



Department Application
Bronze and Silver Award



ATHENA SWAN BRONZE DEPARTMENT AWARDS

Recognise that in addition to institution-wide policies, the department is working to promote gender equality and to identify and address challenges particular to the department and discipline.

ATHENA SWAN SILVER DEPARTMENT AWARDS

In addition to the future planning required for Bronze department recognition, Silver department awards recognise that the department has taken action in response to previously identified challenges and can demonstrate the impact of the actions implemented.

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

COMPLETING THE FORM

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

This form should be used for applications for Bronze and Silver department awards.

You should complete each section of the application applicable to the award level you are applying for.

Additional areas for Silver applications are highlighted throughout the form: 5.2, 5.4, 5.5(iv)

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

WORD COUNT

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

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

We have provided the following recommendations as a guide.

Department application	Bronze	Silver
Word limit	10,500	12,000
<i>Recommended word count</i>		
1. Letter of endorsement	500	500
2. Description of the department	500	500
3. Self-assessment process	1,000	1,000
4. Picture of the department	2,000	2,000
5. Supporting and advancing women's careers	6,000	6,500
6. Case studies	n/a	1,000
7. Further information	500	500

Name of institution	University of Birmingham	
Department	School of Mathematics	
Focus of department	STEMM	
Date of application	April 2018	
Award Level	Bronze	
Institution Athena SWAN award	Date: November 2011, renewed 2014	Level: Bronze
Contact for application Must be based in the department	Prof Sergey Shpectorov	
Email	s.shpectorov@bham.ac.uk	
Telephone	0121 4146604	
Departmental website	http://www.birmingham.ac.uk/schools/mathematics/index.aspx	

1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

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

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

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

[475 words]

2. 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 School of Mathematics at the University of Birmingham is part of the College of Engineering and Physical Sciences (CoEPS). The School is housed in the Watson building which is centrally located on the University of Birmingham Edgbaston campus. The School was awarded an Athena SWAN Bronze award in 2013; an extension of this award was received in November 2016, however our April 2017 Bronze renewal application was unsuccessful. The criteria which we failed to meet were listed as follows. *“Significant problems with Action Plan, actions not SMART. Issues not well identified throughout application, actions not well evidenced. Lack of qualitative data.”*

The School has been a Supporter of the London Mathematical Society (LMS) *Good Practice Scheme* since 2016, which has the aim of supporting mathematics departments to embed equal opportunities for women within their working practice.

The School is led by a Head of School (HoS), a Deputy Head of School (dHoS) and a School Operations Manager (SOM). The HoS and dHoS are supported by an Executive Committee and the other committees of the School, and report to the College Executive. The Executive Committee is chaired by the HoS and meets fortnightly during term time. An overview of the School’s committee structure is presented in Figure 2.1. The Director of Equality and Diversity (E+D) leads the Self-Assessment Team (SAT) and is a member of the School Executive. The Director (DoE+D) and Deputy Director of E+D (dDoE+D) are also both members of the College E+D committee.

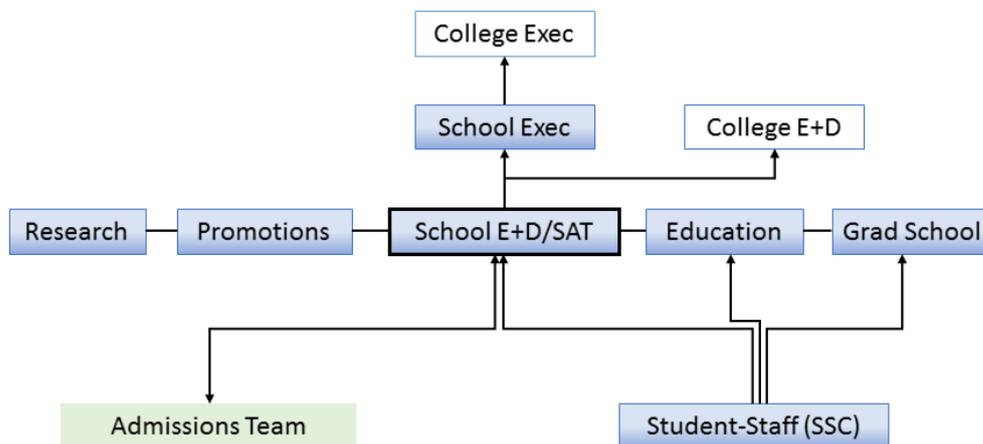


Figure 2.1: School committee structure, also indicating reporting relationships relevant to E+D. The admissions team are not a committee but their practice is informed by E+D policy and data are provided bidirectionally.

We have one named Chair, the Mason Professor of Mathematics established in 1875, and the present incumbent is female. Most staff in the school are on research and teaching contracts, with over 90% of T&R staff submitted to REF2014. An overview of the School's staff and student population by level and gender is presented in Table 2.1.

An unusual aspect of our staffing is that since 2012 we have had a small number of 'Birmingham Fellows' in the School (2F, 6M, 25%F). These are permanent positions at the Lecturer and Senior Lecturer grade (included under these headings in Table 2.1) with low administration and teaching responsibilities during the first five years of employment.

Grade	F	M	Total	%F
Professor	1	12	13	8%
Reader	1	2	3	33%
Senior Lecturer	5	11	16	31%
Lecturer	2	20	22	9%
Research Fellows	1	14	15	7%
Professional Services	7	2	9	78%
Postgraduate Research	8	33	44	20%
Postgraduate Taught	34	37	71	48%
Undergraduate	282	441	723	39%

Table 2.1. Academic staff, Professional Services staff, and students, by grade and gender. Student data are from 2016/17, staff data are calendar year 2017 [central University data].

A major initiative is the Jinan-Birmingham Joint Institute, which is now in its second year of operation (about 300 students currently enrolled). Within this initiative the School delivers significant teaching on four programmes in Guangzhou, China, for which academic staff have been specifically recruited. They lecture in China for approximately two months per year, which covers the majority of their teaching obligations. They are located in Birmingham for the remaining 10 months, and have substantial freedom to travel and focus on research during this period. By the end of 2017 we had recruited 1 Reader and 3 Lecturers (0% F) to support this initiative; substantial recruitment is ongoing.

The School's undergraduate programme consists of a BSc, an undergraduate masters MSci and a small number of joint honours BSc and MSci degrees. The School manages three taught MScs and research degrees at MRes and PhD levels.

[504 words]

3. THE SELF-ASSESSMENT PROCESS

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

Describe the self-assessment process. This should include:

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

The SAT was created in 2013 as a 5-member subset of the E+D Committee; only 3 were based in the School, one has since left. As planned in the Athena SWAN Bronze renewal application (2017), the SAT was expanded to coincide with the E+D Committee; both original members are still involved. Going forward, we aim for the expanded group to maintain better continuity.

The remit of the E+D committee has been extended to include all protected characteristics. In line with other committees in the School, and to provide liaison (Figure 2.1), a number of senior staff have been co-opted to the SAT *ex officio*. Both the SAT and E+D committees are chaired by the DoE+D, who leads the self-assessment process. Committee membership is reviewed annually to ensure reasonably balanced representation by gender and level, and sustained representation by student members and research fellows. Nominated, volunteer and *ex officio* members are indicated in Table 3.1. Expressions of interest to join the committee are welcomed.

Name (Gender)	Level	School Administrative Role	SAT Role	SAT membership
Sergey Shpectorov (M)	Professor	Director E+D; SAT lead; University Athena SWAN Working Group; College E+D Committee	Chair; coordinator	(N) 2018-
Alexandra Tzella (F)	Lecturer	Deputy Director of E+D; College E+D Committee	Vice-chair; Women's Event; writing group; data collection/analysis	(N) 2017-
Peter Butkovic (M)	Professor	Director New Staff (retired 2018)	Member and advisor on probationary staff issues	(EO) 2017-2018
Gemma Cupples (F)	PGR (2016-18), Research Fellow (2018)		Member; Research Fellow advisor	(V) 2016-
Calina Durbac (F)	UG Year 2	SSC Chair	Member; UG representative	(V) 2018-
Rosemary Dyson (F)	SL	Director New Staff; Director E+D, SAT lead (2016-2018)	Writing group; Chair (2016-18); 2017 lead	(V,N,EO) 2013-
Paul Flavell (M)	Professor	Head of School (2012-)	Approval of Action Plan; oversight	(EO) 2013-

Meurig Gallagher (M)	Research Fellow		Data collection/analysis; Research Fellow advisor	(V) 2017-
Chris Good (M)	Professor	Deputy Head of School; coordinates Jinan programmes	Member; Birmingham-Jinan advisor	(V,EO) 2016-
Michael Grove (M)	Reader	Deputy Head of Education (2018-)	Writing group; education advisor	(N) 2016-
Susana Gutierrez (F)	SL	Senior Tutor (2017-). Director E+D, SAT lead (2013-2016)	Member; Chair (2013-2016, post award)	(N,EO) 2013-
Eleanor Mestel (F)	Professional Services	Outreach/Schools Liaison; College E+D; secretary LGBTQ+ staff network	Member; local school relationship advisor	(V) 2017-
Cara Neal (F)	PGR	PGR Representative	Member; PGR students representative	(V) 2018-
Sandor Nemeth (M)	SL	Director of Graduate Studies (2017-2018)	Member; advisor on graduate students	(EO) 2017-2018
Chris Parker (M)	Professor	Director of Graduate Studies (2018-); Director of Research (2017)	Writing group; data collection/analysis	(EO) 2017-
Hannah Roberts (F)	Professional Services (Manager)	School Operations Manager	Writing group	(EO) 2017-
Sally Schofield (F)	Professional Services (Manager)	Admissions Tutor (on secondment 2018-19)	Member; advisor on UG admissions	(EO) 2016-2018
Dave Smith (M)	Professor	Director of Research (2018-); Head of Applied Mathematics (2017)	Writing group; data collection/analysis	(V,EO) 2017-
Jordan Wiltshire (M)	UG Year 2	Coordinates BAME events	Member; BAME student representative	(V) 2018-

Table 3.1. SAT membership 2017-18 by gender, level and relevant experience. SL= Senior Lecturer, N=nominated, V=volunteered, EO=*ex officio*. Members bring experience and advise the committee about various activities within the School.

(ii) an account of the self-assessment process

Since 2016 School E+D meetings have taken place three times per year; the SAT met five times in 2018 to discuss the self-assessment process; the writing group met weekly in the final months of preparing the Athena SWAN application. In the wider setting of the University of Birmingham, senior leadership in E+D is provided by a Deputy Pro Vice Chancellor (Professor Una Martin). The School is represented in the termly University E+D leads meetings, termly University Athena SWAN Working Group meetings, and monthly College E+D meetings. The Athena SWAN application was critically reviewed by several senior staff in the School who are not on the SAT, the University Diversity Advisor, and an internal College panel prior to submission.

Dr Rosemary Dyson led the School's 2017 Bronze renewal bid and moved into the Director for New Staff role from September 2018 following prearranged study leave, remaining centrally involved with the SAT and writing group. Professor Shpectorov took over leadership of the School's E+D committee and the SAT from January 2018.

The ECU's 2017 feedback highlighted 'good practice and analysis', however significant issues were raised, particularly regarding the action plan and missing qualitative and quantitative data, which led to a 'no award' decision. The present application was prepared following a review of the detailed feedback, participation in a London Mathematical Society/Ortus Economic Benchmarking exercise and expansion of the SAT.

A subgroup of six colleagues (3F, 3M) was assigned the task of preparing the application; all members of the SAT reviewed and contributed to the final version. As an indicator of the commitment of the School to E+D activities, involvement with the SAT is taken into account during the workload allocation process as an administrative activity, with larger tasks (such as Writing Group membership) given greater weighting.

Three surveys (one each for Staff, Research students and Taught students) were run in Spring 2017, 2018; student survey responders were given the opportunity to enter a prize draw to encourage uptake. Tables, graphs and statistics used have been produced from centrally-held University, HESA and Russell Group data, School records, and the surveys. SAT meetings have focussed on critically examining available data, designing and considering the School surveys, identifying key challenges and issues, and developing both the action plan, and a management structure around it to ensure ownership and delivery.

The present self-assessment process and application therefore draws on data and many ideas developed in 2017, however the application has been essentially reworked from scratch to ensure all issues have been identified and appropriate actions are in place.

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

The SAT has grown significantly over the last years due to the expansion to include all the E+D committee. Ensuring sustained and substantial involvement from UG and PGT students appears to be a significant issue (Action 3.1). The recent introduction of 'Equality Reps' on the Student-Staff Committee provides an immediate source of membership.

The introduction of *ex officio* members to the SAT has increased engagement of senior male colleagues in the School with E+D issues, in addition to taking self-assessment workload away from the small number of mainly female (and often early-career) colleagues who previously carried much of this load. The engagement of several senior staff provides a pool of potential SAT leaders in the near future. We also believe that it is appropriate to recruit additional female and early career volunteers as their voice is crucial on E+D matters, in addition to providing future leadership in the longer term (Action 3.1).

All SAT members are currently drawn from the School body. While the DoE+D and dDoE+D participate in College and University E+D meetings, we have recently recognised the value of inviting colleagues from outside the School (Action 3.2). In summer 2018 we invited the University Equality and Diversity Advisor for Students to discuss student ambassador schemes; in future we will explore having more external visitors, including members of other SATs in the University. In addition, to develop School actions, a best practice group will be formed to collect and analyse information about gender equality best practice within the University and the broader HE sector.

We recognise the vital importance of ensuring School-wide engagement and delivering on the action plan once the application process is completed (Actions 3.3, 3.4). Going forward, the SAT will be organised into Working Groups to review progress against specific sets of actions, recommendations for improvement, and revision of actions, through a data-driven annual review (scheduled for March when the previous session's data is available). Progress against actions will be assessed via a traffic-light system (red, amber, green) based on progress, and reported to the School Executive, the Student-Staff Committee, and via a local wiki, the staff and student body.

Action 3.1: Membership and participation

- (a) Conduct an annual review of SAT membership. Proactively seek diverse staff participation on the SAT.**
- (b) Seek members from among our PGT and UG students. Initially focus on 'Equality Reps' (members of Student-Staff Committee), proactively seeking out other students if necessary.**

Action 3.2: Drawing on wider university and national expertise

- (a) Regularly invite external visitors with E+D specialism or senior responsibility to SAT meetings.**
- (b) Establish a best practice Working Group to learn from other departments. Encourage attendance at national best practice events and allocate an internal budget for such activities.**

Action 3.3: Management and organization

- (a) Devise a School calendar for the period through 2022 including SAT meetings (2 autumn, 2 spring, 1 summer), same week/day each year. Ensure these are timed to enable student participation.**
- (b) Establish SAT Working Groups to take ownership of and deliver specific actions. More details will appear in later sections.**

Action 3.4: School-wide engagement

- (a) Carry out an annual review of progress against the action plan in March each year, with RAG analysis (Red=failing, Amber=issues for concern, Green=performing to plan) for each issue and action, reported via the School wiki.**
- (b) Organize an open E+D meeting at least once per year between summer 2019 and 2022.**

[939 words]

4. A PICTURE OF THE DEPARTMENT

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

Summary of key issues

- The proportion of **female students taking the 4-year undergraduate MSci degree is low.**
- There may be a **female attainment gap for postgraduate taught MSc programmes.**
- The number of **scholarship-funded female PhD students is very low.**
- **Female staff numbers are declining** below national benchmarks due to declining recruitment at research fellow and Lecturer grades.
- Promotions of women to Senior Lecturer have been relatively successful, however **there are few female Professors.**

4.1. Student data

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

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

CoEPS runs a foundation year which may lead to progression to undergraduate study in mathematics. This programme is very small (8, 6, 0 students in the last 3 years) and there is no evidence of gender disparity.

(ii) Numbers of undergraduate students by gender

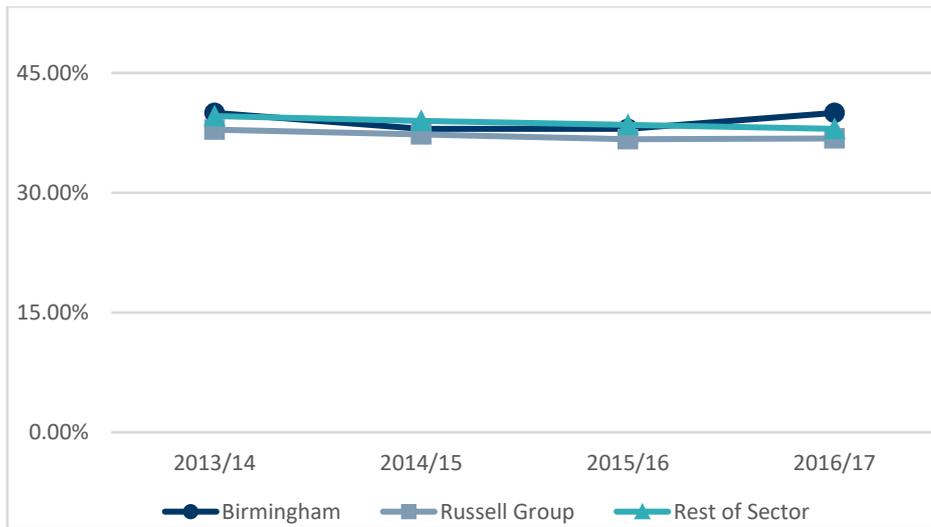
Full- and part-time by programme. Provide data on course applications, offers, and acceptance rates, and degree attainment by gender.

There have not been any part-time undergraduate students in the School in recent years; all data below refer to full-time students.

Undergraduate Composition

Figure 4.1.1(a) shows that female undergraduate proportions are very close to Russell Group and UK universities averages (consistently around 38-40% and similar to the proportion of female students taking A-level mathematics at 39%). However, as highlighted in Figure 4.1.1(b), there is a **substantial gender disparity for students taking the 4-year MSci (20% of female versus 30% of male students)**. Overall trends are relatively steady, perhaps with a recent increase in MSci registrations.

(a)



(b)

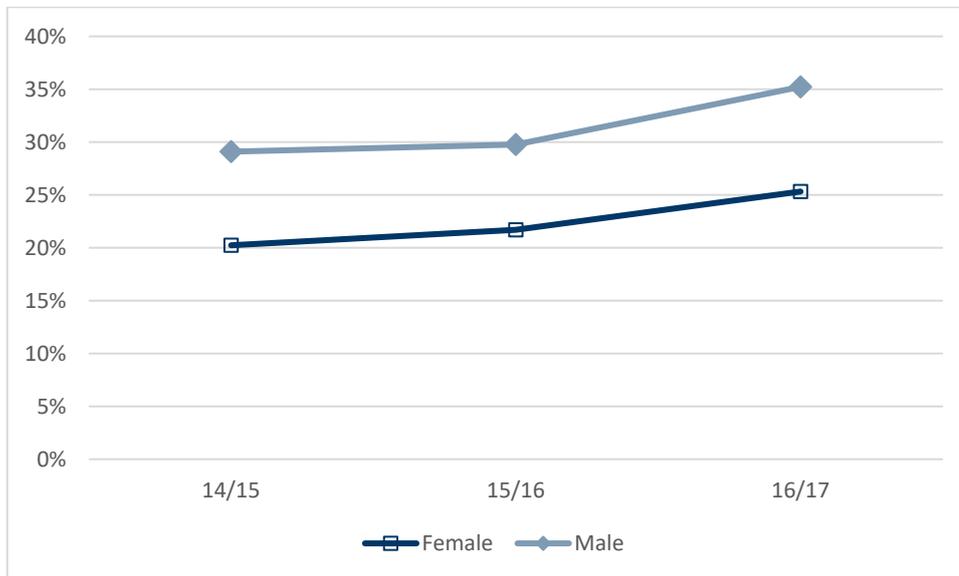


Figure 4.1.1: (a) Female UG in mathematics as a proportion of all UG students in mathematics (FPEs - HESA data). (b) The 'MSci gap': the proportion of undergraduates taking the 4 year MSci degree by gender between 2014/15-2016/17.

Undergraduate Admissions

For context, following our 2013 Action Plan, we ensure visible female staff and students at pre-application University Open Days, Applicant Visit Days (AVDs) and in publicity materials, emphasising that the School is a friendly and welcoming environment. Offer and acceptance rates are comparable for women and men across both the BSc and MSci (Table 4.1.1, dark highlighted rows). **The gender disparity instead originates in the number of applications** (BSc: roughly 40%F/ MSci roughly 30%F), **motivating Action 4.1.1a below.**

Students can transfer between the BSc and MSci programmes up to the end of year 3; low numbers (fewer than 10 per year) and inconsistent trends make it difficult to draw conclusions regarding gender disparity. However we will also consider actions later to ensure that women are fully informed about this opportunity (Action 4.1.1b).

		15/16			16/17			17/18		
		F	M	%F	F	M	%F	F	M	%F
BSc	Applications	450	671	40%	370	533	41%	498	681	42%
	Offers	367	492	43%	330	456	42%	443	598	43%
	Acceptances	103	153	40%	107	138	44%	177	183	49%
	Offers/Applications	82%	73%		89%	86%		89%	88%	
	Acceptances/Offers	28%	31%		32%	30%		40%	31%	
MSci (4 year UG)	Applications	69	177	28%	74	164	31%	71	182	28%
	Offers	67	168	29%	72	157	31%	64	169	27%
	Acceptances	17	48	26%	21	45	32%	14	47	23%
	Offers/Applications	97%	95%		97%	96%		90%	93%	
	Acceptances/Offers	25%	29%		29%	29%		22%	28%	

Table 4.1.1. Undergraduate applications, offers and acceptance rates by gender for academic years 2015/16, 2016/17 and 2017/18.

Undergraduate Attainment

Table 4.1.2 provides data on undergraduate degree attainment by gender, divided by BSc and MSci programmes. Even though there are fewer female than male BSc students, more than half of the 1st class BScs are awarded to women. In recent years (2014/15 onwards) female students received a higher proportion of 1st class degrees across most cohorts (the exception being a very small 2014/15 MSci group). There does not appear to be a grade attainment gap at the expense of women.

		14/15			15/16			16/17		
		F	M	% F	F	M	% F	F	M	% F
BSc	1st	36	23	61%	43	38	53%	41	35	54%
	2.1	25	20	56%	17	33	34%	20	32	38%
	2.2	6	23	21%	9	11	45%	14	19	42%
	3rd/Pass	5	5	50%	1	4	20%	1	3	25%
	Total	72	71	50%	70	86	45%	76	89	46%
%1st		50%	32%		61%	44%		54%	39%	
MSci (4 year UG)	1st	2	28	7%	8	18	31%	10	18	36%
	2.1	5	5	50%	1	3	25%	1	9	10%
	2.2	1	4	20%	1	1	50%	1	2	33%
	3rd/Pass	0	0	-	0	0	-	0	0	-
	Total	8	37	18%	10	22	31%	12	29	29%
%1st		25%	76%		80%	82%		83%	62%	

Table 4.1.2. Undergraduate degree attainment by gender separating by programme for 2014/15, 2015/16 and 2016/17.

Undergraduate Students: Summary of Issues and Actions

Overall, Figure 4.1.1, Tables 4.1.1-2 highlight that the key gender disparity issue at undergraduate level is recruitment to the MSci programme, predominantly via lower application rates. As discussed later, the MSci is a key part of the academic career pipeline, so the disparity is an issue for concern.

Our strategy to address the gender disparity will be two-pronged. First, to increase female MSci applications, we will organise MSci-focused activities at each University Open Day in the cycle.

Action 4.1.1: MSci Recruitment and Inward Transfers

(a) Enhance Open Day activities to improve the prominence and understanding of the MSci programme, particularly emphasising female participation and success through this route (e.g. videos, talks, posters).

Second, we know that individual mentoring can be highly effective in encouraging BSc to MSci transfers:

“For me the decision was helped by the staff in the department who helped me to know my options and encouraged me about my ability.”

Female BSc-to-MSci transferee

(b) Institute a mentoring group for female undergraduates led by female staff and PhD students, with termly lunches funded by the School. Target the group to high-performing (via end of year class list) female BSc students, but keep open to all students and staff. Topics of discussion will include the MSci degree, further study, and opportunities such as London Mathematical Society Undergraduate Research Bursaries.

(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.

Postgraduate Taught Composition

The School offers three postgraduate taught programmes (PGT), all started in 2012-2013, which together admit between 55-75 students a year.

All programmes are offered on a one-year full-time basis.

The proportion of women on our PGT programmes has been somewhat higher than Russell Group and UK universities averages (Figure 4.1.2, Table 4.1.3).

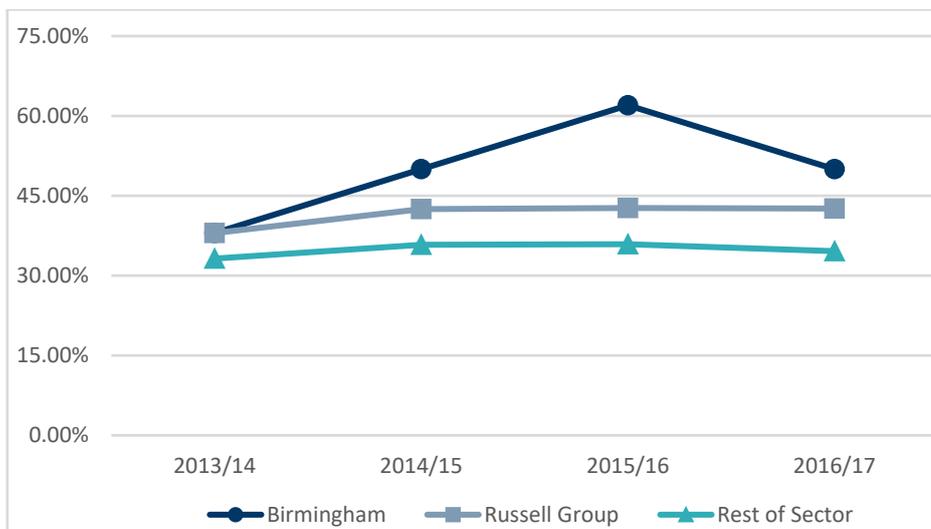


Figure 4.1.2. Female PGT in mathematics as a proportion of all PGT students in mathematics [FPEs - HESA data].

	14/15			15/16			16/17		
	F	M	%F	F	M	%F	F	M	%F
All MSc	26	29	47%	35	23	60%	34	37	48%

Table 4.1.3. PGT enrolment by gender for the academic years 2014/15-2017/18 [central University data].

Postgraduate Taught Admissions

The proportion of women and men applicants to PGT programmes is consistently close (Table 4.1.4: 43-45%F), and there does not seem to be a gender aspect to offer or acceptance rates (dark highlighted rows).

	15/16			16/17			17/18		
	F	M	%F	F	M	%F	F	M	%F
Applications	178	233	43%	200	244	45%	195	242	45%
Offers	94	109	46%	121	128	49%	92	95	49%
Acceptances	37	27	58%	67	71	49%	57	54	51%
Offers/Applications	53%	47%		61%	52%		47%	39%	
Acceptances/Offers	39%	25%		55%	55%		62%	57%	

Table 4.1.4. PGT applications, offers and acceptance rates by gender for academic years 2015/16-2017/18 [central University data].

Postgraduate Taught Attainment

Data from recent years (2015/16 and 2016/17) suggests that an MSc distinction attainment gap may be emerging (Table 4.1.5, highlighted row; Figure 4.1.3). One possibility is that women are less comfortable seeking assistance from their project supervisors, another is that among the large overseas PGT cohort, students may become isolated from peers they can work with, motivating Action 4.1.2 below.

	14/15			15/16			16/17		
	F	M	% F	F	M	% F	F	M	% F
Dist.	9	11	45%	12	11	52%	11	15	42%
Merit	10	12	45%	15	4	79%	13	8	62%
Pass	5	7	42%	7	5	58%	11	11	50%
Total	24	30	44%	34	20	63%	35	34	51%
% Dist.	37%	37%		35%	55%		31%	44%	

Table 4.1.5. PGT degree completion by gender for the academic years 2014/15-2017/18 [central University data].

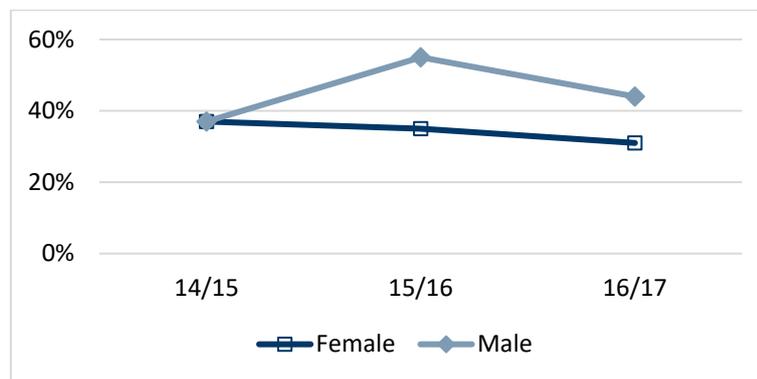


Figure 4.1.3. PGT distinctions by gender, 2014/15-2016/17.

Action 4.1.2: PGT attainment gap

(a) Organise an annual early-summer social event to help all PGT students get to know their supervisors.

(b) Introduce a women's peer support group focused on the PGT cohort.

(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.

Postgraduate Research Composition

The School offers two postgraduate research (PGR) degrees, the 1-2 year MRes and a 3-4 year PhD, with around 45 students. These degrees can be taken part time, however all PGRs have been full time since 2013.

Overall, the proportion of women PGRs is comparable to Russell group and UK universities averages (Figure 4.1.4), although there is a downward trend in recent years.

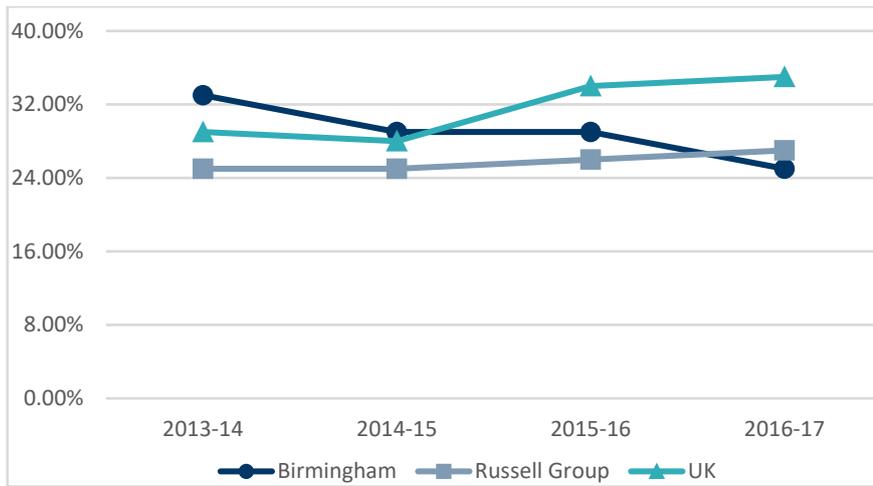


Figure 4.1.4. Female PGR, as a proportion of all PGR for academic years 2013/14-2016/17 [FPEs - HESA data].

Focusing on Home/EU students, **the proportion of women drops significantly** (Table 4.1.6: 21%F, 20%F, 14%F for PhD; MRes numbers small for both genders).

		14/15			15/16			16/17		
		F	M	% F	F	M	% F	F	M	% F
Home/EU	MRes	0	1	0%	0	1	0%	1	1	50%
	PhD	6	22	21%	5	20	20%	4	24	14%
Overseas	MRes	0	0	-	0	0	-	1	0	100%
	PhD	6	11	35%	5	8	38%	4	9	31%

Table 4.1.6. Postgraduate research student numbers by gender, separated by fee status for academic years 2014/15-2017/18 [central University data].

Postgraduate Research Admissions

Admissions data (Table 4.1.7) reveals a moderate disparity at the applications stage (27-36%F for PhD). This gap then grows at the offer stage (21-25%F for PhD; MRes numbers small for both genders) and generally further grows at acceptance (11-24%F for PhD).

Therefore there is a **gender aspect to PhD admissions at every stage of the process** (Action 4.1.3).

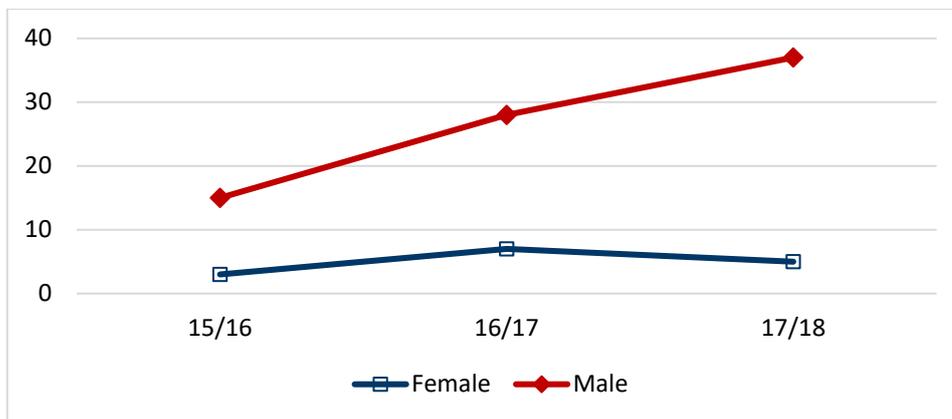
		15/16			16/17			17/18		
		F	M	%F	F	M	%F	F	M	%F
MRes	Applications	8	18	31%	7	15	32%	5	8	38%
	Offers	1	2	33%	5	3	63%	1	2	33%
	Acceptances	0	1	0%	3	2	60%	1	2	33%
	Offers/Applications	13%	11%		71%	20%		20%	25%	
	Acceptances/Offers	0%	50%		60%	67%		100%	100%	
PhD	Applications	26	46	36%	25	58	30%	24	65	27%
	Offers	6	18	25%	10	34	23%	8	30	21%
	Acceptances	2	10	17%	2	16	11%	4	13	24%
	Offers/Applications	23%	39%		40%	59%		33%	46%	
	Acceptances/Offers	33%	56%		20%	47%		50%	43%	

Table 4.1.7. PhD and MRes applications, offers and acceptance rates by gender, for the academic year of cohort entries 2015/16-2017/18 [central University data].

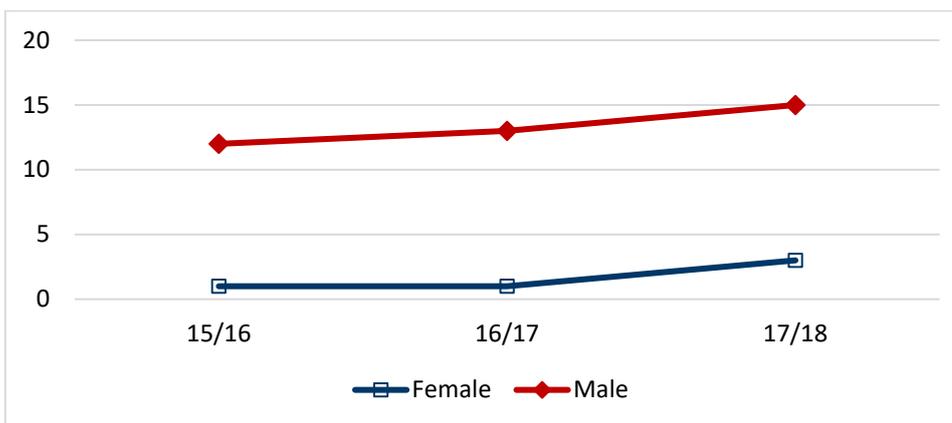
Postgraduate Scholarships

Figure 4.1.5 summarises data on applications, offers and acceptances for EPSRC and University-funded PhD scholarships (fees paid plus a £15K p.a. stipend, and are mainly available to home/EU students); offer and acceptance rates are shown in Table 4.1.8. **There is a clear and consistent gender disparity year-on-year which begins at the application stage.**

(a) Applications



(b) Offers



(c) Accepted offers

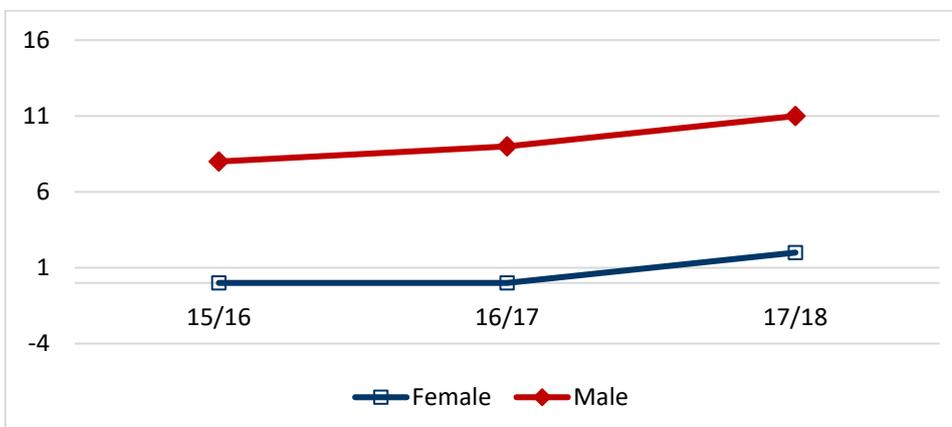


Figure 4.1.5. (a) Applications, (b) offers and (c) accepted offers for PhD places by gender 2015/16 to 2017/18 [School data].

	15/16			16/17			17/18		
	F	M	%F	F	M	%F	F	M	%F
Applications	3	15	17%	7	28	20%	5	37	11%
Offers	1	12	15%	1	13	17%	3	15	11%
Acceptances	0	8	0%	0	9	0%	2	11	8%
Offers/Applications	33%	80%		14%	46%		60%	41%	
Acceptances/Offers	0%	67%		0%	69%		66%	73%	

Table 4.1.8. Scholarship applications, offers and acceptance rates by gender, for the academic year of cohort entries 2015/16-2017/18 [School data].

One route to address the scholarships disparity is to increase the number of applicants from our own solid cohort of 1st class female MSci students (Table 4.1.2). It may be with encouragement and individual mentoring, more female MSci students would apply for PhD places.

“I was inspired and encouraged to apply for a scholarship by lecturers at Birmingham who have been very supportive. Without their support I don't think I would have applied or got the offers I have.”

Female UG student

We will ensure that encouragement takes place systematically among female MSci students (Action 4.1.3b below). To ensure that our measures are not just academic-career focused, we will also modify our current careers support to ensure that all female students are encouraged to make the right job applications for them.

Postgraduate Attainment

Table 4.1.9 shows that research degree completion rates are generally high. While numbers are small, if anything women are more likely to complete their studies than men.

	10/11			11/12			12/13			
	F	M	% F	F	M	% F	F	M	% F	
MRes*	Completed	1	1	50%	0	1	0%	0	2	0%
	Non-completed	0	0	-	0	2	0%	0	0	-
	Completion rate	100%	100%		-	33%		-	100%	
PhD	Completed	3	11	21%	7	14	33%	0	11	0%
	Non-completed	0	3	0%	0	1	0%	1	0	100%
	Completion rate	100%	79%		100%	93%		0%	100%	

* MRes includes discontinued MPhil programme

Table 4.1.9. Postgraduate research degree completion by gender by academic year of cohort entry for 2010/11-2012/13.

Postgraduate Research Students: summary

There is a growing gender aspect at the applications, offers and acceptances stage, for both PGR admissions and scholarships, and predominantly affecting the home/EU cohort. Measures implemented after our 2017 application include introducing unconscious bias training and more gender balanced panels. There is a small amount of encouragement in the slight upturn in Figure 4.1.5 for the 2017/18 cohort, but a long way to go, motivating Action 4.1.3.

Action 4.1.3: Recruitment of women to PGR programmes

- (a) Establish an SAT Working Group focussed on best practice in postgraduate recruitment. This group will redevelop all School activities related to recruitment of PhD students (e.g. advertising, webpages, interview processes, post-offer visits) and implement by summer 2019.**
- (b) Increase the proportion of female applications for PhD scholarships from within the undergraduate cohort through targeted mentoring.**
- (c) Organise an annual PGR prospects event aimed at external female applicants.**

(v) Progression pipeline between undergraduate and postgraduate student levels

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

Figure 4.1.6 shows female student proportions declining from BSc through to PhD. Though we have good gender diversity in our incoming student body, far more women than men choose to graduate with a BSc after three years, leaving a more male biased MSci cohort. This imbalance is primarily the result of a gender discrepancy at the applications stage. The MSci gap has a consequent impact on applications for PGR scholarships by female students.

Our E+D taught student survey indicates that 35% (in 2017) and 31% (in 2018) of female respondents would consider applying for a PhD (with about 50% considering elsewhere), as compared with 47% (in 2017) and 53% (in 2018) of male respondents¹. Female offer holders are also less likely to accept a PhD offer than their male counterparts. Actions 4.1.1-4.1.3 earlier are designed to address these key student pipeline breakpoints.

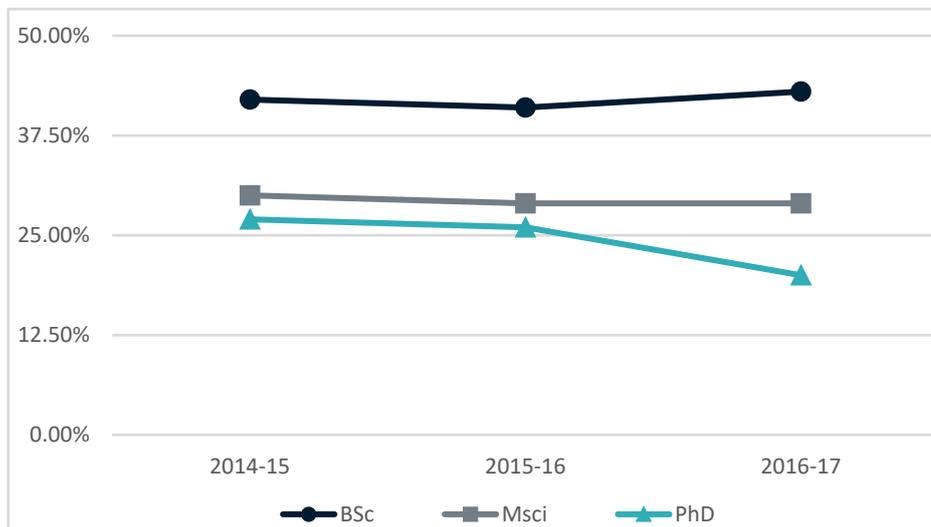


Figure 4.1.6. Female progression pipeline between undergraduate degrees in mathematics for the academic years 2014-15-2016-17 [FPEs - central University data].

¹ Above 40 respondents / gender / year.

4.2. Academic and research staff data

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

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

Over 2015-2017 the number of academic staff grew from 62 to 69. However, **the number of women declined** (Figure 4.2.1a). Among teaching and research staff, female proportions (20%, 17%, 16%) are slightly above Russell Group average (13-14% - Table 4.2.1a) but dropping below UK University average (17-18% - Table 4.2.1b). Absolute numbers are smaller for teaching-focused² and research-focused³ contract types, however **there is a disparity in female research fellows** (23%, 11%, 7% versus benchmarks of 22-23%). Teaching-focused numbers are too low to draw firm conclusions.

Investigating the progression through the academic grades, we find that female colleagues appointed around 2011-13 are being promoted, **however all incoming Lecturers since are male** (Figure 4.2.1b – compare L and SL female numbers and Figure 4.2.2). In 2017 there was only one female Professor out of 13 in the school. An additional female Professor was recruited in 2018 and has been given resource (2 permanent posts) to establish a group, however **we recognize the significant disparity at the senior career stage**.

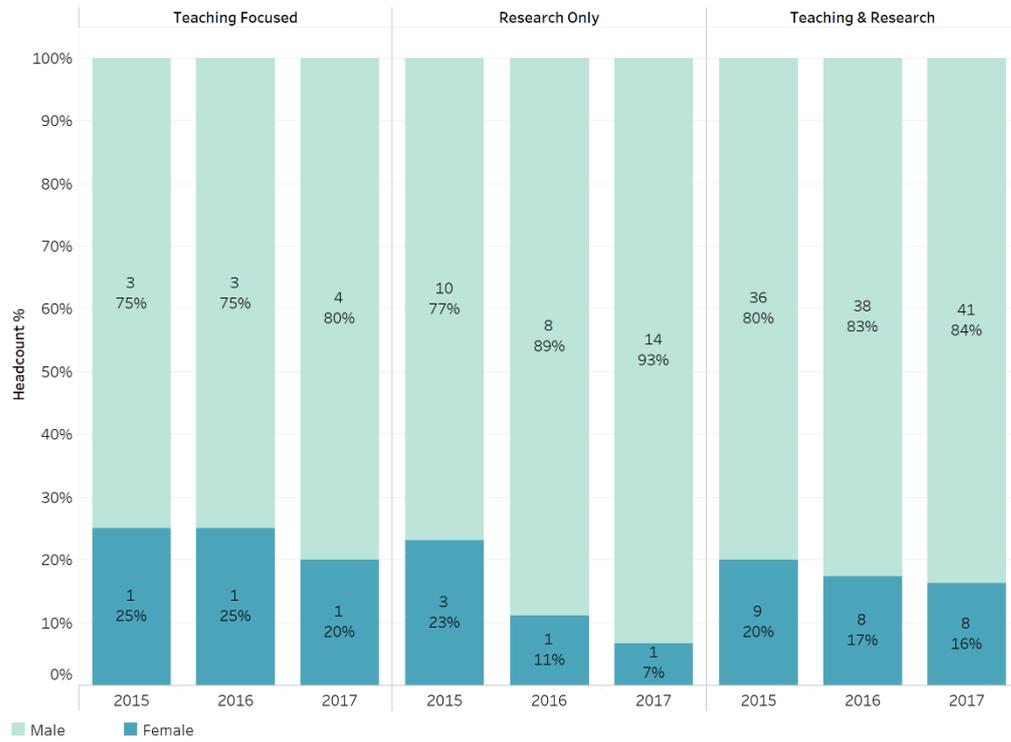
Actions related to recruitment, career development and promotion of women to address these issues are given later following further analysis (Actions 5.1.1, 5.1.3, 5.3.1-3).

² Note our classification of teaching-*focused* rather than teaching-*only*, emphasising that all staff have some contractual provision for research and scholarship.

³ As part of their academic development, research fellows may be given the opportunity to deliver high-level lectures or supervision; this is not a contractual obligation.

(a)

4.2.i Academic Staff by Contract Focus



(b)

4.2.i Academic Staff by Grade

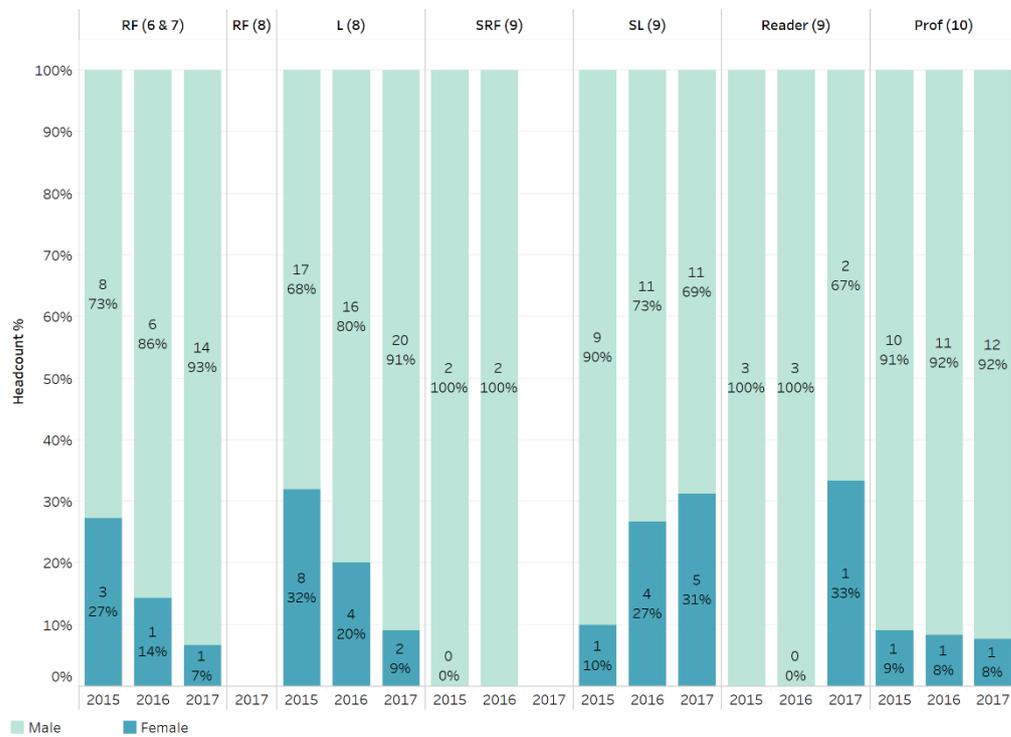


Figure 4.2.1. Academic staff by (a) contract focus (b) grade, for 2015-2017 [FPEs - central University data].

(a)

	2014/15			2015/16			2016/17		
	F	M	%F	F	M	%F	F	M	%F
Teaching-only	85	185	31%	85	205	29%	115	235	33%
Research-only	160	585	21%	160	610	21%	165	585	22%
Teaching and Research	185	1235	13%	195	1260	13%	210	1300	14%
Total	430	2005	18%	440	2075	17%	490	2120	19%

(b)

	2014/15			2015/16			2016/17		
	F	M	%F	F	M	%F	F	M	%F
Teaching-only	400	715	36%	395	725	35%	410	720	36%
Research-only	205	695	23%	200	735	21%	215	705	23%
Teaching and Research	435	2090	17%	460	2125	18%	470	2165	18%
Total	1040	3500	23%	1055	3585	23%	1095	3590	23%

Table 4.2.1. Total academic staff numbers in (a) Russell Group and (b) UK universities by gender and contract focus for academic years 2014/15-2016/17 [FPEs – HESA data].

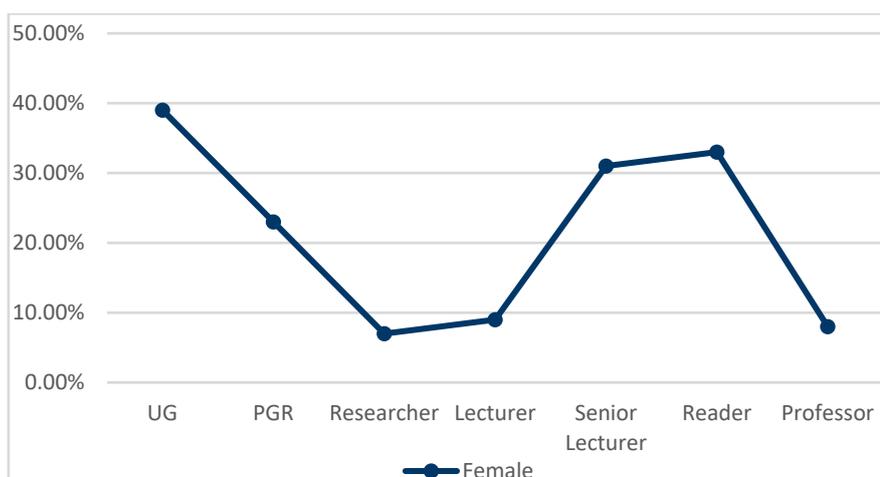


Figure 4.2.2. Female career pipeline in mathematics for academic year 2016/17 [FPEs – central University data].

(ii) Academic and research 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.

Figure 4.2.3 breaks staff numbers down by fixed-term and open-ended contracts. The only contributions provided on zero-hours or as-needed contracts are teaching by PGR students as part of their academic development (gender balance reported in Section 4.1). Contract type corresponds closely to the grade and function, with all grade 7 and research-focused grade 8/9 staff being fixed-term (supported by either a research grant or a temporary teaching vacancy) and almost all other staff being open-ended (with the exception of one male fixed term Lecturer, recently made permanent). There is no evidence of gender bias in contract type or issues further than those discussed in 4.2.i.

4.2.ii Academic Staff by Grade & Contract Type

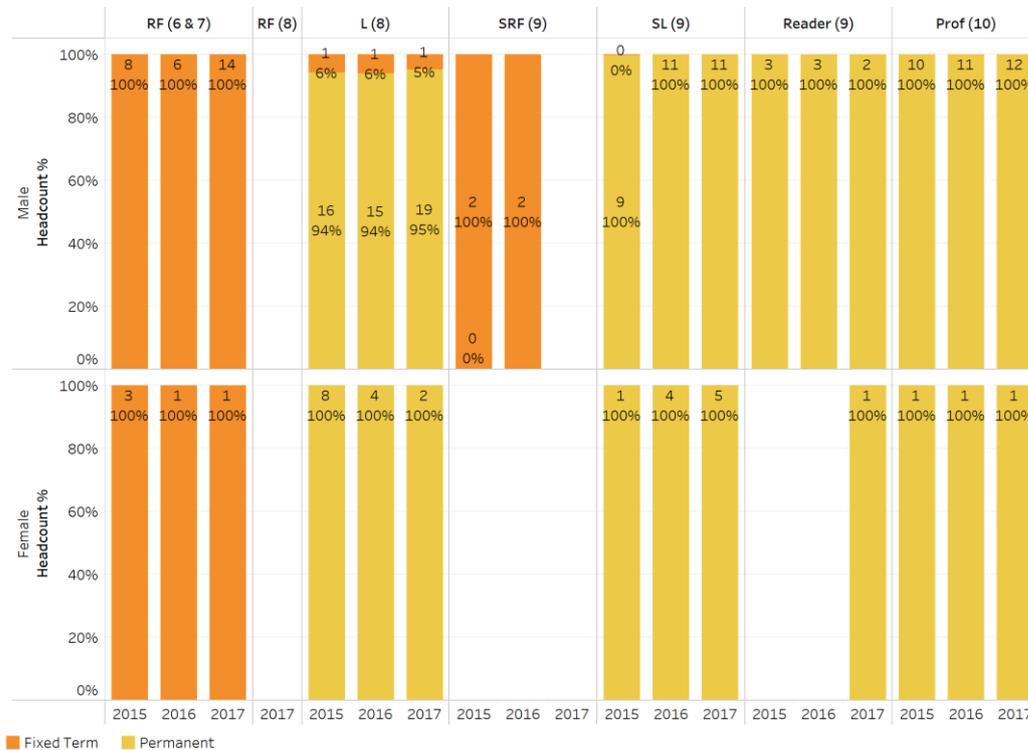


Figure 4.2.3. Academic staff by grade, contract type and gender for 2015-2017 [FPEs-central University data].

The University has an HR-administered redeployment policy to help to ensure continuity of employment for fixed-term staff. Staff identified as at risk of redundancy are immediately eligible to apply for posts under their redeployment period (a minimum of three months). All posts are advertised on the redeployment website for a week prior to general advertising. HR supports redeployment candidates throughout the period by providing advice on applications and interview practice where requested. If they apply for a role, redeployment candidates have priority if they are deemed suitable (possibly

after a period of retraining) by the selection panel; unsuccessful candidates have a right of appeal. For example, a Teaching Fellow in the School nearing the end of a fixed-term contract was redeployed to a 4-year Research Fellow position in 2016.

(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.

There has been a high retention of staff; only 10 staff left (8M, 2F; Table 4.2.2). There does not seem to be a gender aspect.

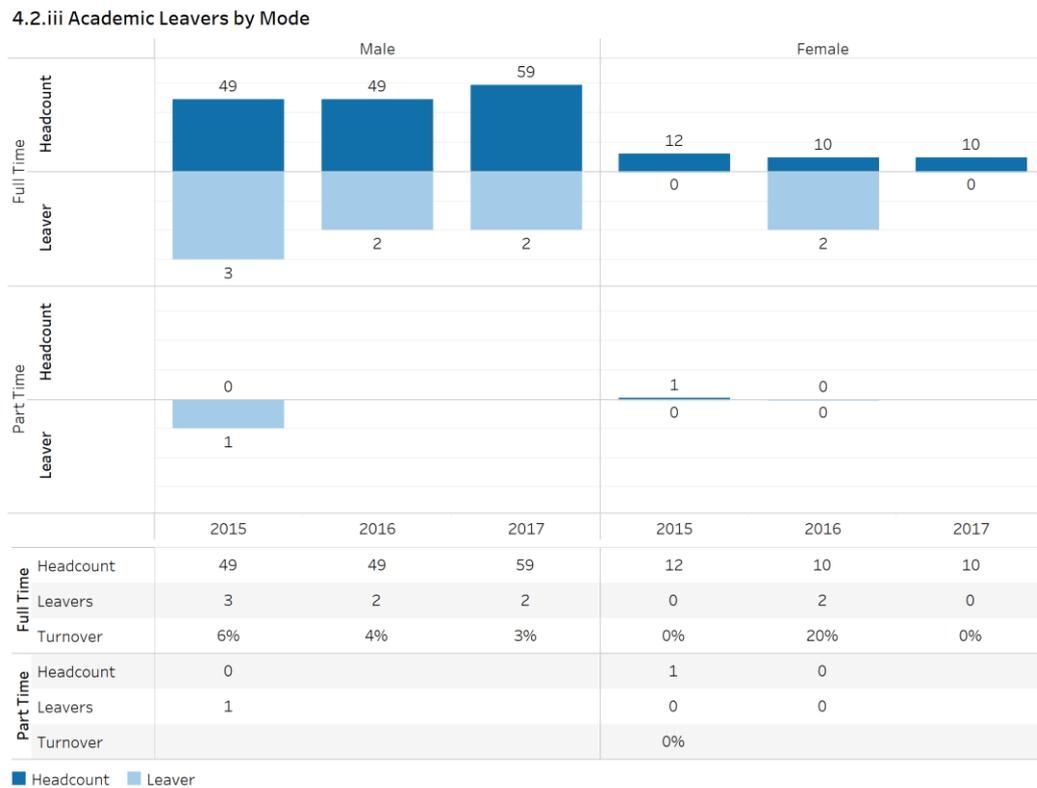


Table 4.2.2. Academic leavers by full-time/part-time and gender for years 2015-2017 [FPEs-central University data].

Research fellow leavers

During 2015-17, three research fellows (1F, 2M) resigned before the end of their contracts; two of them (1F, 1M) took up academic posts at other institutions but we do not have data on the other individual. While the School has a formal exit interview procedure for collecting this information, it is not consistently implemented.

Action 4.2.1: Implement exit interviews

All leavers to receive exit interviews by their line manager, collected by HoS office, reviewed annually by the DoE+D to determine if there are any issues which need reporting back (anonymised) to the wider SAT, paying particular attention to gender issues.

Research fellows in the School have moved on to career destinations in both academia and industry. The self-assessment process has highlighted that there is limited ongoing information on their satisfaction with career mentoring from PIs and the College researcher development scheme.

Action 4.2.2: Limited information about postdoctoral career mentoring

Create an annual researcher career development questionnaire and review responses, paying particular attention to gender issues.

Permanent staff leavers

Five full-time permanent academic staff left 2015-17 (1F, 4M). Four out of five left for personal/family reasons (1F), and one male Lecturer passed away in service. One part-time (male) academic who resigned is now employed as a Reader in a different role. There does not appear to be a gender aspect to permanent staff leavers.

[1993 words]

5. SUPPORTING AND ADVANCING WOMEN'S CAREERS

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

5.1. 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.

Recruitment data for fixed-term academic appointments is displayed in Table 5.1.1; these positions are mainly research fellows. Female applications are below our female PGR levels (Table 4.1.6), indicating that qualified women are less likely to apply for a research position; shortlisting, however, appears unbiased. There is a significant drop-off from shortlisting to appointment, with males approximately twice as likely to be appointed as females. Similar discrepancies affect both fixed-term and permanent appointments and therefore are discussed together below.

	2015			2016			2017		
	F	M	%F	F	M	%F	F	M	%F
Applications	10	44	19%	22	74	23%	29	116	20%
Shortlisted	4	14	22%	3	10	23%	4	24	14%
Appointed	1	7	14%	0	3	0%	1	10	10%
Shortlisted/ Applied	40%	32%		14%	14%		14%	21%	
Appointed/ Shortlisted	25%	50%		0%	30%		25%	42%	
Appointed/ Applied	10%	16%		0%	4%		3%	9%	

Table 5.1.1. Fixed-term academic staff applications, shortlisted and appointed rates by gender for 2015, 2016 and 2017 [FPEs-central University data].

Recruitment data for permanent academic appointments (excluding University-managed Birmingham Fellows) is displayed in Table 5.1.2. Offer and acceptance rates are not recorded (Action 5.1.1d). Female application levels start low, and decline further at both shortlisting and appointment stages. **No permanent female appointments were made in 2013-2017.** In 2018 we recruited a female Professor; no other female staff have been appointed in 2018.

Since 2016 we have been proactively approaching qualified female candidates to apply for open positions. Four offers have been made, two each at Lecturer and Professor level; all offers were unfortunately declined for confidential personal reasons. We have not identified any gender aspects to their decisions.

	2015			2016			2017		
	F	M	%F	F	M	%F	F	M	%F
Applications	28	130	18%	41	170	23%	41	177	20%
Shortlisted	1	7	13%	2	9	23%	2	8	14%
Appointed	0	1	0%	0	4	0%	0	4	0%
Shortlisted/ Applied	4%	5%		5%	5%		5%	5%	
Appointed/ Shortlisted	0%	14%		0%	44%		0%	50%	
Appointed/ Applied	0%	1%		0%	2%		0%	2%	

Table 5.1.2. Permanent academic staff applications, shortlisted and appointed rates by gender for 2015, 2016 and 2017 [FPEs-central University data].

Our interpretation is that there are two key contributing factors to this recruitment deficit: failure to reach and inspire qualified women to apply, and subtle unconscious biases and unidentified disadvantages within the post application/interview process. Whilst all interviewers must have completed mandatory unconscious bias training to sit on a panel, and interviews for permanent staff must include at least one female academic from the School, other aspects of good practice are applied inconsistently. This is particularly pertinent for research fellow recruitment, usually led by the employing grant PI who may have limited relevant experience.

Some recent strategies to tackle these issues have led to improved diversity within our appointments:

“The School posted the Job Advert on the ‘Out In Math’ Facebook group, reaching openly LGBT+ identified mathematicians...this made me feel like I could be my authentic self as opposed to other positions where I felt less confident... Moreover, throughout the interview process, I felt like my status as an openly queer mathematician was met with respect.”

Queer Lecturer appointed 2018

“I contacted the School expressing my interest in applying for a position. Throughout the process I felt supported and welcomed, giving me the opportunity to achieve the best possible outcome for myself.”

Female Professor appointed 2018

These positive comments, and concerns around inconsistent practice, motivate:

Action 5.1.1: Recruitment of female academics

(a) Form a Working Group to develop and implement two Recruitment Best Practice guides (Research Fellows and Permanent staff) for recruiters. Guides to be accessible to all staff through the staff wiki and sent to all recruiters when a position is approved for recruitment. Best practice guides to target all elements of recruitment from applications through to acceptances e.g. standard advert text, distribution to Women in Maths lists/social media groups, named female contact on advert, Skype longlisting, female presence on interview day etc.

(b) (Continuing action) target selected female academics (e.g. through Fellowship lists) to invite to apply for permanent posts, including inviting potential applicants informally for seminars to introduce them to the School prior to recruitment processes beginning.

Create an externally-facing section of the website emphasising the family-friendly and inclusive culture of the School, targeted at potential applicants.

(c) Institute DoE+D sign off on all advertising materials and interview processes.

(d) Begin internal School-level tracking of offer and acceptance decisions for academic posts to provide more information on where the process is failing to appoint women.

(e) Head of School to report annually on the gender proportions of the staff body and the implications of an imbalanced staff cohort to the whole School.

(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.

New academic staff are welcomed on their first day by a professional services colleague, who provides essential health and safety information, a tour of the building, an “induction checklist” and a copy of the School Staff Handbook. New staff can also attend a University-wide induction event (run monthly), providing information about University services and the opportunity to meet colleagues from other Schools.

The Director of New Staff (DoNS) is responsible for integration of new academic staff at Lecturer grade, in particular managing the probation process to ensure a consistent approach. This senior role was formally introduced in 2012, and is currently held by a female Senior Lecturer. All new permanent staff meet with the HoS, the DoNS and (where appropriate) their allocated mentor within their first few days.

The DoNS and probationer agree a three-year Probationer's Personal Development Plan (PPDP), as well as identifying research and teaching mentors who can advise them career development. The emphasis is on support, professional development and training activities to help the probationer achieve their (SMART) objectives. Subsequent annual reviews discuss progress and, where appropriate, adjust objectives. The final meeting focuses on career aims over future years, and a recommendation about successful completion, extension or, exceptionally, failure of probation is made.

Probation objectives may be adjusted where appropriate to ensure fair treatment, for example in the instance of any significant leave. We do not formally review the effectiveness of the process, however speaking to recent probationers indicates that they are generally happy. Unfortunately there are no female staff currently on probation (see above), and thus no gender bias can be investigated.

There is no consistent induction/support process for fixed-term or senior (non-probationary) permanent members of staff.

“As an incoming senior member of staff, I did not have a formal School level induction process. This has meant I am not always aware of the processes, procedures and timelines within the School, and have had to disturb other staff to ask. Everyone has been very helpful and assisted me when needed.”

Female Professor appointed 2018

These issues are exacerbated as the Staff Handbook is not a dynamic document; staff receive a hardcopy on their first day which is not updated as processes evolve.

Action 5.1.2: Induction and support

- (a) Expand DoNS role to include overseeing induction processes for Research Fellow and senior appointments. Provide mentors/advisors for new senior staff.**
- (b) Form a Working Group to develop suitable induction processes for Research Fellows.**
- (c) Staff Handbook to be developed into the School wiki, a dynamic online resource available to all staff, particularly assisting new staff with the transition into the School.**
- (d) Evaluate the effectiveness of induction processes through targeted surveys/focus groups.**

(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.

The criteria for promotion to Senior Lecturer can be summarised as recognised sustained excellence in two out of three of research, teaching and administration, with competence across all areas. The criteria for promotion to Reader/Chair are leadership in research or pedagogy, academic citizenship and international profile. (More details online⁴.) Career breaks of six months or more are taken into account through a proportionate reduction in quantity, but not quality, of expected achievements.

The HoS discusses promotion aspirations and the working of the process during the confidential Performance and Development Review (PDR). The School Promotion Committee (SPC) reviews all academic staff annually to determine who should be encouraged to apply in the next round.

When the College initiates the annual promotions cycle, the HoS invites colleagues to express an interest, and appoints a Promotions Mentor to work closely with the applicant and HoS to prepare the documentation.

“During my successful recent application... I received excellent advice from my mentor. My mentor had served on the University’s promotion panel and the first draft of my CV and application form were read very carefully and were much improved as a result. I was also given extensive advice from others in the School about what to expect at interview. The help was invaluable.”

Recently promoted male Professor

In cases where an application is deemed to be premature by the SPC, the Mentor and HoS work closely to ensure appropriate advice and guidance is given. The DoE+D is a member of the Promotions Committee and works closely with the HoS to ensure E+D issues are considered when identifying and supporting candidates.

Table 5.1.3 gives promotions data for the last three academic years; data are for the full process, from initial application to SPC, followed by external referees, College committee, interviews (Reader/Chair only) and University committee. All staff referred to are full-time; no applications were submitted by part-time staff. The period 2015-17 was unprecedented in the School’s history, with six female promotions (five to SL, one to Reader) and a 100% female success rate. There were no applications from women in the 2017-18 session, which is consistent with our gender profile and overall application rates (typically 3-6 per year). However it is essential to ensure that the female Senior Lecturer promotions of 2015-17 are followed in the coming years by subsequent promotions to Reader and Professor (see also Action 5.3.1-3 later).

⁴ <https://intranet.birmingham.ac.uk/hr/benefits/progression/Academic-promotions.aspx>

		2015-16			2016-17			2017-18		
		F	M	%F	F	M	%F	F	M	%F
SL	Applications	3	2	60%	2	2	50%	0	2	0%
	Approved	3	1	75%	2	1	67%	0	1	0%
	Approved/Applications	100%	50%		100%	50%		-	50%	
Reader	Applications	0	1	0%	1	0	100%	0	2	0%
	Approved	0	0	-	1	0	100%	0	1	0%
	Approved/Applications	-	0%		100%	-		-	50%	
Professor	Applications	0	1	0%	0	1	0%	0	0	-
	Approved	0	1	0%	0	1	0%	0	0	-
	Approved/Applications	-	-		-	100%		-	-	

Table 5.1.3. Academic staff applications for promotions and approval rates by gender for sessions 2015-16, 2016-17 and 2017-18; SL=Senior Lecturer [School data].

There is however work to be done in improving understanding and perceptions of the promotions process. In the 2018 staff survey 84% of respondents (12/13 female; 18/22 male; 7/9 prefer not to define) agreed that the full range of an individual's skills were taken into account when considering promotion, and 67% (19/22 male; 9/13 female and 6/9 prefer not to define) indicated that they understood the promotions process and criteria within the School.

Action 5.1.3: Promotions checklist

Develop a 'promotions checklist' of indicative achievements and activities that can support applications for promotion to Senior Lecturer, Reader and Professor for use in guiding staff annual reviews.

(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.

Building upon the institutional approach adopted in 2008, staff selection for REF 2014 was based solely upon outputs quality. The vast majority of eligible staff, and 100% of women, were entered (Table 5.1.4). The School no longer holds complete information about members of staff who were eligible for submission to RAE 2008. However, again almost all eligible staff were entered including all 4 women.

	F	M	%F
REF submitted	10	30	25%
REF not submitted	0	3	0%
% submitted	100%	91%	

Table 5.1.4. REF 2014 submission data by gender.

SILVER APPLICATIONS ONLY

5.2. Key career transition points: professional and support staff

(i) Induction

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

(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.

5.3. Career development: academic staff

(i) Training

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

University-wide staff development courses are delivered by Professional and Organisational Development (POD); 42 courses are available, ranging from leadership programmes, assertiveness, grant writing, coaching and mentoring skills, unconscious bias, CV writing and presenting. Specifically for academics, the recently established Higher Education Futures Institute (HEFi) supports effective and innovative teaching. These activities have embedded evaluations; their effectiveness and uptake are monitored at University level.

As part of the University's commitment to E+D, all staff are expected to complete an online equality training programme during induction. Additionally, staff who undertake recruitment activities, or sit on promotion panels, are required to have completed a Recruitment and Selection Workshop.

Probationary staff typically undertake the 18-month Postgraduate Certificate for Higher Education (PGCertHE). The programme is accredited by the Higher Education Academy (HEA), and confers FHEA status on completion. The HEA commended PGCertHE for

"Promoting [the] opportunity for staff to build confidence and develop practical skills at an early point in their career..."

The University's Beacon Scheme supports FHEA applications by more senior staff. In 2018 three academic staff (all male) completed PGCertHE and four colleagues (1F) completed Beacon.

Subject-specific training is available externally via the 'Induction Course for New Lecturers in Mathematics' (organised jointly by several professional bodies) which new staff are supported financially to attend (2 male colleagues attended in 2018). Since 2016, all new PGRs who are involved in teaching activities attend a one-day induction workshop delivered by staff from the School.

To progress staff towards leadership roles, there are three University programmes: Emerging Leaders (2M, SL since 2016), Senior Leaders (1M, Professor) and Research Leaders (1M, SL). Recent participants have found these very valuable,

"The Research Leaders programme was a splendid opportunity to reflect on my development and expand my academic and professional connections. I believe it was very helpful with my subsequent successful promotion application and progression to a leadership role in the School."

Male Professor who attended Research Leaders 2016/17.

The School is supportive of female/BAME staff attending the national Aurora/Aditi leadership programmes designed to develop aspiring leaders from under-represented

groups. However no colleagues in the School have recently taken these courses (Action 5.3.1).

All staff can also apply for one-to-one personal development support from the Coaching Academy, with 40 qualified internal coaches.

Action 5.3.1: Awareness of leadership programmes

Add questions to the staff survey specifically aimed at female staff to investigate their awareness of and any views on all available leadership programmes. Include in the 'career development checklist' (see action 5.3.3 below) an item on these training schemes to prompt discussion in staff annual reviews.

The proportion of staff undertaking voluntary University training each year is relatively low (typically 10-20%, Table 5.3.1), although there is no consistent gender disparity. We have limited information on the reasons for the low level of uptake, and no local monitoring of effectiveness (Action 5.3.2).

	2014		2015		2016		2017	
	F	M	F	M	F	M	F	M
Staff headcount	13	44	13	49	10	49	10	59
Staff undertaking training	2	5	5	8	1	7	2	11
Training rate	15%	11%	38%	16%	10%	14%	20%	19%

Table 5.3.1. Uptake of voluntary University-level training by School staff.

Action 5.3.2: Uptake of University training

Add questions to the staff survey to obtain information on reasons for not taking up training opportunities, previous experiences of training, and areas in which training may be required. Determine whether there is any gender aspect to this.

(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.

All academic staff (permanent and fixed-term) have a University-mandated formal annual review. Probationers are reviewed through the PPDP, overseen by the DoNS, whilst non-probationary academics receive a Personal Development Review (PDR), usually with the HoS to ensure consistency. Research fellows' PDRs are carried out by their PI.

The review process is designed to support staff in their career development and provides an opportunity for a structured and productive conversation about performance and development needs including career aspirations. However, in the 2018 staff survey only 62% of respondents (13/13 female; 13/22 male; 4/9 prefer not to define) indicated they agreed with the statement "*My School provides me with a helpful annual appraisal*" (up from 47% in 2017). The decidedly equivocal view of PDRs motivates Action 5.3.3 below.

All reviewers undertake mandatory University training provided by POD before conducting PDRs or PPDPs. Guidance on both processes is available on the University intranet for reviewers to access. To ensure transparency for both the reviewer and reviewee a link to this guidance is included in emails sent to staff when the annual review period commences. Because the annual review is mandatory, uptake rates are 100% for both female and male colleagues.

(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.

Postdoctoral and early career

Training courses, career advice, funding opportunities, workshops and an annual conference are provided by the cross-college initiative PERCAT (Postdoctoral and Early Researcher Career Development and Training). The steering committee includes early career representatives from Mathematics. Upcoming and recent events include '*how to shine in fellowship and grant interviews*', an overview of PGCertHE and FHEA accreditation, and '*networking for confidence and success*'.

Probationary staff

All probationers are supported formally by the DoNS via the PPDP process, quarterly meetings with their mentor(s), and the PGCertHE described above. The School has a Grants Director who provides support to all new staff writing their first applications (typically EPSRC New Investigator), including grants workshops and detailed individual feedback on draft submissions. This support has helped to increase the grant capture of the School progressively over the period 2014-18; £1.5M has been awarded over this period as the PI's first major UK grant, the latter being an important step towards early promotion.

Established staff

A key mechanism to encourage the career development of established staff is the PDR described in 5.3(ii). To provide concrete support, CoEPS provides up to £1,000 each year per permanent staff member, in recognition of the benefit of academic involvement in international and national research activities. This fund can also be used to bring visitors to the School (assisting staff who, for example, are unable to travel for personal reasons).

In the 2018 staff survey 73% of respondents (9/13 female; 18/22 male; 5/9 prefer not to define) indicated their agreement with the statement *“I am actively encouraged to take up career development opportunities”*; this compares to 63% of respondents in 2017. The School recognises the importance to staff of participating in external activities. In the 2018 survey 64% of respondents (10/13 female; 14/22 male; 4/9 prefer not to define) indicated their agreement with the statement *“I am encouraged and given opportunities to represent my School externally and/or internally”*; this is an increase from 58% of respondents in 2017. While such trends are positive, a significant fraction of colleagues still do not believe they are encouraged and given the opportunity to undertake such activities.

Action 5.3.3: Encourage career development activities

Develop a 'career development checklist' to complement the promotions checklist, for use within all annual review meetings to ensure that opportunities for career development, and (where appropriate) external engagement, are discussed during annual review meetings. To include leadership programmes (see Action 5.3.1 above).

(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).

Significant effort has been invested in enhancing employability provision for undergraduates. 10-credit modules in Year 1 and 2 have been introduced, the latter (Mathematics in Industry, '2MI') ensuring students prepare an up-to-date CV, develop mathematical communication skills, and have the opportunity to work on an industrial project.

"Doing a CV for 2MI forced me to finally tackle my first steps on my career path."

UG Student

Such embedded provision is complemented by allocating half of the weekly tutorials in year 2 to employability (CVs, internships, assessment centres).

The Director of Employability works with the University's award winning⁵ Careers Network providing both general support and tailored Mathematics-specific guidance, including the *Maths Careers Fair* in mid-October each year, complementing wider College and University events. In recent years, *Hire STEM Women*, a company that targets women for employment in STEM jobs, attended the Maths Careers Fair, as well as visiting on separate occasions. We support MathSoc to run its own employability event in November each year. The impact of these events is being noted by students themselves.

"Careers fairs, run by both the uni and home School have been very helpful".

UG Student 2018

Other events are organised *ad hoc*, for example a female alumna gave a talk about her career at the Guardian. We have found that badging as 'career talks' rather than 'Women in maths' leads to far higher engagement. A Postgraduate Open Day is held to provide information for students interested in PGT/PGR programmes.

UG and PGT students have termly tutorial progress reviews, which include a question on career planning. A gender aspect appears to exist regarding students' perceptions of the usefulness of progress review for careers both within and outside academia (Table 5.3.2).

Progress reviews are useful to explore options for...

	2017		2018	
	F	M	F	M
further study	59%	66%	62%	77%
careers outside university	51%	60%	48%	48%

Table 5.3.2. Student views on the usefulness of progress reviews regarding career development by gender.

⁵ University of the Year for Graduate Employment in The Times and The Sunday Times Good University Guide 2015-16

This issue has been subject to continuing action, for example requiring tutors to discuss with high-performing BSc students potential transfer to the MSci programme. Further action is clearly required.

Action 5.3.4: Enhancing taught student career development

- (a) Organise a School Away Day focused on student career development and producing strategies to improve consistency of advice and best practice.**

To test a potential way forward in encouraging female students to consider further study and careers, a *Women in Maths Party* was held in March 2018, attended by approximately 20 students and female members of staff.

"I am now very excited to perhaps move over to the 4th year course".

Participant in Women in Maths Party

The event will now become a core part of the School's student provision, becoming a termly event.

Action 5.3.4: Enhancing taught student career development

- (b) Organise termly Women in Maths Parties to enable female students to network, talk to female staff, and share concerns and suggestions for improvement.**

PGR students are supported by the annual Development Needs Analysis (DNA) process, which is designed around Vitae's Researcher Development Framework. The DNA guides PGRs to consider the transferability of the skills they are gaining, reflection on the knowledge and skills needed for their future career – whether in academia or otherwise – and how to identify relevant development opportunities and an action plan agreed with their supervisor. This plan may involve taking specific workshops from a list of over 50 provided by the University Graduate School (e.g. Career Planning, Getting Published). Progress on the action plan is reviewed the following year.

The School also holds ad hoc events in relation to PhD career planning. For example, a 2016 career skills roundtable discussion for around 30 students was held as part of the Birmingham Student Combinatorics Day (open to students in all groups). A mixed gender staff panel (1F, 2M) discussed how best to achieve a career in academia, in particular the next steps towards a postdoctoral position. Other relevant events include 1-day early career conferences and evening talks hosted in collaboration with mathematical professional bodies (IMA, LMS).

Several issues have been identified via the PGR survey and Student-Staff Committee, particularly with regards to teaching allocation and career support. For example, all students in 2017 and all except one male student in 2018 felt 'supported in their career development by their supervisor', however only 50% (3/4F, 5/14M, 3/4 prefer not to define) of students in 2017 felt they were 'supported by the School'. Consequently, for 2017/18 more care was taken over balancing and appropriateness of teaching allocation

(an academic was made responsible for this); in the 2018 PGR survey, 89% of respondents (2/3F, 13/14M, 2/2 prefer not to define) indicated they felt supported by the School. However, further action is warranted to sustain this improvement.

Action 5.3.5: Postgraduate career support

Redevelop current School arrangements for PGR career support, e.g. training sessions on applying for fellowships, industry talks.

(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.

All staff have access to resources provided via the Research Concordat and 'Birmingham Researcher' framework to support them in identifying research funding, making grant applications and managing awards. This includes a funding guide, a funding opportunities resource and access to the Research and Innovation Services team for support through the pre-application process.

Within the School, the Grants Team is led by the Grants Director and includes the Heads of Research Groups (HoG) and a senior Research and Knowledge Transfer Manager (R+KTM) within the College. A recent Staff Development Event (May 2018) included representatives from the Engineering and Physical Sciences Research Council (EPSRC) to discuss the application process and peer review. A specialist University team provides support for EU funding.

Support for probationers is described above (5.3(iii)); grant applications from established staff are internally reviewed by HoG and other colleagues. All applicants have support from the R+KTM with costings, application formatting and Pathways to Impact. Fellowship applicants are provided with mock interviews; this support has contributed to several major awards including four ERC grants (2F) and four EPSRC Fellowships (1F). In 2017/18 the School secured £3.9M in new awards across around 50 teaching and research FTE.

Unsuccessful applicants are encouraged to discuss their application and feedback with their research mentors and HoG with the aim of improving future applications. This advice is provided sensitively, and led by experienced applicants, who are aware of the challenges and complexities of competitive funding bids. We are not aware of any gender-based discrepancies in grant success; roughly half of applications made with a female PI in recent years have been successful, and the most successful grant-holder is female.

"I was supported through the application by senior colleagues in the School, as well as in the College more widely. My head of group read drafts of my application. She provided advice in the follow-up stages of the application... the Director of Research and other staff members organised two mock panels prior to my Fellowship interview; this was of tremendous help."

Male Early Career Fellowship Awardee 2018

SILVER APPLICATIONS ONLY

5.4. 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?

(vi) 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.

(ii) 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.

5.5. Flexible working and managing career breaks

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

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

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

Information on parental and adoption leave policies (especially leave and enhanced pay entitlements) are available online. In the last two years, the School has adopted a more formal arrangement to support academics before maternity/adoption leave. The DoE+D begins informal conversations regarding return to work policies, and to discuss their 'ideal' teaching and administrative duties upon return. The colleague, DoE+D and HoS then meet to formalise arrangements. This process is designed to ensure staff have a clear picture of their duties upon return, a better understanding of the policies and available options, and consistent treatment across all staff.

Prior to going on maternity leave the University recognises that flexibility sometimes makes a lot of difference in helping staff to balance the demands of work and personal life and so flexible working may be beneficial (see 5.5(vi)). Cover can be arranged to ensure that colleagues (both Academic and PS) are able to attend medical appointments.

We do however recognise that this approach is initiated once leave is expected; it would be better still to ensure that staff understand this support well in advance of it being needed.

Action 5.5.1: Consistent awareness of parental leave policies

Produce a parental leave guide on the School wiki which is readily accessible to all staff; include a question in staff survey to assess awareness.

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

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

The School appoints a fixed-term staff member on a (teaching-focused) contract to cover teaching during maternity/adoption leave without overloading other members of staff; this cover is centrally-funded. Similarly, leave of a PS colleague will be covered by a temp.

Staff on maternity/adoption/shared parental leave can make use of up to 10 'Keeping in Touch' days, during which they can undertake work, training or any other work-related activity. For example, an Academic recently used these days to attend a workshop she had organised prior to her leave, and a PS colleague for new systems training. Staff are of course welcomed back to the department should they wish to visit, for example to the weekly coffee morning.

(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.

Academics on 3-legged contracts (teaching, administration and research) can opt in to reduce their teaching or administrative workload for their first term back. This is a centrally-funded University initiative intended to enable staff to regain their research momentum. The School extends this further to a term of study leave following maternity/adoption leave, and a low teaching and administrative load during the following term. As noted in 5.5(i), prior to going on leave, staff will have a clear picture of what their duties will be on return.

To assist with return to work, financial support may be applied for from CoEPS. For example, staff can apply for funding for a collaborator to visit to minimise their travel, or for a laptop to enable home working. In the case of an unexpected situation (for example, illness of a child), staff can request for cover to be arranged. We do however recognise that awareness and usage of these support mechanisms is inconsistent, and moreover the return-to-work process is not standardised.

Action 5.5.2: Standardising Return to Work

Implement a standardised return to work interview template; carry out annual review of paperwork to ensure the process is being followed. Appoint a formal Return to Work mentor.

Action 5.5.3: Return to Work Awareness Guide

Produce a guide about Return to Work support on the School wiki which is readily accessible to all staff; include a question in staff survey to assess awareness.

The University has an active Parents and Carers Network to support and advocate for University staff with parental and caring responsibilities. It provides a monthly coffee meeting and a range of events throughout the year that are suitable for both staff and their children.

(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.

Over 2015-17 three permanent academics took maternity leave; all returned. Two remain in post, one resigned to take up an equivalent position at another Russell Group University closer to her home. No staff on fixed term contracts took maternity leave. In the same period, two PS colleagues took maternity leave: one is currently on leave and the other returned to work part time.

SILVER APPLICATIONS ONLY

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

(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.

There has been a 100% uptake for 2 weeks paid paternity leave, with 10 cases during 2015-17 (7 L, 2 SL, 1 Reader). One Lecturer did not qualify for formal paternity leave soon after his appointment in 2016; two weeks paid Annual Leave was arranged starting from when his wife went in to labour, along with significant flexibility over his working location for two months in order to support his family during relocation.

“Support for home working and flexible leave during my first months at Birmingham, which coincided with the birth of our first child, made the transition much easier.”

Male Lecturer appointed 2016

Details about paternity, shared parental, adoption, and parental leave entitlements are available online. The DoE+D is available if staff wish to (confidentially) discuss their options in advance of a formal application for paternity leave. We do however recognise the need to ensure consistency of process with maternity leave, as described in 5.5(iv) above.

(vi) Flexible working

Provide information on the flexible working arrangements available.

All staff who have worked at the University continuously for 26 weeks may make a flexible working request. Requests may be for any reason and are not restricted to employees with family care commitments. The School supports flexible working further by encouraging members of staff to work from home one day a week. Staff are strongly encouraged to approach the HoS if they believe that this is not possible due to their timetabled duties, who will explore arrangements to facilitate this. All academic staff may make a request for their teaching commitments to be scheduled to accommodate caring and parental responsibilities. In the 2018 staff survey, only 1 respondent (male) disagreed with the statement *“My line manager/supervisor is supportive of requests for flexible working”*.

PS staff are managed outside of the School; in line with University policy they can apply for flexible working subject to the nature of their role.

(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.

If a member of staff opts to go part time permanently, there is no automatic right to revert back to a full-time working pattern. However, as noted in Section 5.5(vi), staff can ask to work flexibly for a fixed period and agree an end date to the temporary arrangement, after which they will revert back to full-time working pattern.

Within the last three years two PS colleagues (both female) moved from full-time to part-time. One academic (male) moved from part-time to full-time.

5.6. 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.

There has been a considerable change in our culture since 2013; there is a friendly and inclusive atmosphere amongst staff and students, fostering a real sense of community. A prime example of this culture change is the midweek school coffee mornings (an ongoing action from 2013), organised by staff volunteers and attended by a cross-section of colleagues (female, male, junior, senior, academic, PS and PGR). This initiative has been highlighted by the London Mathematical Society's Good Practice Scheme (benchmarking report by Ortus Economic, April 2018). Staff have high agreement that social activities are likely to be welcoming to all genders (89% both years, with no evidence of a gender aspect).

Nevertheless, there is some way to go on communicating gender equality policies. In the 2018 staff survey, 14% of staff (1/13F, 2/22M, 3/9 prefer not to define) indicated their disagreement with the statement *"My School has made it clear to me what its policies are in relation to gender equality (e.g. on discrimination, parental leave, carer's leave, flexible working)."*

Action 5.6.1: Gender equality policy dissemination

- (a) Develop a School wiki resource covering all policies relating to gender equality (e.g. discrimination, harassment, parental leave, carer's leave, flexible working).**
- (b) Organise an all-staff training event on policies to support gender equality.**

A more recent innovation is the *Women in Maths Party* described in 5.3(iv); written feedback highlighted that this event was enjoyable and valuable for career planning. It also provided insight into awareness of MSci and PhD options.

"I was unaware of differences in career opportunities... having a Masters compared to not having one. I feel this information is not widely known."

Female BSc student attending the Women in Maths party, March 2018

Students generally feel part of our community, although there was some evidence of lack of inclusion among a very small group of students (below 5/year) who preferred not to specify their gender, or identified as non-binary (Table 5.6.1).

I feel part of my School's community

	2017			2018		
	F	M	PNS/NB	F	M	PNS/NB
UG+PGT	92%	91%	0%	90%	90%	25%
PGR	100%	79%	75%	100%	86%	100%

Table 5.6.1. Inclusive community. Student agreement with the statement above. PNS = prefer not to say, NB = non-binary.

This community spirit is promoted by termly student-staff parties (2013 action plan), an annual trip to the Raymond Priestley Centre in Coniston and informal 'mathematical musing' discussion events. PGRs are particularly well-catered for, with an active society and weekly 'cake club'. Social activities are widely found to be gender inclusive across taught and research groups (Table 5.6.2).

Social activities within my School such as school parties, team building or networking events, are likely to be welcoming to all genders

	2017			2018		
	F	M	PNS/NB	F	M	PNS/NB
UG+PGT	98%	100%	100%	95%	94%	100%
PGR	100%	92%	100%	100%	100%	100%

Table 5.6.2. Inclusive activities. Agreement in student surveys with the statement above. PNS = prefer not to say, NB = non-binary.

Many events are alcohol-free, which seems to contribute to similar survey responses regarding ethnic inclusivity, although we acknowledge several comments indicating room for improvement. Scheduling events at different times of the day (coffee mornings, afternoon mathematical musings, parties early evening) enables those with different caring responsibilities or commuting patterns to participate.

The School has provided financial/logistical support to MathSoc, which was almost non-existent in 2012 and is now vibrant, winning Most Improved Society in the 2017 Guild (student union) awards for their work on inclusivity, 5 CoEPS Society awards, and being shortlisted for another 13. MathSoc runs a large number of fully inclusive social and careers development events, and is actively involved in welcoming new students, including their 'Mathematics Family' scheme whereby new undergraduates are provided with two student-mentor 'parents' and a small cohort of first year 'siblings' to help aid their transition to university life and study. It would be valuable to explore further the equality dimension of this scheme.

Action 5.6.2: MathSoc family scheme evaluation

Add a question to the student survey asking about satisfaction with, usefulness of, and free text comments on, the MathSoc family scheme.

The School publishes weekly 'Mathematics Reports' via email to inform students of social events, surveys, University initiatives such as 'The Big Conversation' and general academic guidance. The 'Important Information for all Mathematics Students' VLE page provides a central resource to keep all students and staff up to date. Elections are now necessary for Student Representatives on the School's Staff Student Consultative Committee (SSCC). Minutes are available to all via the VLE; from Autumn 2018 there are specific student representatives for underrepresented groups (Figure 5.6.1).

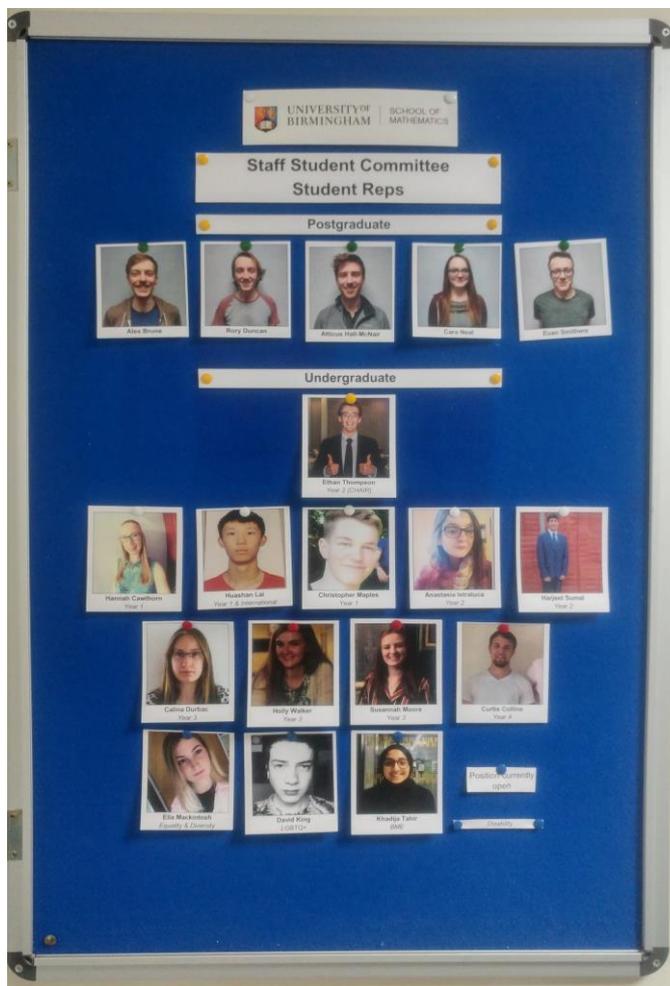


Figure 5.6.1. Noticeboard from the School with Student Reps for 2018/19, including gender, LGBTQ+ and BAME.

Overall, students appear to feel quite free to comment about School culture:

“Maybe emphasis for more non-binary too next time? Not just women in maths”

Female BSc student, Women in Maths party, March 2018.

“I see the department as remarkably progressive, and I wonder if there is an opportunity here to convert the school’s enthusiasm for equality to a brilliant advertisement of maths to female/non-binary applicants, especially the currently less popular MSci.”

Email from male student following the Women in Maths party, March 2018.

Staff and students are invited to discuss any issues they want to raise with either the HoS or the DoE+D. An example action arising from this was the creation of an all-gender toilet block in response to requests from transgender members of the School.

(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 decision (2016/17) to appoint the DoE+D to the School Executive reflects a wider University commitment evidenced by its Equality Scheme 2016-2020 and creation of a Deputy PVC for E+D. The DoE+D is responsible for ensuring HR policies on E+D are applied consistently, including parental leave, appropriate language and behaviour in the workplace, E+D considerations in recruitment, and ensuring that allegations relating to discrimination and harassment are thoroughly investigated.

Both DoE+D and HoS have an advertised policy of being available to all staff for confidential discussion of issues related to workplace dignity and equality. Heads of Research Groups are also available to mentor or represent staff informally. In the event of a staff member having a grievance, it is investigated in accordance with University policy.

All staff are required to have completed a Diversity in the Workplace online training module and to undergo unconscious bias training if they are involved in recruitment. Lead recruiters have to confirm in writing to HR that all panellists have taken unconscious bias training before convening an interview panel.

The HoS has a formal meeting with HR every 2 months and seeks advice from HR as required. Detailed information about the University HR policy and support are available from the online HR knowledgebase and via AskHR email (accessible to all staff). HR policy updates are communicated by the HoS's office via email.

(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.

Membership of most committees (Table 5.6.3), is determined by assigned administrative role rather than as a named individual. As senior staff are expected to take leadership roles in the School, we therefore anticipate that recent successes in promoting female staff should translate into progressively improving gender balance on the above committees. Staff are asked to express interest in administrative roles through PDR.

The most influential committees in the School are the Executive, and Promotions; the Postgraduate Scholarships committee also has significant direct decision-making power relevant to gender balance. Since the 2016-17 session the School has been progressively increasing female representation on the School Executive. Gender diversity is explicitly required on the Promotions Committee, Graduate Scholarships Committee and all recruitment panels.

Students are not involved with the above committees or the Research team; they are however encouraged to take part in the Education, E+D and of course Student-Staff committees.

As discussed in section 3, the E+D committee includes ex officio staff, student representatives (from 2018 including diversity group reps). Additionally, individuals with relevant experience were approached to join the E+D committee, and membership was opened up to volunteers across the school.

Staff membership of the Education and Research committees again are based on administrative roles. This approach appears to avoid significant 'committee overload', however we are mindful of the issue and will continue to monitor. A key issue is that **female academic representation is low on the School Executive and Research Committees and very low on the School Education Committee.**

Action 5.6.3: Female representation on Executive, Research and Education Committees

Institute a Working Group to identify strategies to ensure sustained improvements to female representation on committees (balanced against 'committee overload').

		2015/16			2016/17			2017/18		
		F	M	%F	F	M	%F	F	M	%F
School Executive*	Academic	0	5	0%	1	5	17%	1	6	14%
	Professional	0	0	-	0	0	-	1	0	100%
	Students	0	0	-	0	0	-	0	0	-
	Total	0	5	0%	1	5	17%	2	6	25%
Promotions**	Academic	1	10	9%	2	10	17%	2	10	17%
	Professional	0	0	-	0	0	-	0	0	-
	Students	0	0	-	0	0	-	0	0	-
	Total	1	10	9%	2	10	17%	2	10	17%
Education	Academic	0	9	0%	1	7	13%	0	6	0%
	Professional	0	0	100%	1	0	100%	3	0	100%
	Students	1	0	100%	1	1	50%	3	0	100%
	Total	6	6	50%	3	8	27%	6	6	50%
Research	Academic	1	7	13%	2	9	18%	2	9	18%
	Professional	0	0	-	0	0	-	0	0	-
	Students	0	0	-	0	0	-	0	0	-
	Total	1	7	13%	2	9	18%	2	9	18%
Graduate Scholarships	Academic	1	8	11%	2	8	20%	4	10	29%
	Professional	1	0	100%	1	0	100%	1	0	-
	Students	0	0	-	0	0	-	0	0	-
	Total	2	8	20%	3	8	27%	5	10	33%
Student-Staff	Academic	1	5	17%	1	8	11%	1	7	13%
	Professional	3	0	100%	1	0	100%	1	0	100%
	Students	5	6	45%	10	5	67%	8	5	62%
	Total	9	11	45%	12	13	48%	10	12	45%
Equality and Diversity	Academic	3	4	43%	4	4	50%	3	7	30%
	Professional	1	0	100%	1	0	100%	4	0	100%
	Students	1	0	100%	2	0	100%	2	1	67%
	Total	5	4	56%	7	4	64%	9	8	53%

*Senior decision-making group in the School

**Senior committee chaired by Head of School

Table 5.6.3. Committee membership data in the School for 2015/16, 2016/17 and 2017/18, by gender and staff type.

(iv) Participation on influential external committees

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

Staff are supported in pursuing opportunities on external committees where they arise and this activity can be used as evidence in promotion applications. No female colleague has been refused the opportunity of participating when invited - for example, three of the six School members on the EPSRC Peer Review Colleges are female. However to emphasise School support, we will develop a 'Career Development Checklist' (Action 5.3.3) to ensure external representation is encouraged during PDR.

(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.

To ensure fairness and transparency in workload allocation, the School has developed a model for the allocation of teaching, management and research work which takes into account career stage (probationers and Birmingham Fellows have a significantly reduced teaching and management load), funding position (major fellowships reduce teaching and management, prolonged absence of funding would require higher contributions in teaching and/or management), contract focus and involvement with the Jinan Flying Faculty programme. For the latter, teaching is delivered in intensive 1 month blocks but with few other duties, enabling significant freedom for research and travel outside this period. As a new venture, a senior colleague is mentor to all Jinan staff to ensure equality of treatment.

All established staff can apply for one semester of study leave every seven semesters. The HoS supports applications by colleagues who have made persistent effort to obtain funding, or are making major teaching/administrative contributions.

Members of staff are asked for their administrative and teaching preferences prior to their PDR, which provides an opportunity for discussion. Every year the HoS explicitly informs the School that they are always happy to meet members of staff to discuss aspects of their workload allocation. Effort is made to keep teaching loads stable when possible (unless staff wish to change module), with particular emphasis on enabling stability for staff returning from extended parental leave. The School has been successful in this endeavour in recent years by employing Teaching Fellows or allocating modules on a one-off basis to experienced colleagues.

Teaching assignments are made by the Head of Education, **and monitored/adjusted for gender and other bias by the HoS, in line with the above principles.** To ensure

transparency, data related to teaching and administrative duties are available to all staff via the School intranet. The University is currently developing a workload recognition model, the principles of which are still under discussion. This model will have sufficient flexibility to be tailored to specific School requirements.

Overall there is generally very good agreement, particularly among women, that fair workload allocation does not depend on gender (Table 5.6.4).

	2017				2018			
	F	M	PNS	All	F	M	PNS	All
Agree	6	23	1	30	12	21	5	38
Neutral	1	1	0	2	1	0	2	3
Disagree	0	2	1	3	0	1	2	3
% Agree	86%	88%	50%	86%	92%	95%	56%	86%

Table 5.6.4. Staff survey responses; agreement with the statement “The fair allocation of work within my School does not depend on gender”, by gender. PNS = prefer not to say.

(vi) **Timing of departmental meetings and social gatherings**

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

Meetings are scheduled between 10.00-16.00, and in term time where possible to accommodate those with caring responsibilities. Meetings longer than an hour include scheduled breaks to assist several colleagues who require this. In the 2018 survey 82% of staff responded positively or neutrally that meetings were completed in core hours when asked (87% when restricted to academic staff only).

We organise a wide range of social gatherings ranging from an International Food Day lunch to an evening Christmas dinner, including a variety of times and activities (some of which are alcohol free). Many staff informally gather for lunch, often in research groups. Only 6% of staff disagreed that “A variety of work-related social activities ... are likely to be welcoming to all genders”.

(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.

We are acutely aware of subliminal messaging and try to always have female members of staff visible - for example female staff have a prominent role in Open Days, Applicant Visit Days (AVDs), promotional videos and posters. 82% of staff agree with the statement “My School uses people of all genders as visible role models.”

The 2013 Action Plan required at least one female speaker per term in each seminar series. Across the various seminar series there has been a range of compliance with only one series having female speakers every term, and 7/39 terms across the different series

having no female speakers at all. The percentage of female speakers in each series varied between 10% and 33%. It is essential to ensure all seminar (and School-led internal and external workshops and conferences) organisers are aware of this requirement and **increasing the ratio of women participating in these activities remains an important part of our action plan.**

Action 5.6.4: *Visibility of Academic women*

- (a) Enforce a policy requiring at least two female seminar speakers per series, per term (i.e. at least 20%F) to Heads of Research Groups. Review seminar lists at the E+D annual review each year; DoE+D to discuss with Heads of Group and report to HoS where this is found not to have happened.**
- (b) Require all events organised in the School to have a diverse group of invited speakers.**

(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.

Since 2013 we have progressively formalised outreach, from mainly ad hoc activities to providing a regular on-campus offering supported by a half-time Outreach and Schools Liaison Officer. For 2017/18, 36% of the students at maths outreach events were from schools considered “high priority” by the university’s widening participation teams and feed-through from events to recruitment is evident. Events include:

- Annual LMS Popular Maths Lectures (180 attendees in 2018) and monthly evening ‘Birmingham Popular Maths Lectures’, both open to all (about 70 / lecture)
- Year 12 Mathematics and Computer Science Work Experience Week (19 in 2018), Mathematics Taster Day (58 in 2018)
- Maths Big Quiz coordinated with the central widening participation-focussed Outreach team (320 in 2018)
- Year 8 maths day (53 in 2018)

Colleagues also contribute workshops to wider CoEPS outreach events including those aimed at encouraging maths A-level (Discovery Day, 183 in 2018), and specifically at girls (Girls in STEM Day, 152 in 2018).

These events are widely advertised to school contacts rather than through pupil (or parent)-led contacts with staff, increasing inclusivity and opportunity.

Between 2013 and 2017, male academics delivered at least 54 separate outreach events, versus at least 17 by female academics; including PS staff the number of female-led events rises to 55. The load is currently quite focused on a minority of staff who repeatedly volunteer. Outreach is explicitly recognised in promotions criteria and the HoS supporting statement.

Student involvement is more highly weighted in favour of women. The School has slightly more female student ambassadors (paid roles supporting Open Days and AVDs) - for example, 15 women and 12 men for 2018/19, making balanced representation easier. We aim to have a mixed pair giving the student presentation at AVDs. MathSoc coordinates a weekly Tutoring Scheme for small groups of GCSE students at Dame Elizabeth Cadbury School.

[6484 words]

SILVER APPLICATIONS ONLY

6. 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.

7. FURTHER INFORMATION

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

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

In 2016 we responded to student requests and improved provision for transgender/non-binary members, leading within the University to introduce an All Gender toilet block. We are also working with staff and students, e.g. through posters, to improve the use of inclusive language with regards to transgender/non-binary people (for example using 'they' pronouns).

We have supported students in setting up a BAME students' group which meets informally every few weeks, facilitated by an academic. Activities have included a summer project, jointly-funded the HEA and the School, which generated posters promoting *Women in Mathematics*, *Mathematics in Different Cultures*, and *The Diversity of Current Mathematicians*.

[102 words]

[Overall total for application: 10498 words]

8. ACTION PLAN

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

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

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

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



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School of Mathematics, University of Birmingham

Four Year Action Plan: December 2018-November 2022

Our action plan is targeted to address the following overarching challenges throughout the academic career path, and to sustain and deepen the self-assessment process:

Challenge 1: Significantly narrow the undergraduate MSci gap

Challenge 2: Significantly narrow the major gender inequality in PhD Scholarship funding

Challenge 3: Overcome the major inequality in female staff recruitment outcomes over the past 5 years

Challenge 4: Increase the representation and influence of women in the leadership of the School

Challenge 5: Sustain and deepen the self-assessment process and embed delivery of the action plan into School management

Underpinning the delivery of the Action Plan and accountability of the School management, we will create:

- a) **A School wiki**, to empower all students and staff to contribute data, opinions and suggestions relating to Equality and Diversity.
- b) The wiki will include this Action Plan, updated following a formal **Annual Review** led by the DoE+D in March every year, with RAG (red, amber, green) analysis of the status of each Action.
- c) The wiki will also provide a **local repository of useful relevant information**, including family-friendly policies, Women-in-Maths events, best practice policies, induction information, and links to wider networks to support women's careers; all students and staff will be able to contribute to this repository to maintain its relevance.

Actions below in **bold** denote highest priority

Ref.	Specific Issue	Relevant Objective	Achievable Action	Responsible Officers	Measure of success	Timescale for completion
A3.1	(a) Difficulty with ensuring consistent female academic representation on SAT given relatively low staff numbers.	(a) Improve gender balance of staff on SAT, without overloading female colleagues, and ensuring continuity.	(a) Conduct an annual review of SAT membership. Proactively seek diverse staff participation on the SAT.	Director of E+D (DoE+D)	(a) Consistently between 45-55% F membership of SAT each session.	October 2019, October 2020, October 2021, October 2022
	(b) Low UG representation and no PGT student involvement in SAT.	(b) Increase female and male UG and PGT student involvement in SAT.	(b) Seek members from among our PGT and UG students. Initially focus on 'Equality Reps' (members of Student-Staff Committee), proactively seeking out other students if necessary. Monitor with Annual Review.	DoE+D, deputy Director of E+D (dDoE+D).	(b) Consistently achieve at least four student attendees at all E+D meetings in term time, including at least one UG, one PGT and one PGR, and at least two female attendees.	October 2019, October 2020, October 2021, October 2022
A3.2	Limited senior expertise in E+D within SAT, especially from outside the School and nationally.	Increase the senior expertise in E+D available to SAT.	(a) Regularly invite external visitors with E+D specialism or senior responsibility to SAT meetings.	DoE+D; whole SAT	At least 3 external visitors attending meetings each year.	June 2020, June 2021, June 2022

			(b) Establish a Best Practice Group (BPG) to learn from other departments. Encourage attendance at national best practice events and allocate an internal budget for such activities.	BPG lead (to be appointed by DoE+D)	Best Practice component of Annual Report completed each year, resulting in new and revised actions.	March 2020, March 2021, March 2022.
A3.3	Need to ensure sustainability of SAT and delivery of Action Plan.	Embed SAT meetings into the School Calendar.	(a) Devise a School Calendar for the period through 2022 including SAT meetings (2 autumn, 2 spring, 1 summer), same week/day each year. Ensure these are timed to enable student participation.	School Operations Manager in discussion with DoE+D.	Published calendar of meetings for school wide activities; no clashes of SAT meetings with other significant events.	October 2019, October 2020, October 2021, October 2022.
		Ensure ownership and delivery of the action plan.	(b) Establish SAT Working Groups to take ownership of and deliver specific actions.	DoE+D	Published list of Working Group membership on School wiki; successful delivery of Action Plan.	Working Groups by October 2019. Action Plan delivery assessed through reviews March 2020-March 2022.

A3.4	Engagement with E+D issues is restricted to a subset of staff.	Ensure School-wide engagement with action plan delivery.	(a) Carry out an annual review of progress against the action plan in March each year, with RAG analysis (Red=failing, Amber=issues for concern, Green=performing to plan) for each issue and action, reported via the School wiki.	DoE+D, whole SAT, colleagues responsible for specific actions to report.	Annual review completed and reported via E+D wiki.	March 2020, March 2021, March 2022.
			(b) Organize an open E+D meeting at least once per year between summer 2019 and 2022.	DoE+D	Open meeting organised, with attendance over 30 staff and students.	June 2019, June 2020, June 2021, June 2022
A4.1.1	Low female recruitment to MSci degree relative to BSc.	(a) Increase female recruitment to MSci degree.	(a) Enhance Open Day activities to improve the prominence and understanding of the MSci programme, particularly emphasising female participation and success through this route (e.g. videos, talks, posters).	Admissions Tutor; senior female member of SAT (currently dDoE+D).	Female enrolment to MSci no longer lags BSc (less than 5 percentage point gap between BSc and MSci %F by end of plan).	November 2022.

		(b) Increase female transfers from BSc to MSci; improve retention of female students on MSci programme.	(b) Institute a mentoring group for female undergraduates led by female staff and PhD students, with termly lunches funded by the School. Target the group to high-performing (via end of year class list) female BSc students, but keep open to all students and staff. Topics of discussion will include the MSci degree, further study, and opportunities such as LMS Undergraduate Research Bursaries.	Core female member of SAT (currently dDoE+D).	Female graduation rates for MSci no longer lag BSc (less than 5 percentage point gap between BSc and MSci %F by end of plan).	Meetings every term in 2019-20, 2020-21, 2021-22 sessions; gender-comparable net transfers by November 2022.
A4.1.2	Possible gender gap in PGT (MSc) attainment.	Eliminate any gender gap in PGT.	(a) Organise an annual early-summer social event to help all PGT students get to know their supervisors. (b) Introduce a women's peer support group focused on the PGT cohort.	Director of Graduate School (DoGS).	Gender gap in PGT distinctions reduced to less than 5% consistently.	Summer socials from June 2019; group in place October 2019; gender gap eliminated by March 2022.

A4.1.3	Low recruitment of women to PhD programme and especially scholarships.	Increase numbers of female PhD candidates and scholarship holders.	(a) Establish a SAT Working Group focussed on best practice in postgraduate recruitment. This group will redevelop all School activities related to recruitment of PhD students (e.g. advertising, webpages, interview processes, post-offer visits) and implement by summer 2019.	DoGS.	Improvement in proportion of female PhD candidates and scholarship holders to above 25%F consistently.	June 2022.
			(b) Increase the proportion of female applications for PhD scholarships from within the undergraduate cohort through targeted mentoring.	DoGS.	Improvement in proportion of female PhD applicants within Birmingham MSci cohort to above 30%F consistently (or female MSci cohort proportion as this increases).	June 2021.
			(c) Organise an annual PGR prospects event aimed at external female applicants.	DoGS; DoE+D.	Improvement in proportion of female PhD scholarship applications externally to above 25%F consistently.	June 2022.

A4.2.1	Lack of consistency of practice in recording reasons for staff leaving.	Institute and maintain a consistent process for recording and analysing staff reasons for leaving.	All leavers to receive exit interviews by their line manager, collected by HoS office, reviewed annually by the DoE+D to determine if there are any issues which need reporting back (anonymised) to the wider SAT, paying particular attention to gender issues.	HoS office; DoE+D.	Annual report by DoE+D as part of annual review confirming that these exit interviews have taken place and the outcomes have been reviewed.	March 2020, March 2021, March 2022.
A4.2.2	Lack of in-depth information available to SAT on postdoctoral researcher satisfaction with career mentoring and College researcher development scheme.	Improve SAT understanding of postdoctoral researcher experience and satisfaction with career mentoring.	Create an annual researcher career development questionnaire and review responses, paying particular attention to gender issues.	dDoE+D.	Annual report by dDoE+D as part of Annual Review on postdoctoral researcher satisfaction with career development; further development of actions if required.	March 2020, March 2021; further action commencing October 2021.

A5.1.1	Key issue: Very few women recruited to academic posts since 2013.	Key objective: Increase recruitment of female staff as a proportion of overall staff recruitment.	<p>(a) Form a Working Group to develop and implement two Recruitment Best Practice guides (Research Fellows and Permanent staff) for recruiters. Guides to be accessible to all staff through the School wiki and sent to all recruiters when a position is approved for recruitment. Best practice guides to target all elements of recruitment from applications through to acceptances e.g. standard advert text, distribution to Women in Maths lists/social media groups, named female contact on advert, Skype longlisting, female presence on interview day etc.</p>	HoS; DoE+D.	Increase to at least 25%F recruitment averaged over 4 year period.	October 2022; Initial Best Practice Guide to be developed for implementation by October 2019.
		Sub-objective: Increase female applications for permanent posts.	<p>(b) (Continuing action) target selected female academics (e.g. through Fellowship lists) to invite to apply for permanent posts, including inviting potential applicants informally for seminars to introduce them to the School prior to recruitment processes beginning.</p> <p>Create an externally-facing section of the website emphasising the family-friendly and inclusive culture of the School, targeted at potential applicants.</p>	Heads of Research Groups; HoS; DoE+D.	Female applications for permanent posts consistently above 25% of total.	Review of activity March 2020, March 2021, March 2022.

Sub-issue: Lack of consistency of process in recruitment and E+D best practice.	Sub-objective: Enforce consistent 'best practice for E+D' recruitment process.	(c) Institute DoE+D sign-off of all advertising materials and interview processes.	HoS office; DoE+D; Heads of Research Groups.	Annual report on E+D sign-off of posts.	Annual review of E+D recruitment compliance March 2020, March 2021, March 2022.
Sub-issue: Lack of information on offers made to shortlisted female applicants where these offers were not taken up.	Sub-objective: Improve SAT understanding on the extent to which offers to female candidates are unsuccessful and possible reasons.	(d) Begin internal School-level tracking of offer and acceptance decisions for academic posts to provide more information on where the process is failing to appoint women.	HoS office; DoE+D.	Annual report on E+D sign-off of posts.	March 2020, March 2021, March 2022.
Sub-issue: possible lack of School-wide engagement with the issue of female recruitment.	Sub-objective: Improve School-wide engagement with the issue of female recruitment.	(e) Head of School to report annually on the gender proportions of the staff body and the implications of an imbalanced staff cohort.	HoS.	Minuted item at the Autumn term School Committee.	October 2019, October 2020, October 2021, October 2022.

A5.1.2	Lack of formal induction process for postdoctoral and senior academic (non-probationary) appointments.	Institute and maintain a consistent induction process for fixed term and senior academic appointments.	(a) Expand DoNS role to include overseeing induction processes for Research Fellow and senior appointments. Provide mentors/advisors for new senior staff.	DoNS; DoE+D.	100% of new staff surveyed at Annual Review report satisfaction with induction.	March 2022.
			(b) Form a Working Group to develop suitable induction processes for Research Fellows.	DoNS; Working Group members.	Induction process developed and described on School wiki.	Working Group reporting March 2020.
			(c) Staff Handbook to be developed into the School wiki, a dynamic online resource available to all staff, particularly assisting new staff with the transition into the School.	DoNS; DoE+D; HoS.	School wiki developed and available to all staff.	Initial version October 2019.

			(d) Evaluate the effectiveness of induction processes through targeted surveys/focus groups.	DoNS; DoE+D.	Reports of focus groups at annual reviews.	March 2021; March 2022.
A5.1.3	A significant fraction of staff (23%) do not understand the promotions process and criteria in the School.	Improve staff understanding of promotions process and criteria.	Develop a 'promotions checklist' of indicative achievements and activities that can support applications for promotion to Senior Lecturer, Reader and Professor for use in guiding staff annual reviews.	HoS; DoR; HoE.	Over 90% of academic staff surveyed understand the promotions process and criteria in the School.	March 2020, March 2021, March 2022.
A5.3.1	Female colleagues do not seem to be taking advantage of leadership training programmes.	Ensure that all staff who may benefit are aware of and given the opportunity to take relevant leadership training.	Add questions to the staff survey specifically aimed at female staff to investigate their awareness of and any views on the leadership programmes. Include in the 'career development checklist' (see action 5.3.3 below) an item on these training schemes to prompt discussion in staff annual reviews.	DoE+D; HoS.	All relevant staff agree they are supported to attend leadership training if they felt appropriate to their career plans.	Staff survey March 2019 and March 2020. Analysis in E+D annual report March 2020. Career development checklist in use from October 2019.

A5.3.2	Apparent lack of engagement of staff with optional training; lack of information on whether existing training is meeting staff needs.	Improve SAT understanding of staff experience of and attitudes towards optional training.	Add questions to the staff survey to obtain information on reasons for not taking up training opportunities, previous experiences of training, and areas in which training may be required. Determine whether there is any gender aspect to this.	HoS; DoE+D.	90% of staff agree that suitable training opportunities are available to them; no significant gender aspect to responses.	Question added to staff survey by March 2019, data collected March 2019 and March 2020; new training plans developed by October 2020 and assessed for effectiveness March 2021.
A5.3.3	A significant fraction of staff do not feel that they are actively encouraged to undertake career development opportunities, or to represent the School externally.	All staff feel they are actively encouraged to undertake career development opportunities; all academic staff feel they are actively encouraged to represent the School externally.	Develop a 'career development checklist' to complement the promotions checklist, for use within all annual review meetings to ensure that opportunities for career development, and (where appropriate) external engagement, are discussed during annual review meetings. To include leadership programmes (see action 5.3.1 above).	DoE+D; HoS.	Above 95% of staff agree with the staff survey statements 'I am actively encouraged to take up career development opportunities' and (for academic staff) 'I am encouraged and given opportunities to represent my School externally'.	October 2022.

A5.3.4	A significant proportion of students do not find the tutorial system helpful to explore options for further study and/or career; this issue seems to affect women more than men.	All students find the tutorial system supportive to their future development.	<p>(a) Organise a School Away Day focused on student career development and producing strategies to improve consistency of advice and best practice.</p> <p>(b) Organise termly Women in Maths parties to enable female students to network, talk to female staff, and share concerns and suggestions for improvement.</p>	School Careers Lead; DoE+D.	Above 90% of Taught students agree with the statement 'progress review tutorials are useful to explore further study after degree' or 'progress review tutorials are useful to explore further career options outside university'.	<p>Away day and parties: by October 2019 and October 2021.</p> <p>Impact on student experience: Improvement to 90% satisfaction with career advice in both female and male students by March 2022.</p>
A5.3.5	The 2017 PGR survey indicated that only 50% of students 'felt supported in their career development by the School' (improvement to 89% in 2018).	Ensure sustained PGR satisfaction with career support.	Redevelop current School arrangements for PGR career support, e.g. training sessions on applying for fellowships, industry talks.	DoGS; DoE+D.	Above 90% of PGR students agree with the statement 'I feel supported in my career development by the School' consistently each year; no gender aspect to satisfaction with career support.	March 2020, March 2021, March 2022.

A5.5.1	Possible lack of consistent awareness of the School maternity/adoption leave policies and entitlements.	All staff are fully aware of School maternity/adoption leave policies and entitlements.	Produce a parental leave guide on the School wiki which is readily accessible to all staff; include a question in staff survey to assess awareness.	dDoE+D; HoS.	Above 90% of staff agree with the statement 'I understand the School maternity/adoption leave policies' in the annual survey (or respond that it is not relevant to them).	March 2020, March 2021, March 2022.
A5.5.2	Lack of standardised return to work process following maternity/adoption leave.	All staff taking maternity/adoption leave are made fully aware of the School and wider support available.	Implement a standardised Return to Work interview template; carry out annual review of paperwork to ensure the process is being followed. Appoint a formal Return to Work mentor.	dDoE+D; HoS.	100% of staff taking maternity/adoption leave complete the appropriate template.	March 2020, March 2021, March 2022.
A5.5.3	Possible lack of consistent awareness of the School paternity/shared parental/adoption leave policies and entitlements.	All staff taking this type of leave are made fully aware of the School and wider support available.	Produce a guide about return to work support, on the School wiki which is readily accessible to all staff; include a question in staff survey to assess awareness.	dDoE+D; HoS.	Above 90% of staff agree with the statement 'I understand the School paternity/shared parental/adoption leave policies' in the annual survey (or respond that it is not relevant to them).	March 2020, March 2021, March 2022.

A5.6.1	A small number of staff did not agree that the School makes its policies in relation to gender equality clear.	All staff are fully aware of School policies in relation to gender equality.	a) Develop a School wiki resource covering all policies relating to gender equality (e.g. discrimination, harassment, parental leave, carer's leave, flexible working).	dDoE+D; HoS.	100% of staff responding to School survey agree that the School makes its policies in relation to gender equality clear each year.	Resource developed for October 2019; annual survey responses March 2020, March 2021, March 2022.
			b) Organise an all-staff training event on policies to support gender equality.	DoE+D.	As above.	Event taking place with above 75% staff attendance by January 2020.
A5.6.2	The MathSoc 'family scheme' is a major feature of how UG students are inducted into University life, however the SAT has little information on the equality impact of this activity over a sustained period.	SAT has a full understanding of the equality impact of the family scheme (e.g. difference in female and male experiences).	Add a question to the student survey asking about satisfaction with, usefulness of, and free text comments on, the MathSoc family scheme.	DoE+D.	Detailed female/male comparison of experience of the family scheme; formulation of further action if required.	Questions added to student survey March 2019; equality assessment by October 2019; further actions planned by March 2020.
A5.6.3	Female academic representation on the School Executive, Research and Education Committees is low.	Better female academic representation on these committees (e.g. at least comparable with overall female/male staff ratios).	Institute a SAT Working Group to identify strategies to ensure sustained improvements to female representation on committees (balanced against 'committee overload').	Chair of gender representation Working Group, to be appointed by DoE+D & HoS.	At least 15%F representation on each committee, and averaging 20%F each year across all committees.	Working Group established by October 2019; improvements to committee ratios by October 2020 and sustained October 2021.

A5.6.4	Research seminar programmes do not consistently ensure sufficient representation by female speakers, potentially affecting perceptions of female career prospects for e.g. postgraduate students.	Consistent female presence in all research seminar series, preferably involving both junior and senior women.	a) Enforce a policy requiring at least two female seminar speakers per series, per term (i.e. at least 20%F) to Heads of Research Groups. Review seminar lists at the E+D annual review each year; DoE+D to discuss with Heads of Group and report to HoS where this is found not to have happened.	Heads of Research Groups; DoE+D.	At least 20%F research seminar speaker representation (preferably involving a range of career stages) in each series, each term.	Annual reviews: March 2019, March 2020, March 2021, March 2022.
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			b) Require all events organised in the School to have a diverse group of invited speakers	Heads of Research Group; DoE+D.	At least 20%F speaker representation (preferably involving a range of career stages) in all events	Annual reviews: March 2019, March 2020, March 2021, March 2022.
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