women on Open-ended Contracts	% Women on Open-ended Contracts	Men on Fixed-term Contracts	Men on Open-ended Contracts	% Men on Open-ended Contracts
2010		5	100%	4	61	94%
2011	1	5	83%	6	65	92%
2012	1	5	83%	8	65	89%
2013		4	100%	1	70	99%
2014		4	100%	2	71	97%
2015		4	100%	2	71	97%
2016		5	100%	3	72	96%
2017		6	100%	2	78	98%
2018		6	100%	1	79	99%

Table 21: Academic Staff on Fixed-Term and Open-Ended Contracts

Table 22: Research Staff on Fixed-Term and Open-Ended Contracts

Year	Women on Fixed-term Contracts	Women on Open-ended Contracts	% Women on Open-ended Contracts	Men on Fixed-term Contracts	Men on Open-ended Contracts	% Men on Open-ended Contracts
2010	4		0%	28	2	7%
2011	5	1	17%	28	1	3%
2012	12	1	8%	41	2	5%
2013	16	1	6%	51	3	6%
2014	17	1	6%	60	3	5%
2015	16	3	16%	62	5	7%
2016	14	5	26%	58	3	5%
2017	15	5	25%	71	2	3%
2018	14	2	13%	65	3	4%

Table 23: Learning and Teaching Staff on Fixed-Term and Open-Ended Contracts

Year	Women on Fixed-term Contracts	Women on Open-ended Contracts	% Women on Open-ended Contracts	Men on Fixed-term Contracts	Men on Open-ended Contracts	% Men on Open-ended Contracts
2010				1		0%
2011	1		0%	1	1	50%
2012				4	2	33%
2013	1		0%	12	2	14%
2014	3		0%	10	2	17%
2015	3		0%	9	2	18%
2016	2		0%	6	3	33%
2017	2	2	50%	2	4	67%
2018	3	2	40%	3	5	63%

(iii) 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.

Retention rates among academic staff are high. Over the period 2009-2018, one female member of academic staff retired and four female academic staff resigned (in each case to take up a promotion elsewhere); this represents a turnover rate of 11% per year. Over the same period 9 male academic staff retired, 2 male academic staff died in service, and 29 resigned or left the College for other reasons; this represents a turnover rate of 6% per year. Informal discussions with leavers suggest that a major factor driving academic staff turnover is the high cost of living in London. We believe that if there is a gender skew among leavers (the numbers are too small to be sure) then this is likely to have been improved by our revised promotions procedures (see Section 6.1.(iii) on page 49).

Staff turnover is much higher among research staff, who are almost entirely post-doctoral researchers on fixed-term research funding. Over the period 2009-2018, 47 female research staff left the College, with all but 2 of them either resigning to take up another position or coming to the end of their contract; this represents a turnover rate of 36% per year. Over the same period, 191 male research staff left the College, with all but 4 of them either resigning to take up another position or coming to the end of their contract; this represents a turnover rate of 39% per year. The majority of our post-docs go on to academic positions elsewhere; we do not currently record exit destinations.

Turnover is somewhat lower among Learning and Teaching staff, but the numbers of staff are smaller and so trends are hard to detect. Over the period 2009-2018, 2 female Teaching Fellows left the College, both resigning to take up another position elsewhere; this represents a turnover rate of 11% per year. Over the same period, 13 male Teaching Fellows left the College: 1 died in service, 1 retired, 5 came to the end of a fixed-term contract, and 6 resigned to take up positions elsewhere; this represents a turnover rate of 19% per year. We do not currently record exit destinations for Teaching Fellows.

Action 25 - Data Collection

Record exit destinations for postdocs and Teaching Fellows

Word count for Section 4.2 A picture of the department. Academic and research staff data:

931 words

Aggregate word count for application: **4819 words**

6. SUPPORTING AND ADVANCING WOMEN'S CAREERS

Recommended word count: Bronze: 6000 words | Silver: 6500 words

6.1 Key career transition points: academic staff

(i) Recruitment

Break down data by gender and grade for applications to academic posts including 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.

Table 24 shows the number of men and women who applied, were shortlisted for, and were offered academic positions in the Department over the past decade. The gender balance among shortlisted and successful candidates is approximately equal to that among applicants, which suggests that our top priority should be to increase the number of women who apply.

In the last eighteen months, our Head of Department has revised recruitment procedures, to ensure best practice and a focus on attracting female applications. For each academic position there is now a search committee (with responsibility for broadening and diversifying the pool of applicants, by proactively reaching out to possible candidates) and a recruitment committee (with responsibility for selection); these committees have no members in common. This is on top of long-standing basic procedures such as ensuring that all recruitment committees have at least one female member, that all Chairs of recruitment committees have had unconscious bias training, and that all members of recruitment committees have completed College recruitment training. It is too early to assess the effect of the changes, but early results are encouraging. In the most recent recruitment round we hired two more female Lecturers, and two female Senior Lecturers joined the Department from Imperial's School of Public Health. Furthermore, all three Chapman Fellowship committees (these are our flagship post-doc positions) chose female candidates.

Procedures for research staff recruitment are more variable. For Department-wide positions, such as the Chapman Fellowships, the process is as just described. Recruitment for the majority of post-doctoral positions, though, is organised by the PI of the grant that funds the position. (This was an important motivation for our recent mandatory all-staff unconscious bias training.) All members of recruitment panels are obliged to have completed College recruitment training.

Procedures for Teaching Fellow recruitment are also variable. For permanent teaching fellow positions, the Head of Department and other senior academics proactively reach out to potential candidates (for example, those from Lectureship searches) to broaden the applicant pool. But Teaching Fellows often need to be recruited at short notice and for fixed terms (for example, when recruiting Teaching Fellows to cover for staff who have been awarded Fellowships), and there the process is ad hoc. All members of Teaching Fellow

recruitment panels have completed College recruitment training, and all panel chairs have completed unconscious bias training. From this year, all panel members (and all staff) will have completed unconscious bias training.

Table 24: Gender Balance in Recruitment for Academic Staff

Academic Staff Totals	Total Applicants				Shortlisted/Interviewed				Accepted						
	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female
2010	14	43	203	260	17%	0	6	28	34	18%	0	1	5	6	17%
2011	3	10	120	133	8%	0	0	4	4	0%	0	0	3	3	0%
2012	4	22	127	153	14%	0	2	17	19	11%	0	0	4	4	0%
2013	0	7	33	40	18%	0	0	6	6	0%	0	0	3	3	0%
2014	1	8	36	45	18%	0	0	1	1	0%	0	0	1	1	0%
2015	6	32	176	214	15%	1	6	24	31	19%	0	0	5	5	0%
2016	3	8	17	28	29%	0	4	2	6	67%	0	2	0	2	100%
2017	1	2	15	18	11%	0	0	1	1	0%	0	0	1	1	0%
2018	11	31	149	191	16%	0	3	26	29	10%	0	0	6	6	0%
2019	3	7	41	51	14%	1	2	11	14	14%	0	2	6	8	25%
TOTAL	46	170	917	1133	15%	2	23	120	145	16%	0	5	34	39	13%

Table 25: Gender Balance in Recruitment for Research Staff

Research Staff Totals	Total Applicants				Shortlisted/Interviewed				Accepted						
	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female
2010	9	44	198	251	18%	0	2	16	18	11%	0	1	8	9	11%
2011	4	62	235	301	21%	0	6	26	32	19%	0	1	12	13	8%
2012	7	105	449	561	19%	0	11	44	55	20%	0	7	20	27	26%
2013	7	113	394	514	22%	0	9	29	38	24%	0	7	14	21	33%
2014	20	105	436	561	19%	1	2	19	22	9%	0	0	5	5	0%
2015	9	109	451	569	19%	2	10	53	65	15%	0	2	20	22	9%
2016	22	83	404	509	16%	1	6	33	40	15%	0	3	13	16	19%
2017	29	83	447	559	15%	3	7	42	52	13%	0	3	13	16	19%
2018	23	127	520	670	19%	2	12	43	57	21%	2	5	20	27	19%
2019	1	24	44	69	35%	0	1	0	1	100%	0	1	0	1	100%
TOTAL	131	855	3578	4564	19%	9	66	305	380	17%	2	30	125	157	19%

Table 26: Gender Balance in Recruitment for Learning and Teaching Staff

L&T Staff Totals	Total Applicants				Shortlisted/Interviewed				Accepted						
	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female	No data / Did not declare	Female	Male	TOTAL	% Female
2010	8	5	15	28	18%	0	0	0	0		0	0	0	0	
2011	1	12	32	45	27%	0	1	1	2	50%	0	0	0	0	
2012	3	22	82	107	21%	0	4	4	8	50%	0	0	1	1	0%
2013	0	2	7	9	22%	0	0	3	3	0%	0	0	2	2	0%
2014	2	22	59	83	27%	1	3	8	12	25%	0	1	0	1	100%
2015	0	3	9	12	25%	0	1	2	3	33%	0	0	1	1	0%
2016	0	16	38	54	30%	0	0	5	5	0%	0	0	1	1	0%
2017	4	35	68	107	33%	0	4	4	8	50%	0	3	2	5	60%
2018	0	19	26	45	42%	0	1	5	6	17%	0	1	5	6	17%
2019	0	9	12	21	43%	0	0	0	0		0	0	0	0	
TOTAL	18	145	348	511	28%	1	14	32	47	30%	0	5	12	17	29%

(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.

The Department completely overhauled its induction procedure as part of our Bronze process. The Office Manager now oversees induction of all staff, and is also responsible for new staff information packs. New academic staff and research staff are assigned an academic mentor; new academic staff and teaching fellows are assigned a teaching buddy (an experienced lecturer who introduces the new member of staff to the Department's teaching procedures, provides feedback on initial lectures, gives advice and guidance on examinations, and so on). Anonymised feedback from the female interviews and focus groups confirmed that "assignment of both mentors and teaching buddies where applicable were seen as very positive and very helpful, especially in the early days in the department".

Staff survey results (see Table 27) and informal feedback suggests that we strike a reasonable balance between being complete but not overwhelming. This feedback also made clear that the current induction is less well-adapted to Teaching Fellows, so we will add new material specifically for this group. An informal (non-anonymous) survey by the Postdoc Representatives suggests that induction is working well for post-docs; this is the largest group of new arrivals.

Comments on Induction from an Informal Survey of Postdocs

I'd say that the induction went pretty well, the welcome was warm and gentle... I found particularly useful the postdoc handbook. More or less all the questions that you may have are there! [PDRA, arrived September 2019]

Induction has provided me with most important information, e.g. important contacts. In case of other queries I was able to find answers later on by reaching colleagues whom I always found happy to help me. [Chapman Fellow, arrived November 2019]

It provided all the information I needed. But I feel that that is quite a low bar. I really didn't need to know too much to get started working. [PDRA, arrived November 2019]

Summary Points from Actions 14 and 15 – Induction Procedures

New induction material specifically for Teaching Fellows
Ensure that all induction material is available in one on-line location

Table 27: Staff Survey Feedback for Academic and Research Staff, 2017 and 2019

	Year	Negative	Neutral	Positive
"I know what is expected of me in my role"	2017	0%	10%	90%
	2019	1%	9%	90%
"I have access to all the information I need to do my job well"	2017	4%	9%	78%
	2019	10%	10%	79%

(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.

Table 28: Academic Promotions by Type and Gender Since 2013

	Female candidates		Male candidates	
	Approved	Not approved	Approved	Not approved
Professor	2	0	7	0
Reader	4	0	7	0
Senior Lecturer			12	1

Table 28 shows that since the academic year 2013-14 all of the applications for promotion by female academic staff have been successful. These include two cases of double promotion, one from Lecturer to Reader and one from Senior Lecturer to Professor. These anomalies, together with focus group feedback, made improving the robustness and transparency of our promotion procedures a key goal.

The new process, which is described in Table 30, has been in place since 2018. It improves on the previous system by ensuring that all eligible candidates are considered by the Department Promotions Committee, removing the necessity for self-nomination and removing opaque chokepoints. It goes beyond College policy by ensuring careful support for candidates: the Chair of the Promotions Committee, a senior Professor, works closely with each Department-nominated candidate for all levels of promotion, guiding them through the process and helping them to present their application to the central College in the most favourable way. Promotion criteria for academic staff require a balance of research, teaching and administrative roles, outreach, external responsibilities, and “good citizenship”.

The Department Promotions Committee⁸ considers all staff eligible for promotion in detail and makes a recommendation as to whether to nominate them for promotion. This recommendation is then considered by a Committee consisting of the Professors in the Department plus a non-Professorial observer. This larger Committee considers each case of promotion to Professor in detail, and has the capacity to consider other promotion cases too (although typically this does not happen); the Chair of the Promotions Committee puts the candidate’s case. Department-nominated candidates are supported in their application by the Chair of the Promotions Committee, as described above. The final decision on promotions is then made by a College committee that includes the Dean of the Faculty, two Consuls (senior Professors from other Departments), and, for Professorial promotions only, the Associate Provost for Promotions. This committee always contains at least one female

⁸ There is always at least one woman on the Department Promotions Committee.

member. Feedback is given to all unsuccessful candidates, and College reviews its side of the promotions process on a yearly basis. Feedback from the biannual Staff Survey, and anonymised feedback with interviews from female staff, suggests that the revised promotions process is seen as transparent and fair. We will continue to monitor this going forward, through focus groups, the Staff Survey, and by observing outcomes, and will adjust processes as appropriate.

Note that last year three Lecturers (two women and one man) progressed to Senior Lectureships, without being formally promoted, when they applied for an open Senior Lecturer position. These are not included in Table 28. In the case of the two women, they held joint appointments with another Department and we did not control their promotion; they chose this route to gain promotion and 100% mathematics jobs.

Table 29: Staff Survey Results for Academic Staff, 2017 and 2019

	2017	2019
I believe that career progression is fair within Imperial (regardless of ethnic background, age, disability, gender reassignment, marriage or civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation)	66%	76%

Table 30: Outline of the Promotion Process for Academic Staff

Annual PRDP	<ul style="list-style-type: none"> At Personal and Review Development Plan (PRDP) meetings, career development and promotion opportunities are discussed.
Start of promotions process	<ul style="list-style-type: none"> September - all academic staff upload their CVs to a Departmental database.
College briefings	<ul style="list-style-type: none"> October - College briefings for staff to get a general overview of process and ask questions of College Academic Promotions Committee members
Department Promotions Committee	<ul style="list-style-type: none"> All eligible academic staff are considered by a Committee that includes the HoD, Deputy HoD, Heads of Section, a number of other Professors, and a non-Professorial member of academic staff. There is always at least one female member.
Department decision to support	<ul style="list-style-type: none"> Candidates with department support helped to prepare applications Candidates not supported by the department receive feedback from the HoD. Individuals can still make personal applications to the College promotions panel
College deadline	<ul style="list-style-type: none"> December - deadline for initial paperwork
College Promotions Committee	<ul style="list-style-type: none"> January - College Committee starts to review applications January to March - College briefing sessions for all applicants March to May - applicants interviewed by College panels for Reader and Professor level promotions
Outcome	<ul style="list-style-type: none"> May to June - applicants informed of outcomes. Unsuccessful applicants given feedback by HoD August - successful applicants celebrated in College wide notice

A different promotions process applies to Teaching Fellows, who are employed with a primary focus on teaching and education and a reduced emphasis on research. The career progression for this Learning and Teaching career track has recently been overhauled by the College. At Departmental level a separate promotions committee that includes the HoD, deputy HoD, and Director of Undergraduate Studies considers the case for promotion for all eligible staff. (Overall numbers are much smaller than for academic promotions.) This Committee always contains at least one woman, and at least one Teaching Fellow. The Department then forwards its recommendations to a College committee chaired by the Associate Provost for Education, which makes the final decision. Table 31 shows that since 2018, when this promotions route was introduced, all Teaching Fellows that we put forward to the College have been successful in their promotion applications.

Table 31: Teaching Fellow Promotions since 2018

Female candidates		Male candidates	
Approved	Not approved	Approved	Not approved
1	0	2	0

Summary Points from Action 19 – Promotions

Lobby College to broaden the types of research that are considered during Teaching Fellow promotions

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

Provide data on the staff, by gender, 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.

The departmental submission to REF 2021 includes all eligible staff members. For REF impact cases, it is expected that the department will submit a total of 7 cases, of which 2 have very significant contributions from female scientists, including one case led and prepared by Dr Anne Cori. Our submissions to REF 2014 included all eligible female staff members.

Word count for Section 6.1. Key career transition points: academic staff: **1262 words**
 Aggregate word count for application: **6081 words**

6.2 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.

The induction process is provided to all new professional and support staff by the Office Manager, David Whittaker, and the staff member's line manager. This includes:

1. Making new members of staff feel welcome.
2. Providing an introduction to the College - we give each new staff member a building tour and highlight key College and Department information, including: key contacts, the absence management system, mental and physical health first aiders, fire wardens and evacuation procedures, upcoming Departmental and admin team meetings and events. Moreover, the College invites new staff to an Insights day: to learn about Imperial College's history, the present day and its future; to meet both new and existing staff from the College community; and to find out about services and benefits available.
3. Giving an insight into other people's jobs - we introduce new staff to the admin team by visiting colleagues' offices and/or at weekly team catch-up meetings and team social gatherings.
4. Providing essential background information to assist new members of staff with their own work.
5. Clarifying job expectations and initial objectives.
6. Completing a 'Day One Safety Induction'.

The line manager's role is to ensure the induction meets these requirements so that every new member of staff has a strong start in their new role and feels part of their new team as soon as possible.

An informal (non-anonymous) survey of recent starters by the EDI Committee gave only positive feedback, suggesting that induction is working well. Sample response: "Both times I went through the induction process in the Maths Department I received a lot of support from my line manager, the colleagues in my team and the colleague that was in my new role before me. They provided all the information that I needed to start my new role and emotional support to make me feel part of the team."

(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.

There is no 'promotions' process for support staff at Imperial; instead, there are three normal routes for staff to progress in job level and salary:

1. The Annual Pay Relativity and Equal Pay Exercise.

2. Progression resulting from an application for recruitment to a job at a higher job level.
3. Re-grading resulting from a personal or line manager submission to the annual Job Level Review.

The Department publicises the College Job Level Review process well in advance of key deadlines and provides all the documentation and links to guidance on the application process. Staff and line managers are invited to contact the Departmental Operations Manager to seek advice and discuss the Review process. As he is a Job Level Review panel member, he is equipped to guide staff and support managers in making successful applications. Line managers and staff are encouraged to discuss all aspects of jobs including job and career progression in an annual PRDP process.

Table 32: Staff Survey Results for Professional Services Staff, 2017 and 2019

	2017	2019
I believe that career progression is fair within Imperial (regardless of ethnic background, age, disability, gender reassignment, marriage or civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation)	58%	67%

Table 33: Promotion (by Regrading) Applications by Professional Services Staff since 2011

Year	Level Change	Department Supported	Approved	Gender
2011	2a to 2b	Yes	Yes	F
2012	3b to 4	Yes	No	F
2015	2a to 2b	Yes	Yes	F
2016	4 to 5	Yes	Yes	M
2018	3a to 3b	Yes	Yes	F
2019	2b to 3a	Yes	Yes	F
2019	2b to 3a	Yes	TBD	F

Word count for Section 6.2. Key career transition points: professional and support staff: **467 words**

Aggregate word count for application: **6548 words**

6.3 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?

A range of training opportunities is available to all members of academic staff. These are mainly provided at College level, through the Learning and Development Centre (all staff; focused on professional development), Educational Development Unit (all staff; teaching-focused) and the award-winning Postdoc and Fellows Development Centre (PDRAs and Fellows only). Some College-provided courses are not appropriate for mathematics (which is not a lab science, and generally contains only small research groups), so these are supplemented by mathematics-specific training within the Department. Combined, the courses offered cover all the main aspects of academic jobs, including teaching, research supervision, grant applications, personal tutoring and mentoring. The take-up of these programs has been good (see Table 35) with around 100 staff members attending sessions each year. The gender balance among attendees is in line with the gender balance of staff overall (8% female among academic staff and 19% female among research staff; total course attendance from 2013-2018).

Table 34: Excerpts from Summary of Anonymized Feedback from Female Staff

The department was found to be supportive and encouraging of training and development. Training courses were highlighted as a way of making connections with others across the college which would be helpful in academic careers. The teaching workshops were highlighted as being very useful to those new to teaching roles...

The Postdoc and Fellows Development Centre was highlighted as a great training provider. The department had also nominated people for the Academic Leadership Programme which had been found helpful. Central training does need to recognize that mathematics is different – small research groups etc.

At more senior levels, the College's Academic Leadership Programme (ALP) provides academic staff (ranging from lecturers to junior professors) with career support in leadership and management. The programme is designed to cover key leadership themes and their application in the academic context, and was shaped by in-depth discussions with Heads of Department and senior academics across the College about the skills and behaviours of successful leaders in academia. Potential participants are identified by the HoD and encouraged to apply. In the three years since the ALP was rolled out, 7 academics from the Department (6 men and 1 woman) have completed the programme. Staff are informed about training opportunities by direct email from the Learning and Development Centre, and through the weekly Maths Bulletin all-staff email.

Table 35: Take-up of training courses resolved by gender and job family

Year	Academic Staff		Research Staff		Learning and Teaching		Professional Services	
	F	M	F	M	F	M	F	M
2012-13	1	73	9	18	0	0	10	0
2013-14	2	28	4	8	0	0	7	7
2014-15	0	6	5	11	0	5	10	6
2015-16	1	28	12	9	0	11	17	1
2016-17	8	36	6	19	1	2	17	5
2017-18	0	26	11	31	4	4	15	3
2018-19	3	35	9	28	9	16	21	17

(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/review training offered and the uptake of this, as well as staff feedback about the process.

The primary mechanism for staff appraisal and development is the Personal Review and Development Plan (PRDP) and associated meeting. The staff member completes a detailed PRDP form ahead of the meeting, which covers achievements, potential issues, and goals in research, teaching, administration, professional development, and outreach. This is then discussed at the meeting, with the aims and plans for the coming year updated accordingly. Academic staff have their PRDP meeting with their Head of Section or the HoD (in alternating years); post-docs and fellows have their PRDP meeting with their line manager. All staff are expected to do a PRDP annually, and the take-up is high: in the 2019 Staff Survey, 88% of eligible staff reported having a PRDP within the last twelve months. Feedback suggests that the PRDP is often less useful for post-docs than it is for academic staff (2019 Staff Survey: only 53% of post-docs described their PRDP as useful) and PRDP take-up by post-docs is lower too: only 48% reported a PRDP meeting within the last 12 months. The Staff Survey does not break out responses for Teaching Fellows (to preserve anonymity, as numbers are small) so we are unable to provide the analogous data for Teaching Fellows.

While the primary focus of the PRDP process is the reviewee, it has also proved very useful as a direct way for the Department to identify problems affecting significant numbers of staff. For example, this led to the introduction of a Departmental fund to help staff members with childcare costs while attending conferences. (This was introduced in 2019 and promoted to staff via all-staff emails and at the all-staff Department Meeting. Four staff have used the fund so far, for a total expenditure of £1500/year. Example claims: regular small claims for childcare/nanny cover costs whilst entertaining seminar speakers after talks; travel costs for dependents to meetings and conferences; partner travel costs to conferences.)

Summary Points from Action 22 - Appraisals for Postdocs

Ensure that all line managers of PDRAs (post-docs) have PRDP training
Ensure that all line managers of PDRAs are aware of PDRA training opportunities, and discuss these in the PDRA meeting
Encourage PDRAs to take part in PRDP appraisals, via the dedicated PDRA mailing list and by emphasizing this in line manager appraisals

(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.

For academic staff, support for career progression generally starts with the PRDP meeting, or in conversations with either their mentor or teaching buddy assigned during induction. Anonymised feedback from female academic staff suggests that this is working well (Table 36). This is encouraging, as we adjusted our mentorship program during the latter part of our Athena Bronze process (moving from a system where mentors were assigned centrally to one where mentoring is co-ordinated within each Section of the Department), after feedback suggested that our initial approach was both bureaucratic and unhelpful. Informal feedback, together with that from the focus groups, suggests that the new system is more effective.

For postdocs mentoring is more variable, in particular because the mentor assigned is often the PI on the grant that funds the postdoc, who is also the line manager. This is obviously not optimal, and will be improved as we adopt the Postdoc and Fellows Development Centre's PI Expectations framework (see Action Plan 23). There are a range of career support options provided by the PFDC, including careers advice sessions (for both academic and non-academic careers), CV clinics, and mock interviews. These have received excellent feedback.

The Department has two Postdoc Champions, Dr Heather Battey and Dr Martin Rasmussen, early career academics who were themselves post-docs in the Department and who are well-placed to offer advice and support. The Postdoc Champions focus on support for academic careers, running mock interviews for postdocs applying for lectureship positions and providing feedback on research proposals and grant applications. They also attend some of the postdoc networking events, and have partnered with the PDFC to run several half-day workshops in recent years (example topics: fellowship applications, interviews for academic positions).

For Teaching Fellows, support for career progression again generally starts with the PRDP meeting, which takes place with their Head of Section. Teaching Fellows considering promotion are provided with a mentor to guide them through the process.

Table 36: Excerpt from Summary of Anonymized Feedback from Female Academic Staff

The assignment of both mentors and teaching buddies where applicable were seen as very positive and very helpful, especially in the early days in the department. Formal mentoring schemes were valued by the women as it meant they felt they had a right to ask for time and help. There was no consensus on whether the mentor should be in the department or outside. Both schemes had advantages.

(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).

Each undergraduate cohort has one or two talks annually, delivered by the College Careers Advisory Service, tailored to that point in their career search (including support for internship applications). As part of Year 2 projects, careers advisors come in to talk about group work and reflecting on the transferable skills that they will learn and take forward. Since 2019, our annual “out-duction” event for final year students has had talks on getting “Work Ready” (information on workplace etiquette, your first day, HR policies, etc.) and the job application process.

We run an annual Careers Networking event, organised like speed-dating with companies and alumni coming in to describe options and career paths in their industry. The Women In Maths society runs talks featuring alumnae and women from different career paths in STEM. The “For the Love of Maths” research showcase gives insight into academic careers. MathSoc, the undergraduate mathematics society, is sponsored by various companies that arrange careers events. The undergraduate society MathSoc runs regular social and careers events, many featuring alumni or other external speakers. There is also a series of weekly maths talks by undergraduates, the Undergraduate Colloquium; following guidance from the Undergraduate Liaison Officer, this now has a notably better gender balance among the speakers. All these events have a social element, with food provided, and give undergraduate students an opportunity to build professional and support networks. We send regular emails featuring careers events and opportunities, and encourage our students to participate in Faculty-level events such as WE Innovate (a program run by Imperial Business Lab that supports female-led startups) and hackathons.

The Student Chapter of the Society for Industrial and Applied Mathematics (SIAM), which is run by a committee of four PhD students with a faculty advisor, holds a fortnightly seminar series by young researchers for young researchers and PGT students. They also arrange a monthly social event, Aftermath, for cohort building, and one or two conferences each year, with invited speakers from the applied mathematics community and industry. Similar cohort-building activities for PGR students are arranged through the various CDTs.

The College Careers Advisory service, which is available to UG, PGT, and PGR students, offers CV clinics, mock interviews and careers advice, as well as organising Careers Fairs and networking events. Our Centres for Doctoral training offer workshops to PGR students

considering both academic and non-academic careers, which give feedback on CVs and presentations, and mock interviews.

(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.

The Department has a well-organized system of supporting grant applications. This is arranged through the departmental Research Committee, with individual research groups also providing similar feedback and support. There is also good departmental and College-level support with financial calculations, etc., so that this burden does not fall on the research applicant. Anonymized feedback from interviews with female staff highlighted that colleagues and mentors have been very helpful during the grant application process; see also the Case Study for Dr Ana Caraiani in Section 7.

Word count for Section 6.3. Career development: academic staff: **1401 words**
Aggregate word count for application: **7949 words**

6.4 Career development: professional and support 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?

Support staff are encouraged to take up career development training offered internally by the College Learning and Development Centre. In addition to this, the Department routinely pays for members of the administrative team to attend external courses on topics not covered by College training. These have included specialist software, time management, mental health, and database development training, from a variety of external providers. There is a dedicated mailing list for the admin team to which internal and external learning and development opportunities available are circulated, in addition to the weekly Maths Update bulletin to all staff. The latter promotes available training courses provided by the College Learning and Development Centre to all staff. Training opportunities targeted at support staff are also sent directly to individuals, as suitable.

Feedback from the biannual Staff Survey and anonymized, aggregated feedback from interviews with female professional services staff indicate that staff are happy with their opportunities for training and professional development.

Table 37: Excerpt from Summary of Anonymized Feedback from Professional Services Staff

“Universally the department was found to be very supportive of training both in-house from Imperial or funding external training if needed. The flexibility in terms of funding and time given to training was greatly appreciated. The department has a culture of encouraging professional development. ... Staff in the department are also willing to help those who want to develop new skills and there is a certain amount of peer to peer training which has been very willingly given.”

Table 38: Staff Survey Feedback from Professional Services Staff, 2019

	Negative	Neutral	Positive
I am satisfied with the learning and development I receive for my present job	7.7%	23.1%	69.2%

(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/review training offered and the uptake of this, as well as staff feedback about the process.

As for academic staff (see page 56) the primary mechanism for appraisal and development review for professional services staff is the annual Personal Review and Development Plan (PRDP) meeting. This is an important starting point for conversations about training, development, and career progression. The PRDP meeting is typically held with the staff member’s line manager, but staff also have the option to choose another senior member of staff.

Table 39: Staff Survey Feedback from Professional Services Staff, 2019

	Negative	Neutral	Positive
The PRDP with my line manager is useful	0%	42%	58%
My line manager takes the PRDP process seriously	0%	58%	42%
I have had a PRDP meeting in the last twelve months	56%	0%	44%

Summary Points from Action 20 - Appraisals for Professional Services Staff

Ensure that all line managers of professional services staff have PRDP (appraisal) training

Encourage staff take-up of PRDP meetings, via the dedicated staff email list and through line manager appraisals.

(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.

One challenge for career progression for professional services staff is that, given the relatively small number of roles in the Department, progression often involves moving to other Departments within College, or externally. The management team are aware of this and supportive of such moves; there is also a strong tradition of supporting career progression within the Department through regrading, and of taking advantage of any turnover to provide progression opportunities for staff already in the Department. A number of staff have returned to the Department in more senior roles after moving out of the Department temporarily in order to progress in their careers. Feedback summarised in Table 40 shows that the Department is perceived as a supportive place to work; this feedback also makes clear that we should introduce a formal mentoring scheme for professional services staff, which is Action Plan 21.

Table 40: Excerpts from Summary of Anonymized Feedback from Female Professional Services Staff

“Respondents were asked what they felt was the most helpful thing the department had done for their careers. Being given freedom within a professional services role to mould and develop the role was highlighted by several people. If this is coupled with a supportive member of the department who can be approached with queries then this was found to be very helpful. Managers belief in their staff and a willingness to highlight roles they would be suitable for was also highlighted. The latter moved women forward when they had not thought of applying themselves.”

“Mentoring within the professional services seems more ad hoc than in the academic job family. Some women had formed informal mentoring arrangements within the department and from meeting people on trainings across the college. Given that career progression routes largely point to outside the department then the availability of mentors from across the college could be considered. Some women reported not wanting to seek out and approach their own mentors but if given a formal structure then they felt they could ask for time and help from that person.”

Word count for Section 6.4. Career development: professional and support staff: **367 words**
Aggregate word count for application: **8316 words**

6.5 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 Department recognises that the transition to parenthood can be both challenging and stressful. Staff are offered three voluntary workshops which look at both the practical and emotional aspects of parenthood (specifically: 1. Preparing for Maternity Leave, 2. Working Parents, 3. New Fathers/Partners). The aim is to support new parents to develop in their careers, through effective planning and communication.

The Department's procedure prior to maternity leave follows the College guidance and consists of the following steps:

1. The member of staff notifies her manager that she is pregnant.
2. The line manager carries out a risk assessment with advice from the Safety Department.
3. The member of staff forwards her MAT B1 form to HR as soon as possible.
4. HR confirms receipt of the MAT B1 form and arranges a maternity meeting with the pregnant member of staff to discuss maternity leave and pay.
5. The line manager discusses a plan for keeping in touch with the member of staff.
6. HR notifies payroll and pension teams of the maternity leave plan.
7. The staff member commences maternity leave.

The procedure for adoption leave has analogous steps, although to date this has not been needed. Maternity and adoption leave arrangements are made by the staff member's line manager. The Departmental Operations Manager then meets with both parties to ensure that suitable plans are in place.

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

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

When professional services staff go on leave the Department generally recruits temporary cover for the position, allowing time for handovers before and after the period of leave. When academic staff go on leave their teaching duties are covered, typically by one of the Teaching Fellows or by a post-doctoral researcher (who thus gains valuable lecturing experience). Staff on parental leave and adoption leave are offered paid 'Keeping in Touch' (KIT) and 'Shared Parental Leave in Touch' (SPLIT) days, which they are encouraged to use to keep in contact with their team or research group, or for training and career development activities.

(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 College-wide Elsie Widdowson Fellowship scheme offers academic staff returning from parental leave a reduced teaching and administration load for 12 months following their return. This is available to all academic staff who took at least 16 weeks parental leave, and can be shared in the case where the parental leave is shared. Over the past five years, the Department has supported 4 female and 4 male academics in applying for the Fellowship. In anonymised feedback from interviews with female staff, several staff described the Elsie Widdowson Fellowship as the most important thing that the Department had done to support their career.

Imperial pays for maternity leave for research staff from central funds. Going beyond the College-wide policy, the Department uses this to extend the staff member's contract by the length of the maternity leave taken. Drawing on the Department's cohort of Teaching Fellows allows us to reallocate the teaching and administrative responsibilities from those on maternity leave or Elsie Widdowson Fellowships without excessively burdening any members of the Department.

The Department offers a range of support for staff returning from maternity or adoption leave, including: flexible working; extending the handover cover so that accrued annual leave does not impact on the day-to-day workload; and adjusting expectations for duties accordingly. A number of staff make use of the Imperial College Early Years Education Centre, an excellent, cost-subsidised on-campus nursery. The Department's approach has encouraged a critical mass of people with caring responsibilities. Anonymized interview feedback suggests that "advice from colleagues was extremely helpful and supportive", and that the College coffee mornings for new parents were an excellent resource.

(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.

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

During the period 2007-2018, there were 17 instances of maternity leave by academic and research staff (and none by Learning and Teaching staff); in 15 of the 17 cases the staff member returned to work at the end of maternity leave. One member of academic staff and one member of research staff chose not to return, in each case because of a change in personal circumstances. All returning academic staff remained in post for at least twelve months following their return, with one leaving less than eighteen months following their return (to take up a promotion elsewhere) and the other two remaining in post after eighteen months. 7 of the 10 returning research staff remained in post for at least eighteen months following their return, with the others in each case leaving because their contract came to its scheduled end.

During the same period (2007-2018) there were 5 instances of maternity leave by professional services staff. All staff members returned to work at the end of their leave, and all remained in post for at least eighteen months following their return.

(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.

Members of academic staff often take up to two weeks of ordinary paternity leave without formally notifying the Department (when, for example, this does not affect teaching responsibilities). We have encouraged colleagues to give formal notice of paternity leave, and since 2007 there have been 25 instances of this: 24 for academic and research staff and 1 for professional services staff. Since the introduction of Shared Parental Leave in 2015 there have been 13 instances of leave, taken by 6 people: 5 men and 1 woman, all of whom were academic or research staff.

(vi) Flexible working

Provide information on the flexible working arrangements available.

Flexible working can be requested informally or formally in line with the College's Flexible Working Policy. In practice all members of the Department can (and do) easily make informal arrangements to work flexibly. Aside from Departmental meetings and teaching commitments, staff members are free to set their own schedules, and the Department has a longstanding tradition of flexibility in the timetabling of teaching to allow for caring responsibilities. In the 2019 Staff Survey 100% of professional services staff, 98% of academic staff, and 91% of research staff said that 'as long as they get the work done, they are trusted to organise their workload in a way that suits them.' Anonymous feedback from female staff members also indicates that the culture of flexible working in the Department is strong, and that this is one of the best things about working here.

(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.

This transition is rare, so is handled in an ad hoc way. Informal feedback from the staff involved suggests that it was handled sensitively and appropriately.

Word count for Section 5.5. Flexible working and managing career breaks: **1038 words**
Aggregate word count for application: **9354 words**

6.6 Organisation and culture

(i) 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.

The Department is perceived as a friendly and supportive place to work. In the 2019 Staff Survey, staff responses were very positive, especially regarding their colleagues and work within the Department (Table 42). Table 41 shows comments on gender equality and Department culture taken from aggregated, anonymized interviews with female staff; it contains only positive descriptions because no negative or neutral descriptions were given. Feedback was particularly positive about support for caregivers (both parents and elder caregivers), and about the visibility and collegiality of the management team. The Department was universally felt to be on an upward trajectory.

Socially: there is a weekly Departmental tea, with free tea, coffee and pastries, held in the common room. This is well-attended by both staff and PhD students. Many research groups also have tea/coffee/pastries together (provided by the Department) after seminars, and there are a number of cross-Department social events and parties.

Administratively: the EDI Committee contains representatives from all sections and from all job families. The Chair of the EDI Committee is automatically a member of the Department Management Committee, and there is a dedicated slot in the bimonthly all-Department meeting for reporting on EDI activities. The impact of the Department's approach is seen in the anonymised feedback from women that the Department is seen as genuine and creating opportunities to address gender issues. Gender equality and transparency are key priorities of the Department management team (see the HoD's letter on page 2). All of these things will continue.

Table 41: Excerpt from Summary of Anonymized Feedback from Female Staff

Everyone agreed that women are treated equally in the department and that the culture is friendly, supportive and flexible. Everyone was aware that it is a very male dominated department but felt their experience of the culture was the same as that as their male colleagues. Many people highlighted the department's desire to address gender balance issues is genuine and much has been done in recent years to create opportunities for this to happen. Several people noted that the culture had changed for the better as more women had entered the department.

Table 42: Staff Survey Feedback, 2019

		Negative	Neutral	Positive
"I have good working relationships with the colleagues I work with"	Professional Services	8%	8%	83%
	Research Staff	0%	6%	94%
	Academic Staff	2%	4%	93%
"I would recommend Imperial as a good organisation to work for "	Professional Services	8%	0%	92%
	Research Staff	6%	22%	72%
	Academic Staff	13%	9%	78%

(ii) 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 Operations Manager monitors compliance with College policies regarding recruitment, and ensures that new policies are circulated to all staff with the relevant responsibilities. Department policies (particularly those related to EDI) are summarised on a single webpage accessible to Department staff. Neither the biannual Staff Survey nor our recent anonymised focus groups and interviews with female members of staff revealed any differences between policies and practice here.

Table 43: Staff Survey Feedback, All Staff, 2019

	Yes	No	Prefer not to say
"During the last 24 months have you personally experienced harassment and/or bullying at Imperial? "	4%	90%	6%
"Have you experienced any form of sexual harassment at work in the last 24 months? "	0%	100%	0%

(iii) 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 level of female representation on committees is around 20%, well above the percentage of female academic staff (7%). The level of female representation has remained essentially constant over the last few years. In order not to overburden the small number of female academic staff with administrative responsibilities, much of the female representation on committees is through Department members (such as the Undergraduate Liaison Officer) who are not academic staff, or where appropriate through PGR/PGT students or research staff. Female academic staff members are represented only on the Committees marked with an asterisk below; note, though, that these are the most important Committees.

Table 44: Gender Balance on Department Committees (With 2016 Data in Parentheses)

Committee	Number of men	Number of women
EDI Committee	9 (4)	8* (5*)
Common Room Committee	6 (4)	4 (3)
Computing Committee	4 (6)	0 (0)
Health and Safety Committee	11 (10)	3 (2)
Infrastructure Committee	3 (3)	1 (1)
Management Committee	14 (11)	1* (2*)
Research Committee	6 (5)	2* (3*)
Teaching Committee	9 (16)	3 (3*)
PGR Committee	4 (8)	1 (0)
PGT Committee	4 (6)	2* (1)
Staff/Student Advisory Committee	19 (9)	11 (3*)
Academic Promotions Committee	9 (9)	1* (1*)
Learning and Teaching Promotions Committee	5 (N/A)	2 (N/A)

Many members of these committees are ex officio and others are selected by the HoD or the management team often with specific diversity requirements (including gender, job title/rank, students, area of mathematics, etc.). Membership of the Management Committee, for example, is completely ex officio, and the Director of the Quantitative Sciences Research Institute (QSRI) was added to the Management Committee in 2017 specifically to address gender diversity. Seven of the nine members of the Academic Promotions Committee are ex officio. The other two are selected by the HoD specifically to ensure there is a woman and a pre-professorial member on the committee.

Although the Department would like to achieve better gender (and other) diversity on its committees, this aim must be weighed against the pressure it puts on female staff, especially female academic staff, to join such committees. Thus, we generally encourage women to take on such commitments only if they will be personally rewarding or serve a particular purpose in terms of their career or professional goals. Although they may not sit on committees, the academic women in the Department do hold a variety of leadership roles in College and Department. Among the eight women academic staff are a vice Dean, the Director of the QSRI, the Director of a highly-successful MSc programme, two staff members that help manage EPSRC-funded CDTs, and three that hold prestigious five-year research fellowships that are meant to largely shield them from administrative responsibilities.

(iv) Participation on 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?

Senior members of the Department, both men and women, hold and have held significant external roles. These include:

- Dr Heather Battey, Prof. Axel Gandy, Prof. Guy Nason: Royal Statistical Society Research Section;
- Dr Almut Veraart, EPSRC Strategic Advisory Team for Mathematics;
- Prof. Richard Craster, Council member, Institute of Mathematics and its Applications
- Prof. Martin Hairer, Prof. Guy Nason: REF 2021 Mathematics subpanel;
- Prof. Martin Hairer, Chair of the 2022 International Congress of Mathematicians Programme Committee;
- Prof. David Hand: Royal Society / British Academy Data Governance Working Group, Alan Turing Institute midterm review.
- Prof. Ari Laptev: Director of the Mittag—Leffler institute, European Mathematical Society Prize Committee, IMU Women in Mathematics Committee;
- Prof. Emma McCoy: Council of the Royal Statistical Society, Royal Society Advisory Committee on Mathematics Education, Royal Society Dynamics of Data Science steering group;
- Prof. Guy Nason: Vice-President, Royal Statistical Society;
- Prof. David van Dyk: Board of the American Statistical Association, EPSRC Mathematical Sciences Advisory Board.

The Department strongly encourages staff to take on positions on influence outside of the Department. The HoD discusses opportunities with staff in terms of career advancement, enhancement of professional profile, and workload. Significant roles are accounted for in the workload model, for example by reducing teaching or tutorial responsibilities. As these external committees often aim for diversity, senior women in Mathematics may face pressure to join and we encourage them to take on such commitments only if they will be personally rewarding or serve a particular purpose in terms of their career or professional goals.

(v) 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.

Workload is allocated⁹ by a Deputy Head of Department in conjunction with Heads of Section. A typical load for a member of academic staff is two 30-hour lecture courses per year, pastoral responsibility for one group of undergraduate tutees, supervision of 3-4 masters or undergraduate projects, and a certain amount of exam marking. This is adjusted according to a number of factors. For example, student projects with external (industrial) partners require fewer staff hours and therefore carry a 50% tariff, and larger supervision duties are accounted for by reducing the size of the tutee groups. Further reductions are made to reflect other circumstances, such as:

- Being a new member of the Department;
- Outreach or other external responsibilities;
- Teaching/administrative buyout from research grants and Fellowships;
- Major departmental roles, such as Postgraduate Tutor or Director of Undergraduate Studies;
- Other administrative responsibilities, such as internal or external committee memberships;
- EDI responsibilities, particularly in the run-up to Athena SWAN applications.

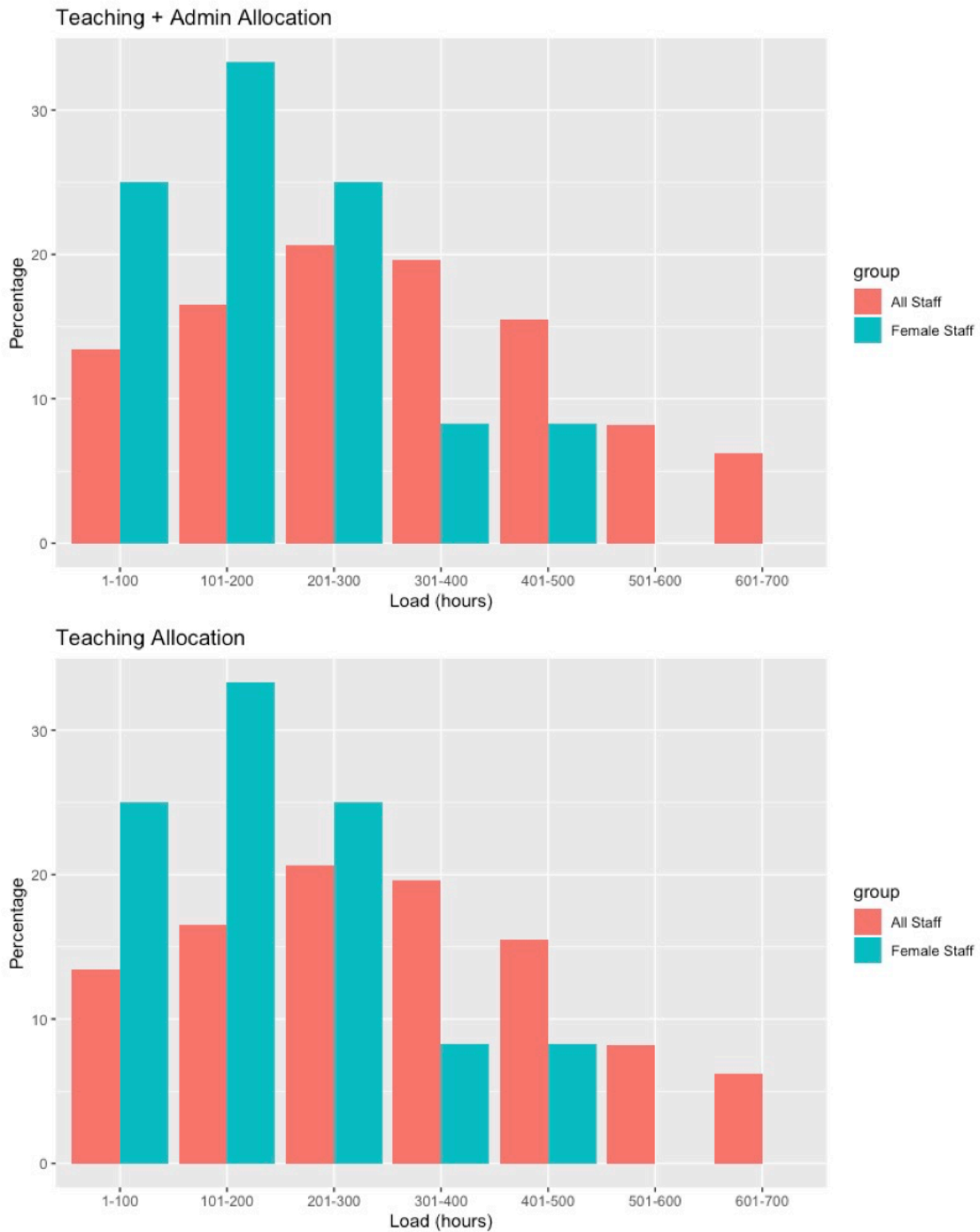
The HoD discusses workload with each member of staff in annual PRDPs and makes adjustments to assignments where appropriate. For further monitoring, the Department tabulates teaching and administrative workload for all academic staff and computes a total numerical tariff. The results vary in proportion to research output (especially externally funded research) and do not appear to show gender bias: see Figure 13.

Staff overload is endemic in UK academia, and in this context our workload distribution seems to be acceptable: in the 2019 Staff Survey 70% of academic staff and 79% of research staff were satisfied with their workload. Anonymized feedback from staff interviews suggests that for Teaching Fellows (as opposed to academic staff) workload allocation is less transparent, and promotion criteria are less well-aligned with actual job responsibilities. Since Teaching Fellows are disproportionately female, this is important for gender equality¹⁰ – particularly as the recent increase in Teaching Fellow positions was in part caused by EDI initiatives, such as the Elsie Widdowson Fellowship for academic staff returning from parental leave.

⁹ This process is not entirely quantitative: in the typology of Barrett and Barrett, it is a partial workload model. See [The management of academic workloads: full report on findings](#), LC Barrett and PS Barrett, 2008.

¹⁰ For the same reason, the College's failure to increase Teaching Fellow salary scales to keep pace with the lecturer salary scale also has gender implications. Lobbying to change this is Action 19.

Figure 13: Gender-resolved Workload Distribution for Academic Staff for 2019-20



Summary Points from Action 18 - Workload

Add Teaching Fellows to the Department's formal workload model

(vi) Timing of departmental meetings and social gathering

Describe the consideration given to those with caring responsibilities and part-time staff around the timing of departmental meetings and social gatherings.

Departmental core hours are 10am–5pm. (Note that the hours of the Early Years Education Centre, the Imperial staff nursery, are 9am–5.15pm.) All Departmental meetings, all social events including the weekly Department tea, and all except one seminar are held within these hours (the exception is the Financial Mathematics Colloquium). This includes the termly Department-wide Colloquium Lecture, which is held from 4-5pm.

The member of staff responsible for scheduling teaching, Helen Haines, is careful to arrange teaching responsibilities around family and caring commitments. At the start of each year, she circulates a form on which staff can indicate what times they would like to be free from teaching, and then arranges the teaching schedule so as to guarantee this.

Action 24 - Core Hours

Move the Mathematical Finance Colloquium to within Department core hours

(vii) 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 EDI Committee recently analysed the gender balance among seminar speakers in the Department, and found great variability. Because of this, the HoD has mandated that all seminar chairs write their own EDI policy, setting out their goals for gender balance (as well as diversity in other forms) for speakers in the seminar. Previous interventions by the EDI Committee have had some impact: for example until a few years ago, fewer than 20% of speakers in the Department Colloquium were female, but since this was pointed out by the EDI Committee the situation has improved markedly, with roughly 40% of recent speakers being women.

The Research Committee has a policy whereby any workshop or conference that receives Departmental funding must have female academics as at least 30% of speakers and participants, or explicitly justify why this is not possible.

One of the reconstituted EDI Committee's first acts in 2017 was to insist, after a website redesign that contained photographs only of male mathematicians, that the photographs be updated to reflect the diversity of our Department. The website now highlights female mathematicians prominently.

Action 26 – Gender Balance Among Speakers in Department Seminars

Reanalyse the gender balance among seminar speakers, and adjust policies if necessary

(viii) 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.

The Department undertakes a broad range of outreach activities. These involve many academic and research staff, both male and female. Some outreach activities arise organically, for example through contacts between academics and local schools; others are arranged via the Departmental Outreach Co-ordinator, Prof. Gustav Holzegel.

Academic and research staff do a significant amount of outreach to local schools. Some of these activities also involve PGR and UG students. Some of this outreach, such as visits to girls' schools and our London Girls Maths event, is gender-specific but much of it is not. For those parts, such as the Cohort Program, which form part of Imperial's Widening Participation agenda, applications to the program are assessed in a gender-blind way (and in practice end up with over 50% female participation, except for programs based around engineering).

Outreach and public engagement activities are accounted for in workload allocation, and are highly valued in the promotion process.

Word count for Section 5.6. Organisation and culture: **1758 words**
Aggregate word count for application: **11112 words**

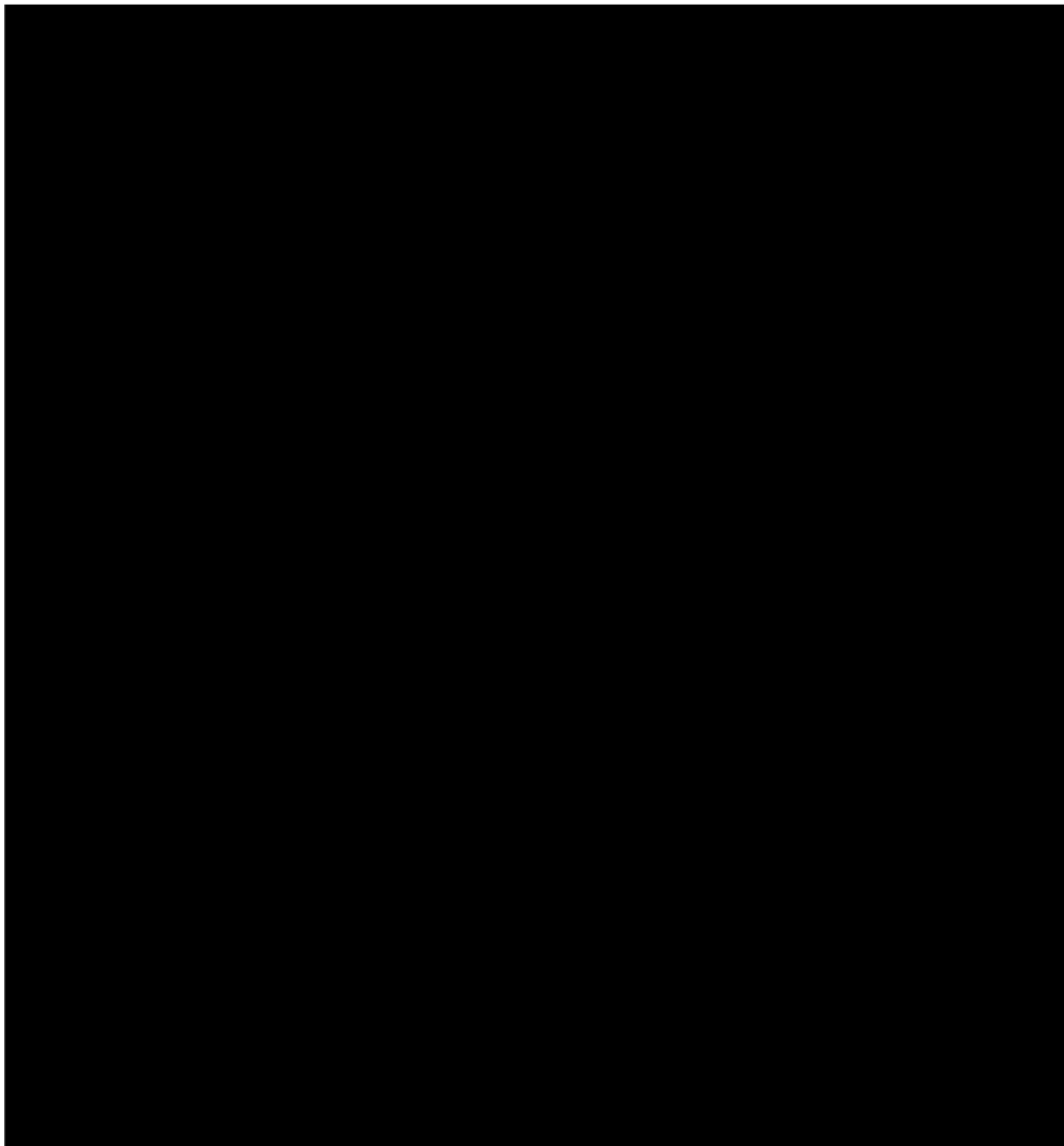
7. CASE STUDIES: IMPACT ON INDIVIDUALS

Recommended word count: Silver: 1000 words

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

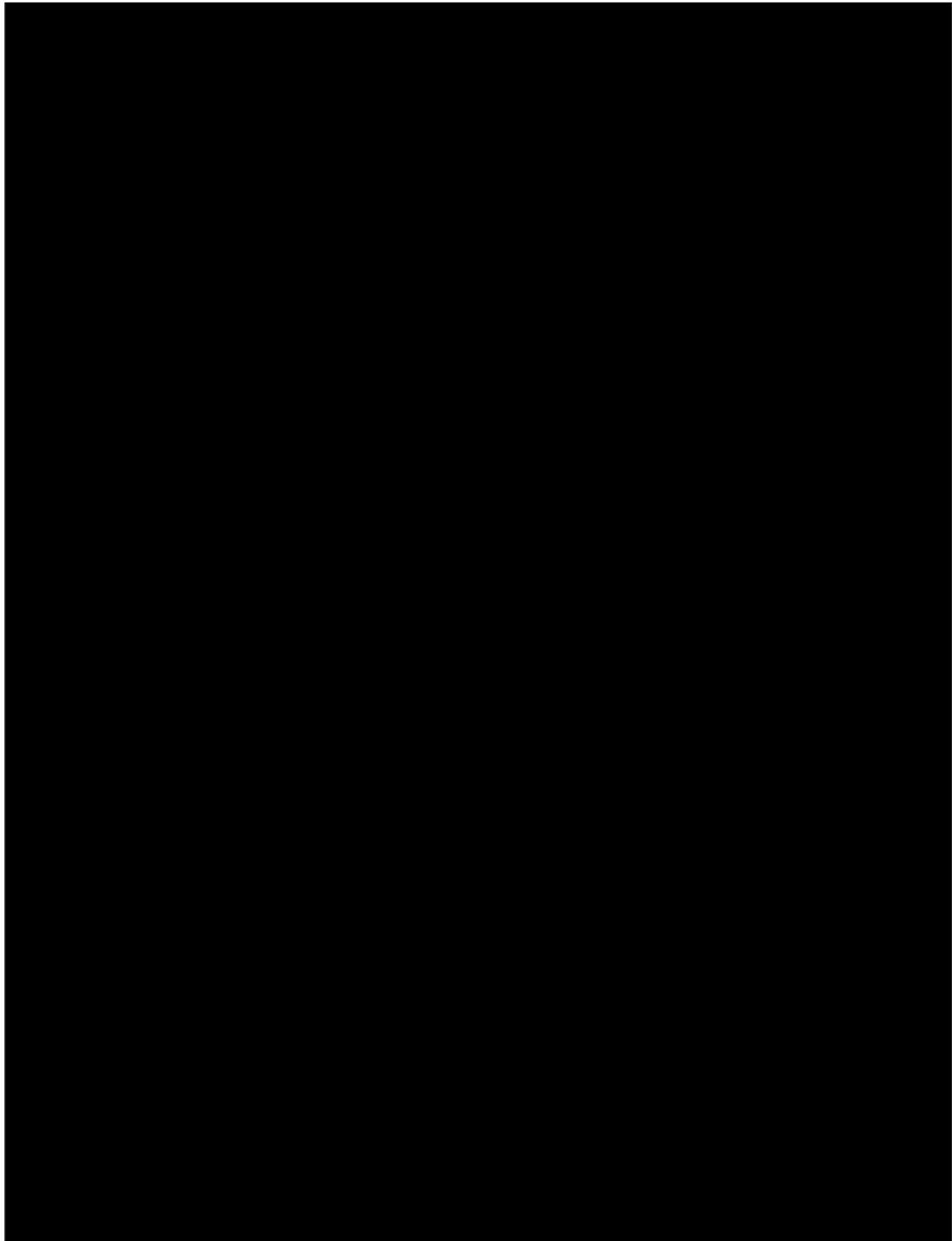
The subject of one of these case studies should be a member of the self-assessment team. The second case study should be related to someone else in the department. More information on case studies is available in the awards handbook.

Dr Charlotte Kestner – Senior Teaching Fellow in Pure Mathematics





Dr Ana Caraiani – Reader in Pure Mathematics





Word count for Section 7. Case studies: **1153 words**
Aggregate word count for application: **12265 words**

8. FURTHER INFORMATION

Recommended word count: Bronze: 500 words | Silver: 500 words

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

N/A

Word count for Section 7. Further information: **1 word**

Aggregate word count for application: **12266 words**

9. 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.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
1 (see Section 5.1.iv)	<p>To build a reputation as a Department that supports and develops talented female mathematicians.</p> <p>To increase the proportion of PGR students in the Department who are female (currently 19%) to at least the national average (currently 25%). This is a key point in our leaky pipeline.</p> <p>To develop a network of former Fellows and leverage this to improve the gender balance in applications for our postdoctoral and academic positions.</p>	<p>10-week Fellowship for female students in the summer before their final year of a Masters (integrated or stand-alone) in Mathematics, Statistics, or a closely-related discipline. The Fellowship will give talented female undergraduates the opportunity to gain additional research experience, with the intention that this will both motivate them to go on to a PhD and increase the chance of them gaining a PhD position.</p>	<p>The program launched in 2019, and will repeat yearly. February, yearly: advertising and recruitment, through direct email to maths departments, posters, Facebook advertising, and social media. End of March, yearly: application deadline. April, yearly: candidate selection. Summer, yearly: Fellows undertake a 10-week research project with an academic supervisor, as well as cohort-building activities and communications training. Each fellow receives a bursary at UKRI-supported PhD student rate (currently £320/week).</p>	<p>Program lead (David Ham) Departmental CDT leads (because some Fellows are supervised by academics from our CDT partner institutions).</p>	<p>Success measures: the number of Fellows who go on to study for a PhD, the number of Fellows who apply to study for a PhD in our Department, and the number of former Fellows who apply for post-doctoral/academic positions in our Department. Our goal is for at least 90% of the Fellows to go on to PGR study, and for at least 4 Fellows a year to continue to PGR study at Imperial. If this had been the case last year, for example, it would have improved our PGR gender balance from 19% female to 21% female.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
		<p>Collect feedback. Assess the effect of the Fellowship program on Fellows' careers.</p> <p>Advertise postdoctoral and academic positions through the network of former Fellows.</p>	<p>End of summer, yearly: collect feedback from participants.</p> <p>September, yearly: contact Fellows from the previous cohort, recording which of them have gone on to study for a PhD and their destinations.</p> <p>October 2024 onwards: circulate job adverts for postdoctoral positions in the Department to former Fellows, encouraging them to apply and to share the information with their colleagues. Later on, do the same for academic positions.</p>	<p>Program lead (David Ham)</p> <p>Program lead (David Ham)</p> <p>Program lead (David Ham) Research Operations Manager (Rusudan Svanidze)</p>	<p>Feedback from the first cohort was extremely positive.</p> <p>No data yet, because the program only started in 2019. Our goal is for at least 90% of the Fellows to go on to PGR study.</p> <p>Number of former Fellows who apply for postdoctoral and academic positions in our Department.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
2 (see Sections 5.1.iii, 5.1.v)	<p>To increase the proportion of female undergraduates who choose to switch to our 4-year MSci degree or an MSc, rather than our 3-year BSc.</p> <p>Our MSci program is currently 20% female.</p>	<p>Provide Marjorie McDermott scholarships for our top-performing female undergraduates. These scholarships are for £1000/yr in years 2 and 3, and automatically renew given satisfactory academic performance. They increase to £7500/yr for the fourth year if the recipient stays on for the MSci or an MSc within the Department.</p>	<p>The Marjorie McDermott Scholarship scheme was launched in November 2019. It will repeat each year.</p> <p>Early November, yearly: advertise the scholarship to all 2nd and 3rd year UGs by email, asking students to apply or to nominate candidates. Application/nomination deadline is the end of November.</p> <p>Early December, yearly: candidate selection and interviews. Awards will be made in January.</p> <p>October, yearly: record scholarship recipients who have started the fourth year of the MSci program, or our MSc.</p>	<p>Undergraduate Liaison Officer (Inkeri Hibbins)</p> <p>Director of Undergraduate Studies (David Evans)</p> <p>Undergraduate Liaison Officer (Inkeri Hibbins)</p>	<p>The proportion of Scholarship recipients who continue to the fourth year of the MSci or MSc program, with a goal of 100% continuation.</p> <p>Increase gender balance on our MSci programme (currently 20% female) up to our overall UG gender balance (currently 32% female).</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
<p>3 (see Sections 5.1.iii, 5.1.iv, 5.1.v, 5.2.i, 6.1.i)</p>	<p>To drive cultural change across the Department, making fairness and equality essential parts of everything we do. Mandatory all-staff training will help us to affect things like post-doc recruitment and PGR admissions, where there are many staff involved and processes are harder to manage.</p>	<p>One mandatory, all-staff EDI-related training activity per year. Started in 2019-20, with Unconscious Bias training. Topics for future years: Active Bystander training, appraisal (PRDP) training.</p>	<p>Each training activity will be provided in three sessions, held at lunchtime with one in each term. All staff are required to attend one of these sessions each year. The sessions are advertised well in advance, by email to all staff and through the Department Meeting.</p>	<p>EDI Administrator (David Whittaker): recording participation and ensuring compliance EDI Committee: choosing training activities. HoD (David van Dyk): following up in staff reviews (PRDPs) where appropriate.</p>	<p>The proportion of staff that receive training, with a goal of 100%.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
4 (see Section 5.1.ii)	To improve the gender balance in our UG applicant pool. Over the past five years our applicant pool has been 35% female.	<p>Hold three Open Days per year, emphasising the diversity of students in the Department. Student panels should be gender balanced and diverse. At least 50% of the academic staff speaking should be female.</p> <p>Our new work experience programme launched in 2020, and will repeat yearly. This is a 5-day program targeted at year 12 students from families with low income or where parents do not have a College degree. Admissions will be gender-balanced.</p>	<p>Spring Term each year</p> <p>We adjusted our Open Days to emphasize diversity as part of our Athena SWAN Bronze process, and have further adjusted them in light of best practice from other Departments and feedback from our UG focus groups</p> <p>January, yearly: advertise the program through Imperial College website and social media feeds, and contacts in local WP schools.</p> <p>February, yearly: contact participants from the previous year to determine how many of them applied to university, and how many applied to Imperial.</p> <p>April, yearly: candidate selection.</p>	<p>UG Liaison Officer (Inkeri Hibbins) UG Admissions Tutor (Lotte Kestner)</p> <p>Imperial College WP team.</p> <p>EDI Administrator (David Whittaker)</p> <p>EDI Administrator (David Whittaker)</p>	<p>The gender balance in our applicant pool improves each year, reaching 40% female by 2024. This is the success measure for the whole of Action 4.</p> <p>Additional success measures for the Work Experience program: 75% of participants in the first cohort apply to university, rising to 90% of participants by 2024.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
		<p>Outreach to teachers</p>	<p>July, yearly: run the program.</p> <p>Started in summer 2019, repeating yearly: Provide speakers for at least two teacher conferences per year, emphasising our commitment to EDI and advertising MAT support programs. Use this as an opportunity to build relationships with maths teachers, particularly those in girls' schools and WP schools.</p> <p>Started spring 2019, repeating yearly: provide targeted admissions information for teachers at Departmental Open Days.</p>	<p>UG Liaison Officer (Inkeri Hibbins) Imperial College WP team</p> <p>UG Liaison Officer (Inkeri Hibbins) UG Admissions Tutor (Lotte Kestner)</p>	
	<p>Increased target marketing, including promotional videos.</p>		<p>October 2020: make videos. January 2021: distribute videos via the College website and social media feeds.</p>	<p>UG Liaison Officer (Inkeri Hibbins) Imperial Communications Team</p>	

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
5 (see Section 5.1.ii)	<p>To improve the gender balance among candidates to whom we make UG offers.</p> <p>Over the past five years, 35% of our applicants have been female, whereas 31% of our offer pool was female.</p>	<p>Change approach to admissions, switching to using MAT as a banding tool only, and using a more holistic assessment for candidates in the middle band.</p> <p>Develop and support women-only preparation for the MAT admissions test.</p>	<p>Starting this admissions cycle, and continuing each year. We expect female candidates to do better than male candidates under the holistic assessment. See page 20 for detailed rationale.</p> <p>January 2021: work with the Advanced Mathematics Support Programme (who run MAT preparation sessions that we provide support for, targeted at state school students) to add all-women panels to the existing programs. Record participation so that we can track impact. Follow-on action if this is insufficient: expand this to offering complete all-women MAT preparation sessions.</p>	<p>UG Admissions Tutor (Lotte Kestner)</p> <p>EDI Committee Member with admissions experience (Colin Cotter)</p>	<p>The gender balance among candidates to whom we make offers is approximately equal to the gender balance in our applicant pool (currently 35%).</p> <p>The proportion of participants in women-only MAT preparation sessions who apply to universities that require the MAT test, with a target of 95%; the proportion of these participants who apply to Imperial, with a target of 90%.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
6 (see Section 5.1.ii)	To increase the likelihood that a female UG offer holder accepts our offer. Our conversion rates are already good (over the past five years, acceptances are 32% female and offers are 31% female) but we want to further improve this.	Offer-holder Open Days	Spring Term each year: hold two Offer Holder Open Days. Student panels should be gender-balanced and diverse. At least 50% of academic staff speaking should be female.	UG Admissions Tutor (Lotte Kestner)	The gender balance among accepted candidates is approximately equal to the gender balance among candidates to whom we make offers.
		Phone calls to offer holders by current Mathematics UG students, to let them get to know about the Department and encourage them to accept our offer.	Started in Spring term 2019, repeating yearly. As far as possible we will match the gender and cultural background of the caller with that of the offer holder.	UG Liaison Officer (Inkeri Hibbins)	
7 (see Section 5.1.ii)	To ensure that our actions related to UG recruitment are effective.	Adjust raised offers from A*-A*-A* to A*-A*-A-A, as suggested by UG focus groups	Started for admissions in academic year 2020-21, repeating yearly.	UG Admissions Tutor (Lotte Kestner)	Quantitative targets in Actions 4, 5, and 6 are met. The Action Plan is adjusted in response to experience and developments.
		Review the effectiveness of Actions 4, 5, and 6, assessing progress using the most recent UG recruitment data.	Yearly, at the April meeting of the EDI Committee.	EDI Administrator (David Whittaker): recording data, progress, and any changes to the Action Plan.	

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
8 (see Section 5.1.ii)	Understand and mitigate the gap in degree outcomes between male and female students on our UG program. Over the past 10 years, 36% of male candidates and 28% of female candidates received a First Class degree; 34% of male candidates and 38% of female candidates received an Upper Second.	Determine the underlying causes of the achievement gap. Formulate appropriate policies.	Sep—Dec 2020: statistical analysis Feb 2021: hold UG focus groups, with an external consultant to ensure anonymity. Mar—May 2021: synthesise results from statistical analysis and focus groups. Collaborate with the Department of Physics at Imperial, who have done a lot of work to understand and tackle their own achievement gap as part of their application for an	UG admissions team: data collation EDI Committee Chair (Tom Coates): data analysis Expert statisticians on the EDI Committee (Heather Battey, Daniel Mortlock) EDI Committee Chair (Tom Coates) EDI Committee Chair (Tom Coates) Deputy HoD (Andy Parry) Director of UG Studies (David Evans)	By Apr 2021: to have a robust quantitative measure of the achievement gap, and hypotheses for its causes. By the end of 2024: made appropriate changes to Department policies, and reduced this achievement gap. By the end of 2028: there is no longer a significant gender-related achievement gap in our UG program.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
			Athena SWAN Gold award. Develop policy. Set appropriate quantitative targets and design a review process.	EDI Committee member with joint appointment with Physics (Daniel Mortlock)	
		Implement those policies.	Starting Sep 2021	Responsibility will vary depending on policies.	
		Review effectiveness of these policies.	Annually, starting October 2022.	Responsibility will vary depending on review process.	
9 (see Section 5.1.iii)	To increase the number of women who apply to our PGT programs. Our applicant pool is currently 42% female.	Ensure that PGT marketing materials reflect our commitment to EDI, including highlighting our Athena award.	Starting with materials for the 2021 admissions cycle.	Director of PG Studies (Ryan Barnett)	The gender balance in our PGT admissions pool remains substantially above the national gender balance for PGT Mathematics courses (currently 34% female).
10 (see Section 5.1.iv)	Many of our Centres for Doctoral Training (CDTs) are making good progress on gender equality in admissions (see Table 13) but some are not.	Share best practices around shortlisting and interviewing between CDTs.	Sep 2020	Chair of the EDI Committee (Tom Coates) Departmental CDT leads	Success will be measured against the specific EDI commitments made to funders, which differ from CDT to CDT.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
11 (see Section 5.1.iii)	Admissions to the Mathematical Finance MSc have a significantly larger gender gap than for our other PGT programs, despite a similar gender balance in the applicant pool. See Table 9 and Table 10.	Review the Mathematical Finance MSc admissions procedures, ensuring they comply with Department policy and free from gender bias. Uniformize admissions procedures across our PGT programs.	Jun 2020	Member of the EDI Committee with admissions experience (Daniel Mortlock) Director of PG Studies (Ryan Barnett) Mathematical Finance MSc coordinator (Mikko Pakkanen)	The gender balance among applicants, candidates made offers and candidates who accept offers for our Mathematical Finance MSc should be approximately equal.
12 (see Sections 5.1.iii, 5.1.iv)	Review progress and effectiveness of policies to improve the gender balance in our PGR and PGT programs (Actions 9, 10, and 11). Progress here is a lower priority than gender equity in our UG programs, so we will focus on it later in our Silver program. This will also allow	Report progress against quantitative targets. Analyse which policies and programs were successful; determine if changes and/or additional resources are necessary	At the September meeting of the EDI Committee, starting Sep 2022 and repeating yearly.	EDI Administrator (David Whittaker): record progress data and any changes to the Action Plan. Chair of EDI Committee (Tom Coates) Director of PG Studies (Ryan Barnett) EDI Committee members with CDT experience	The gender balance in our PGR applicant pool improves each year, and reaches the national gender balance for PGR mathematics students (currently 25%; Heidi data) by 2024. For both the PGT and PGR admissions processes, the gender balance at each stage (admissions, offers, acceptances) is approximately equal.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
13 (see Section 5.1.v)	time for Action 1 to have an impact. Expand programs that provide role models for women considering key transitions: the choice of 3-year BSc/4-year MSci UG degree, and continuing from UG or PGT study to post-graduate research. These are key points in our leaky pipeline.	Increase involvement of PGT students in Departmental Women in Mathematics UG events. UG Colloquium (talks by and for undergraduates) organisation team to include women and to actively seek female speakers Improve the gender balance on our undergraduate summer research program (UROP). Last year 22% of our UROP students were female.	Sep 2020, repeating yearly: encourage female PGT students to take part in Departmental Women in Maths UG events, as speakers and as participants (and role models). Started in Apr 2019, after gentle encouragement from the UG Liaison Officer. Spring term, repeating yearly: UG Women in Maths group to hold panels promoting UROP as an alternative to summer internships. Summer 2020, repeating yearly: ensure gender balance on UROP is recorded	(Heather Battey, Colin Cotter) PG Personal Tutors Director of PG Studies (Ryan Barnett) UG Liaison Officer (Inkeri Hibbins) UG Liaison Officer (Inkeri Hibbins) Departmental UROP lead (Igor Krasovsky)	These success measures also apply to Actions 9, 10, and 11. The number of female PGT students attending and/or speaking at UG Women in Maths events, with a target of 40% female speakers. The gender balance among UG Colloquium speakers, with a target of 30% female speakers. The gender balance on the UROP program is in line with our overall UG gender balance (currently 31% female).

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
		<p>Hold termly Women in Mathematics lectures/lunches. These give female students in the Department exposure to female academics and other women who have pursued higher degrees.</p>	<p>Sep 2020, repeating termly as appropriate: extend these to include female speakers from the Department Colloquium.</p>	<p>UG Liaison Officer (Inkeri Hibbins) Research Operations Manager (Rusudan Svanidze)</p>	
	<p>Hold termly inspirational lectures</p>		<p>The lecture series For The Love Of Maths (Sweets And Treats), launched in 2017 by the UG maths society MathSoc, gives an introduction to what research is like, including broader aspects such as family support and work/life balance. Speakers include postdocs and academic staff.</p>	<p>UG Maths Society UG Liaison Officer (Inkeri Hibbins)</p>	

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
14 (see Section 6.1.ii)	Staff feedback revealed that, although induction procedures are appropriate for most members of staff, it is missing critical information for new Teaching Fellows.	Develop induction material specifically for Teaching Fellows. Add this to the induction process for incoming Teaching Fellows.	Sep 2020 Jan 2021	Teaching Fellow on the EDI Committee (Marie-Amelie Lawn) Office Manager (David Whittaker)	New induction material given to incoming Teaching Fellows. Staff survey feedback for the question "I have all the information required to do my job" improves.
15 (see Section 6.1.ii)	Focus group feedback revealed that induction procedures are less effective for staff who do not arrive at the start of the academic year, because some important information is conveyed during start-of-year meetings.	Ensure that all induction material is gathered in one on-line location.	Jan 2021: start of process. Sep 2021: process is complete Dec 2022: survey new starters to evaluate effectiveness	Office Manager (David Whittaker)	Staff survey feedback for the question "I have all the information required to do my job" improves.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
16 (see Sections 5.2.i, 6.1.i)	<p>Review progress and effectiveness of recent changes to recruitment policies, which aimed to improve the gender balance in our recruitment of academic and research staff.</p> <p>Initial results appear to be positive. We therefore do not plan to make any major further changes for the first two years of our Silver process.</p> <p>This will give us time to assess and improve our implementation of the recent changes.</p>	<p>Report progress against these targets in the January meeting of the EDI Committee.</p> <p>Analyse which policies were successful and which were not; determine if implementation changes and/or policy changes and/or additional resources are necessary</p>	Yearly, in January.	<p>EDI Administrator (David Whittaker): record progress data, record any updates to policies or the Action Plan.</p> <p>Research Operations Manager (Rusudan Svanidze): data collection</p> <p>Chair of EDI Committee (Tom Coates): data analysis</p>	<p>The gender balance in our applicant pool (currently 19% female) improves each year, reaching 25% female by 2024.</p> <p>The gender balance at each stage of the recruitment process (applicants, shortlisted candidates, successful candidates) remains approximately equal.</p> <p>The gender balance among academic staff (currently 7% female; recent hires will increase this to 11% female; national average 18% female) reaches 15% female by the end of 2024.</p>
17 (see Sections 5.2.i, 6.1.i)	<p>Implement best practice to ensure that job adverts are not deterring female applicants</p>	<p>Ensure that all job adverts are checked for gendered language prior to posting, using an appropriate on-line tool.</p>	<p>Starting for positions advertised in September 2020.</p> <p>The College has recently subscribed to Textio for this.</p>	Office Manager (David Whittaker)	<p>All job adverts are free of gendered language.</p>

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
18 (see Section 6.6.v)	Focus group feedback indicates that, although workload allocation for academic staff is broadly speaking equitable and transparent, the same is not true for Teaching Fellows.	Add Teaching Fellows to the Department's formal workload model.	By Sep 2021.	Deputy HoD with responsibility for workload (Harry Zheng) Deputy HoD on the EDI Committee (Andy Parry)	Staff Survey feedback for the question "I can meet the requirements of my job without regularly working excessive hours" improves to 60% positive by 2023 (currently 30% positive) Gender-resolved analysis of workload (as in Figure 13) is equitable. Focus group feedback improves.
19 (see Section 6.1.iii)	Promotion criteria for Teaching Fellows are poorly-aligned with their actual responsibilities. Furthermore salary scales for Teaching Fellows have not been adjusted to keep them in line with those for academic staff.	Lobby College to broaden the types of research that are required for Teaching Fellow promotion, and to raise the salary scales for Teaching Fellows.	Jun 2020 raise this with the Vice-Provost for Learning and Teaching Oct 2020: raise this with the incoming Vice-Provost for Education Oct 2020 raise this at the Faculty of Natural Sciences Equality, Diversity, and Inclusion Committee	HoD (David van Dyk) Vice-Dean for Education (Emma McCoy) EDI Committee member who is a member of this Faculty Committee (Vahid Shahrezaei)	College revises the promotion criteria for Teaching Fellows, and raises their salary scale.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
20 (see Section 6.4.ii)	Take-up of Personal Review and Development Plan (PRDP) meetings is far lower for professional services staff than for academic staff. Staff Survey results indicate that only 58% of professional services staff regard their PRDP meeting as useful.	Ensure that all line managers of professional services staff have PRDP training. Encourage annual PRDP meetings using the dedicated admin staff email list.	Starting Sep 2020 Starting in Jan 2021, repeating yearly.	Department Operations Manager (Richard Jones) Office Manager (David Whittaker)	By the end of 2021, all line managers have had PRDP training. 90% of professional services staff have an annual PRDP meeting each year. Staff Survey feedback improves, to 75% positive by 2021 and 90% positive by 2023.
21 (see Section 6.4.iii)	Anonymised interview feedback indicated that mentoring was particularly valuable to female professional services staff, and that a formal mentoring scheme would be helpful.	Introduce a mentoring scheme for professional services staff (possibly with cross-College mentors).	Spring term 2021: use PRDP reviews to find out which professional services staff would like mentoring. Oct 2021: launch mentoring scheme	Line managers Department Operations Manager (Richard Jones) Department Operations Manager (Richard Jones)	We will measure success here when we repeat our anonymous interviews with female staff in 2022.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
22 (see Section 6.3.ii)	Take-up of Personal Review and Development Plan (PRDP) meetings is lower for PDRAs than for academic staff. Staff Survey results indicate that only 53% of PDRAs regard their PRDP meeting as useful.	Ensure that all line managers of PDRAs have PRDP training. Ensure that line managers are aware of training opportunities for PDRAs, and discuss these in the meeting. Encourage PDRAs to take up PRDPs using the PDRA mailing list.	Starting Sep 2020 Feb 2021, repeating yearly.	Research Operations Manager (Rusudan Svanidze) Deputy HoD (Andy Parry) Office Manager (David Whittaker)	By the end of 2021, 80% of line managers have had PRDP training. 66% of PDRAs have an annual PRDP meeting each year. (This is the most ambitious reasonable goal, as staff cannot have a meaningful PRDP until they have been in post for a year.) Staff Survey feedback improves, to 75% positive by 2023.
23 (see Section 6.3.iii)	Anonymised feedback from female academic staff indicates that mentorship schemes have been particularly important, but mentorship for PDRAs is currently poorly-organised and often ends up with the same person acting as	Implement the College Postdoc and Fellows Development Centre's PI Expectations framework, which in particular includes mentorship.	Oct 2020—Dec 2020: design specific Departmental policies that implement the framework	Postdoc Champions (Heather Battey, Martin Rasmussen) Head of Postdoc and Fellows Development Centre (Liz Elvidge)	We will measure success here when we repeat our anonymous interviews with female staff in 2022.

Ref.	Rationale	Details of planned action	Timeframe, including key milestones	Person responsible	Outcome with success measures
	line manager and mentor.		Jan 2021-Dec 2021: implement these policies	Research Operations Manager (Rusudan Svanidze)	
24 (see Section 6.6.vi)	The Financial Mathematics Colloquium is the only Departmental event that is held outside core hours (10am-5pm)	Move the Financial Mathematics Colloquium to within core hours.	Oct 2020	Head of Mathematical Finance (Damiano Brigo)	All Departmental events are held within core hours.
25 (see Section 6.2.iii)	We do not currently record exit destinations for PDRAs or Teaching Fellows who leave the Department	Record exit destinations	Oct 2020	Office Manager (David Whittaker)	
26 (see Section 6.6.vii)	Improved visibility of role models	Reanalyse gender balance among seminar speakers and compare to 2019	Dec 2020, repeating yearly	Chair of the EDI Committee (Tom Coates)	25% of speakers in Department seminars are female 40% of speakers in the Department Colloquium are female