



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	Cardiff University	
Department	Mathematics	
Focus of department	STEMM	
Date of application	18 th May 2018	
Award Level		Silver
Institution Athena SWAN award	Date: 2014	Level: Bronze
Contact for application Must be based in the department	Prof. Tim Phillips	
Email	PhillipsTN@cardiff.ac.uk	
Telephone	02920 874194	
Departmental website	http://www.cardiff.ac.uk/mathematics	

ACRONYM KEY

EDI	Equality, Diversity and Inclusion
HoS	Head of School
LMS	London Mathematical Society
PDR	Performance Development Review
PS	Professional Services
PSE	College of Physical Sciences and Engineering
PVC	Pro-Vice Chancellor for the College of Physical Sciences and Engineering
SAT	Self-Assessment Team
SIAM-UK	Society for Industrial and Applied Mathematics, UK & ROI
T&R	Teaching and Research academic pathway
T&S	Teaching and Scholarship academic pathway

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.



Advance HE
First Floor, Westminster Tower
3 Albert Embankment
London
SE1 7SP

Dear Athena Swan Team

It is a great pleasure to write to confirm my support for the application of the School of Mathematics for an Athena SWAN Silver Award. The School Manager, responsible for leading professional services, and I have been co-chairs of our SAT since the School's Athena SWAN Bronze award in April 2015. I have overseen the progress on our Action Plan and embedded the principles of Athena SWAN in the decision-making processes and culture in the School.

Significant progress has been made across all elements of our previous action plan, including increasing the number of senior female academic staff by targeting the entire academic career progression pipeline. In particular, the School has

- appointed Dr Maggie Chen to develop a new programme in Financial Mathematics. She was subsequently appointed Director of International and is a member of School Board.
- mentored three female academic staff to promotion – two to Senior Lecturer and one to Reader.
- implemented a more inclusive recruitment process from advertising to selection.

With regard to our taught student cohorts, a marker of success is the achievement of our target for female students on our MMath programme, and our expectations are now considerably higher.

One of the major outstanding challenges for the School is to increase the number of female PGR applicants and students. We are committed to working closely with all of our current students to identify any issues that make research degrees unattractive to females and to revisit and revise our recruitment practices.

There is greatly enhanced visibility of our female staff and students in all of our online and printed course materials including brochures. In the next period we must ensure that female academic staff are visible at every level to provide role models for our students. For example, we will seek University approval to name a prominent room in the School after Dr. Rosa Morris, who was the first female head of a mathematics department in the UK. The school management team are also committed to providing further leadership opportunities for our newly promoted female staff.

I have raised the profile of equality, diversity and inclusion matters in the School. This is



an agenda item at every School Staff Meeting. Recent topics have included unconscious bias, responsible use of email, and dignity at work. This year I was appointed Chair of the College EDI Committee and so am personally involved in developing an action plan across the College, ensuring that EDI matters are central to the operation of the School.

Our progress since the Athena SWAN Bronze award is just the first stage in improving the culture and processes to support women in the School. I am committed to leading colleagues in fulfilling the next action plan and creating a departmental environment and culture that supports all staff and their career development with equality, diversity and inclusion at its core.

I confirm that the information presented in this application (including qualitative and quantitative data) is an honest, accurate and true representation of the School.

Professor Tim Phillips

J N. Phillips

500 Words

2. DESCRIPTION OF THE DEPARTMENT

The School of Mathematics at Cardiff University is one of seven Schools that comprise the College of Physical Sciences and Engineering. The School was formed in 1988 following an institutional merger, and amalgamated the Department of Mathematics of University of Wales Institute of Science and Technology (UWIST) with three separate Mathematics departments within University College Cardiff.

The School is the largest university mathematics department in Wales but is relatively small when compared with a typical university mathematics department across the UK.

Over the period of our departmental Athena Bronze award, the School has grown from 34 academic staff (5 of whom were part-time) to 45 academic staff (2 of whom are part-time). The number of professional services staff has also increased from 9 to 13 over the period. IT services have recently been centralised across the institution but the locally-based staff are included in this application and notes given where processes are different for these 2 members of technical staff. Currently 6 of our academic staff and 8 of our professional services staff are female (13% and 62% respectively). The 2016/17 HESA data shows a national average of 23% female academic staff so the School is still well short of this benchmark.

The School does not undertake mathematics or statistics teaching for other disciplines within the University, but does host the University's Mathematics Support Service and the Director is an academic member of staff within the School. The Coleg Cymraeg Cenedlaethol, a Welsh Government funded organisation which works with universities in Wales to develop Welsh-language courses and resources for students, has funded one lectureship and also an academic tutor to develop the amount of formal teaching and mathematics support through the medium of Welsh. One lectureship is also funded by the Aneurin Bevan University Health Board to undertake joint working, and several research posts over the period 2014-2017 have been held jointly between the School of Mathematics and local Health Boards.

Student numbers for 2017/18 are:

572 undergraduate	62% male, 38% female	sector average 37% female
88 postgraduate taught	56% male, 44% female	sector average 39% female
47 postgraduate research	77% male, 23% female	sector average 30% female

The sector average used throughout are the HESA 2016/17 figures for Mathematics. Wherever possible we are using four years of data to see the full picture since our Bronze application.

Around 13% of our students declare a disability and 21% of our total student cohort identifies as Black or Minority Ethnic. Very few current students come from a low SES background or have a non-traditional route to Higher Education. 11% of the total student cohort are international students, with the vast majority of these on the postgraduate taught courses (69% of all international students in the department).

A distinctive feature of the School is in the undergraduate and postgraduate taught programmes focused on Operational Research and Financial Mathematics. In many Universities both of these subjects are found within Business or Management Schools.

490 words



3. THE SELF-ASSESSMENT PROCESS

(i) a description of the self-assessment team

Staff Member and Role	Specific Responsibility on Committee.	Additional Information
Professor Tim Phillips, Head of School and Research Group Leader- Applied and Computational Mathematics SAT Chair.	Responsible for action plan.	In post since 2013 leading significant change. Maintains a healthy work-life balance by running regularly, and planning concert and theatre trips.
Miss Beatrice Allen, School Manager SAT Co-Chair	Leads professional service support for action plan.	School Manager since 2014. To manage childcare works flexible hours and encourages all staff to actively manage their wellbeing/ work-life balance.
Miss Anna Clancy Final year MMATH undergraduate student	Represent views of undergraduate students.	Attended the 2016 LMS Summer School, and hopes to progress to a PhD in Pure Mathematics and potentially an academic career.
Dr Alastair Clarke Education and Students Manager	Leads implementation of actions related to teaching and analyses student data.	Leads the administration of the School's taught courses. A managing trustee of his church and assists with a local football league.
Miss Martina Cracco PhD student	Represent views of postgraduate research students.	In the third year of a PhD in Computational Fluid Dynamics and plans to continue with an academic career
Dr Daniel Gartner Aneurin Bevan Lecturer of Operational Research	Represents views of researchers.	Holds a joint post between a Health Board and the School. Works flexibly across sites and to care for young family.
Dr Federica Dragoni School Work-Life Balance Coordinator Senior Personal Tutor Senior Lecturer.		Appointed during her first maternity leave and uses personal experience to promote School policies and actions to support work/life balance.
Professor Marco Marletta Deputy Head of School Director of Research and Research Group Leader- Mathematical Analysis	Leads implementation of actions related to research	Drafted School policy on protected study time for academics returning from long-term absence and mentor to several early career researchers.
Dr David McConnell Director of Mathematics Support Service Lecturer	Leads implementation of actions related to mathematics learning support	Appointed in 2016. Involved in developing teaching innovations for students learning mathematics both within the School and across the University.
Dr Robert Wilson University Dean for Education Innovation		Passionate about students realising their potential in a positive, reflective, learning and teaching environment. Works flexibly to support his young family.

The Chair and Co-Chair have been in these roles since 2014 in order to fulfil a challenging action plan and prepare for a Silver application. As the most senior academic and professional services staff within the School they ultimately line-manage all School-based staff. This has been essential to drive significant change and the roles of Chair and Co-Chair are now embedded within the job descriptions of both the Head of School and School Manager roles to ensure leadership on equality, diversity and inclusion.

There is an annual call for volunteers to be part of the committee and the team is then selected to represent different groups from the student body, career stage, career pathway and have a variety of individual circumstances including childcare and other caring responsibilities. The SAT membership of professional services staff is more closely related to the main functions of their posts but does include male and female staff representing different grades and career stages.

The SAT currently has strong male representation and we will ensure that this stays the case. Recent research indicates that women tend to be over-represented in Athena SWAN work and this can harm their academic careers (Caffrey et al. 2016).¹ The School approach is that poor working practices disadvantage already underrepresented groups, but that good practices benefit all.

The University workload model does not have a specified amount of time for Equality, Diversity and Inclusion activities. The tariff for committee work is set locally within a Citizenship allocation.

Action 1A- Refresh SAT staff membership and ensure balance of gender, ethnicity, career stage, career path

Action 1B- Refresh SAT student membership and ensure equal representation by gender and levels of study

Action 1C- Rename SAT to Equality Diversity and Inclusion

Action 1D- Set committee terms of two years to get the involvement of more staff in identifying the issues, proposing solutions and implementing changes. Every member is to be part of a specific action group

(ii) an account of the self-assessment process

Meetings

Team meetings have been monthly since 2013 and focus on delivery of the action plan including evaluating the effectiveness of actions taken and reviewing best practice elsewhere. There is representation from undergraduate and postgraduate students. Members of the team undertake Equality Impact Assessments during the Periodic Review of Programmes and when new programmes are proposed.

Communication

Athena Swan as well as other Equality, Diversity and Inclusion matters are a standing item on the School Board (the key decision-making body of the School), and action plan progress is communicated via all-School meetings. Minutes and papers are on the School Shared Drive, accessible to all staff.

Policies such as core hours for meetings and seminars have been disseminated through School committees so a wider group of staff are engaged in implementation and review of actions which support our culture change. The SAT have not presented these actions as gender-only issues since the changes being put in place also benefit our large number of staff with young children or other caring responsibilities, and encourages all staff to have a work-life balance.

Communication with the College

There is a direct line from this committee to the College Equality Diversity and Inclusion Committee (the Chair and Co-Chair are members). This a forum for actions which cannot be taken at School-level and is very pro-active, both sharing existing practice but also promoting and supporting University-level actions. The College Committee has revised University webpages on

¹ Caffrey L, Wyatt D., Fudge N., et al. (2016) *Gender equity programmes in academic medicine: a realist evaluation approach to Athena SWAN processes*. British Medical Journal Open 2016.

planning, taking and returning from all parental leave to give more support to line managers and the staff/ students including statutory and best practise information.

Communication externally

Consultation with a previous member of research staff (Dr Penny Holborn, Lecturer, University of South Wales) as a supportive external critical friend has been very useful in critiquing our actions and this application.

The Co-Chair has attended meetings across the GW4 Network (University of Bath, University of Bristol, University of Exeter, Cardiff University) focused on Athena Swan which have included presentations by the member institutions, Silver and Gold Award holders and ECU. Connecting with comparator departments across the GW4 Universities has been very useful to share ideas and experiences.

Other staff and students have attended events including Women in Mathematics conferences held by the London Mathematical Society. A session focused on women in mathematics was held as part of an academic workshop in 2016 organised by Dr Federica Dragoni, introduced by our (then)PVC-College Professor Karen Holford and institutional Athena Swan lead (Karen Cooke). All travel and other expenses arising from these activities are funded by the School.

Consultation on Action Plan

All School staff and postgraduate research students are asked to put forward actions which they believe could promote and encourage change. This is done via email and in School meetings looking at the whole action plan and additional actions.

Actions delivered by School Committees or groups, such as research seminar speaker lists, career development for research staff, lecture timetabling request process have all consulted with the staff who are impacted by proposed changes and with wider staff. HoS communication about staff survey results includes consultation on future actions.

Action 2A- Develop a School communications plan for EDI

Action 2B- Use School-specific intranet to hold information relevant for staff (this is not available for students)

Action 2C- Extend and enhance the information on School internet pages for wider visibility

Action 2D- Hold a focus group of students to develop the student elements of the communications plan

Action 2E- Use the School Newsletter to promote actions

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

Membership

Membership will continue to be by agreement and reviewed alongside all other activities (with appropriate workload model data) at PDR. However, involvement from a wider number of staff will provide greater engagement with the challenges still facing the School.

Members will be encouraged to put themselves forward to be Athena Swan Panel Members. Funding will continue to be available to any staff wishing to attend events focused on any element of inclusivity, and this policy will be extended to other senior Professional Services (PS) staff.

Meetings

The committee will still meet monthly and the name changed to Equality, Diversity and Inclusion to represent the full range of activities to be considered. This will ensure intersectionality is given more prominence and also align with the College and University level committees.

Reporting and Communication

Progress will be reported to School Board and the SAT will communicate through a wider number of channels to staff and students to generate more discussion and awareness.

Through active membership of the College EDI Committee the School will continue to contribute to wider actions, and act as peer-reviewers/ mentors to other departments.

Action 3A- Continue to fund these activities from School budget and to extend this to PS staff

Action- 4A- To improve the visibility of the work of the SAT, the workload model tariffs for all administrative roles will be published within the School. Currently all administrative roles are aggregated and all data is presented anonymously

Action 4B- Agree additional workload allocations to lead on specific initiatives- to be agreed at School Board for 2018/19

948 words

4. A PICTURE OF THE DEPARTMENT

4.1. Student data

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

N/A

(ii) Numbers of undergraduate students by gender

There are no part-time undergraduate programmes. Each programme can be taken with an additional Year of Professional Training or a Year of Study Abroad:

- BSc Mathematics
- BSc Mathematics and its Applications (discontinued 2017)
- BSc Mathematics, Operational Research and Statistics
- BSc Financial Mathematics (started 2016)
- BSc Mathematics and Physics
- BA Mathematics and Music
- MMath Mathematics
- MMORS Mathematics Operational Research and Statistics (started 2017)

There are a high number of transfers between the programmes so current student numbers per programme are not useful. Data is presented on the number of graduates from the programmes since our Bronze application.

Data and Analysis- Undergraduate student numbers

The total proportion of female undergraduate students is consistently higher than the sector average and the average for Russell Group University Mathematics departments (Fig. 1), but there are still some significant differences between the programmes with fewer female students studying on the pure and applied programmes (Tab. 2). The 2014 Bronze actions taken to address the low proportion of female students on the MMath which has a pure and applied focus, have

been successful in raising the percentage of female students to above the target of 20% (previously it had been 0%) (Tab. 4).

Following a 2015 review of programmes, the Mathematics and its Applications programme has been discontinued. All of the optional modules remain available on the broader BSc Mathematics scheme.

There are no graduates from the new programmes in Financial Mathematics yet, and given the high number of student transfers across programmes data in the first two years of study are unreliable. As an indicator, Financial Mathematics entry was 29% female in 2016/17 (5/17 students) and 38% female in 2017/18 (8/21 students).

The percentage of male-female students shown in every other breakdown reflects the overall cohort. These figures are reported to School Board annually following enrolment. All high performers in their penultimate year of study are invited to discuss postgraduate research opportunities with HoS.

Table 1: Numbers and Proportions of Male/Female students enrolled on UG Mathematics courses 2013/4 to 2016/7

	Cardiff University				Russell Group Universities				All UK Universities			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	319	219	59%	41%	10290	6285	62%	38%	22140	14055	61%	39%
2014/5	335	230	59%	41%	10600	6315	63%	37%	22255	13750	62%	38%
2015/6	334	257	57%	43%	11125	6480	63%	37%	22795	13785	62%	38%
2016/7	352	247	59%	41%	11660	6800	63%	37%	23135	13850	63%	37%

Figure 1: Numbers and Proportions of Male/Female students enrolled on UG Mathematics courses 2013/4 to 2016/7



Table 2: Total number of students graduating 2014-2017 on each overall UG Single Honours degree scheme

	M	F	M%	F%
BSc Mathematics and its Applications	46	30	61%	39%
BSc Mathematics	104	88	54%	46%
BSc Mathematics, Operational Research and Statistics	87	83	51%	49%
MMath Mathematics	36	8	82%	18%
Total Single Honours Graduates (2014-2017)	273	209	57%	43%

Table 3: Numbers of students graduating 2014-2017 on each UG Single Honours degree scheme variant

	M	F	M%	F%
3-year BSc degree	170	148	53%	47%
4-year BSc degree (with Year of Professional Training)	64	51	56%	44%
4-year BSc degree (with Year of Study Abroad)	3	2	60%	40%
4-year MMath degree	36	8	82%	18%
Total Single Honours Graduates (2014-2017)	273	209	57%	43%

Figure 2: Numbers of students graduating 2014-2017 on each UG Single Honours degree scheme variant

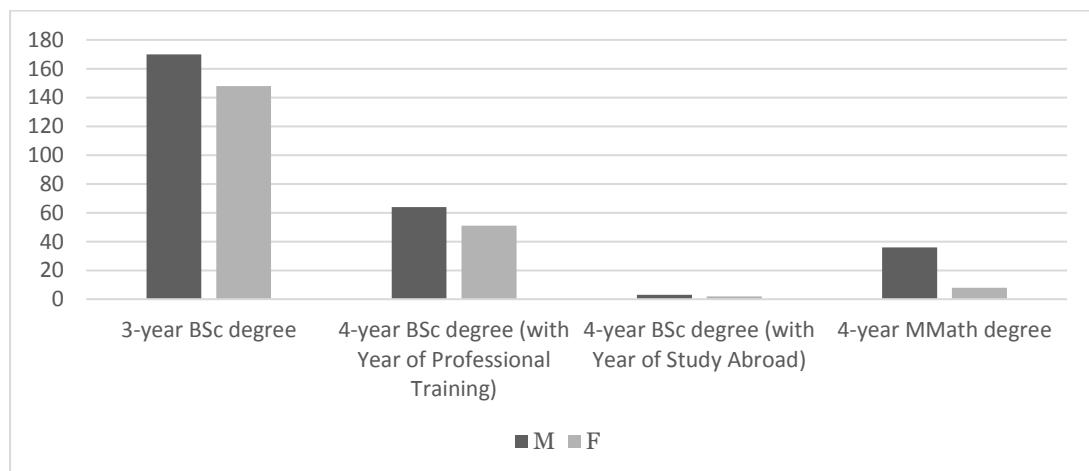


Table 4: Gender split of MMath/MMORS Students 2014-2017

	MMath				MMORS				Total M-level undergraduates			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
Graduated in 2014	11	1	92%	8%					11	1	92%	8%
Graduated in 2015	7	2	78%	22%					7	2	78%	22%
Graduated in 2016	9	2	82%	18%					9	2	82%	18%
Graduated in 2017	9	3	75%	25%					9	3	75%	25%
Final Year of Study 2017/18	10	5	67%	33%					10	5	67%	33%
Penultimate Year of Study 2017/18	10	5	67%	33%	2	3	40%	60%	12	8	60%	40%

Action 5A- Continue to monitor data

Action 5B- All programmes to have a gender balance above the sector average

Action 6A- To promote MMath/ MMORS as default programmes at entry

Data and Analysis- Undergraduate applications and entry

* FTE with joint degree students showing as 0.5 FTE.

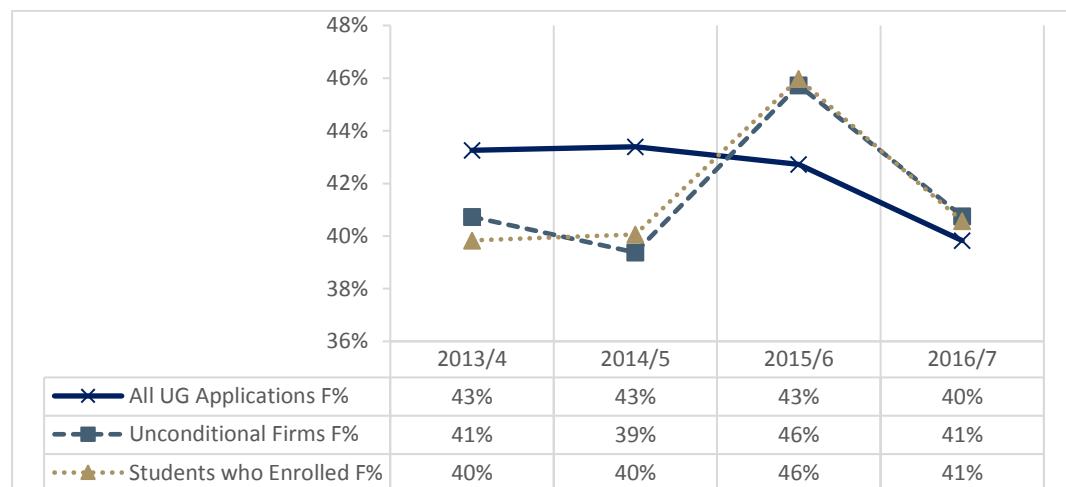
There was a fall of 25 FTE female students applying to Cardiff in 2016/17, coinciding with a 26 FTE increase of male applicants. Neither the grade offers advertised or given had changed from 2015/16. Discussions with GW4 partners indicate this may be a sector-wide shift in mathematics, and potentially the unintended consequence of A-level reforms in England leaving female students in particular with less confidence in their mathematical ability when applying to university. Prior to 2017, AS-level results were given in August and UCAS applications open from September. It will not be clear whether this is a trend until the close of the 2017/18 admissions cycle and will be monitored closely.

Since 2017/18 applications are processed by a central University admissions team on the basis of predicted grades, and only referred to the School if they are non-standard qualifications or have contextual information. There are around 20 rejected applications per year, indicating no bias in the offer-making process.

Table 5: Application and Entry data for UG Mathematics degrees 2013/4-2016/7

	All UG Applications				Unconditional Firms post A-Level results				Students who Enrolled			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	393.5	300.0	57%	43%	113.5	78.0	59%	41%	109.5	72.5	60%	40%
2014/5	430.5	330.0	57%	43%	107.0	69.5	61%	39%	102.5	68.5	60%	40%
2015/6	499.5	372.5	57%	43%	108.0	91.0	54%	46%	104.0	88.5	54%	46%
2016/7	525.0	347.5	60%	40%	126.5	87.0	59%	41%	124.5	85.0	59%	41%

Figure 3: Application and Entry data for UG Mathematics degrees: Proportions of Females at each stage of application process 2013/4-2016/7



- Action 21A-** Work with the Further Maths Support Network in supporting teachers and preparing school pupils for degree-level mathematics
- Action 6B-** Gender balanced programme of speakers at Open Days
- Action 18B-** Promote the visibility of female staff and PhD students in the School through posters and School recruitment literature and webpages

Data and Analysis- Undergraduate degree awards

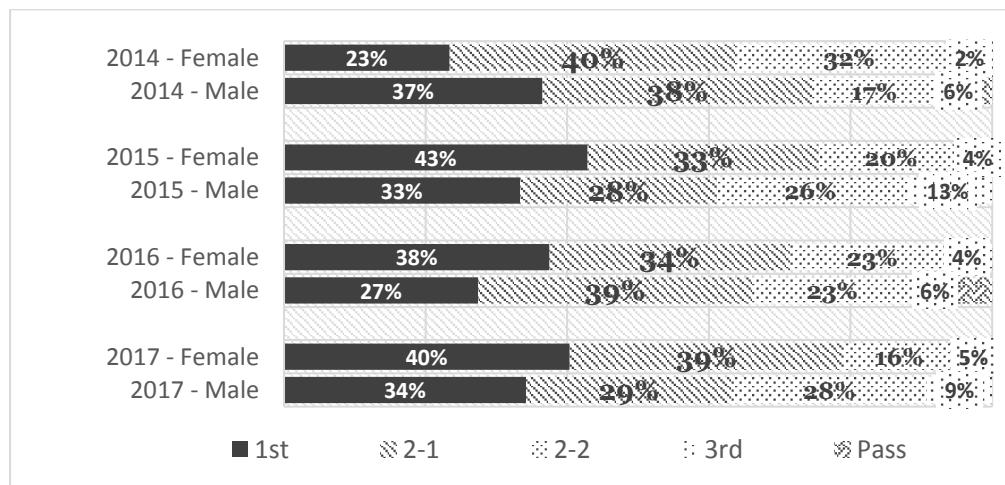
We do not believe any action is necessary apart from continuing to monitor the data.

There are a number of undergraduate students who do not complete their degree. 173/836 students (20.7%) who started a Mathematics degree between 2014 and 2017, left before completing their programme. The majority of these (52%) transferred to other Schools or institutions. The male:female ratio of students who left the course in this period was 60.8%:39.2%, comparable to the 58.1%:41.9% gender ratio of the students admitted.

Table 6: Undergraduate Degrees awarded- All Single Honours Mathematics 2014- 2017

	Total	First	Two-One	Two-Two	Third	Pass Degree
2014 - Female	47	11 23%	19 40%	15 32%	1 2%	1 2%
2014 - Male	63	23 37%	24 38%	11 17%	4 6%	1 2%
2015 - Female	49	21 43%	16 33%	10 20%	2 4%	
2015 - Male	72	24 33%	20 28%	19 26%	9 13%	
2016 - Female	56	21 38%	19 34%	13 23%	2 4%	1 2%
2016 - Male	62	17 27%	24 39%	14 23%	4 6%	3 5%
2017 - Female	57	23 40%	22 39%	9 16%	3 5%	
2017 - Male	76	26 34%	22 29%	21 28%	7 9%	
Total - Female	209	76 36%	76 36%	47 22%	8 4%	2 1%
Total - Male	273	90 33%	90 33%	65 24%	24 9%	4 1%
TOTAL	482	166 34%	166 34%	112 23%	32 7%	6 1%

Figure 4: Undergraduate Degrees awarded- All Single Honours Mathematics 2014- 2017



- Action 5D-** Do data analysis on progression from Years 1 and 2 and to also extend to use other data on protected characteristics

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

MSc Operational Research and Applied Statistics

MSc Operational Research, Applied Statistics and Financial Risk

MSc Data Science and Analytics (joint with School of Computer Science and Informatics) first intake 2016/17.

MSc Mathematics first intake 2018/19.

There are no part-time overseas students on PGT schemes due to UK visa requirements

Data and Analysis- Postgraduate student numbers

With the small number of students there are significant fluctuations in the student data from one year to the next. The larger proportion of female students in 2016/7 is connected with the new Data Science and Analytics degree scheme introduced that year (the male:female ratio for students on this degree scheme that year being 42%:58%).

The proportion of female part-time students is consistently higher than the proportion of female full-time students.

The current MSc provision is focused in the Operational Research area of the School which few other Mathematics departments have. The percentage of Home female students is lower than on our undergraduate degree programme in the same area, but the percentage of female Overseas students is higher. The employment prospects for graduates from these programmes (both undergraduate and Masters level) is very good, so we believe that Home students are more likely to move into employment, particularly with less funding from loans available. Overseas students are more likely to have government funding or have a greater expectation of paying high fees and living costs so there is a higher take-up at this level.

An MSc in Mathematics will run from 2018 which will enhance the pure and applied provision at Masters level and be more comparable to the rest of the sector.

Table 7: Numbers and Proportions of Male/Female students enrolled on PGT Mathematics courses 2013/4-2016/7

	Cardiff University				Russell Group Universities				All UK Universities			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	31	15	67%	33%	1170	715	62%	38%	2030	1140	64%	36%
2014/5	30	21	59%	41%	1120	830	57%	43%	2025	1325	60%	40%
2015/6	43	20	68%	32%	1145	860	57%	43%	2070	1380	60%	40%
2016/7	47	38	55%	45%	1290	990	57%	43%	2230	1480	60%	40%

Figure 5: Numbers and Proportions of Male/Female students enrolled on PGT Mathematics courses 2013/4-2016/7

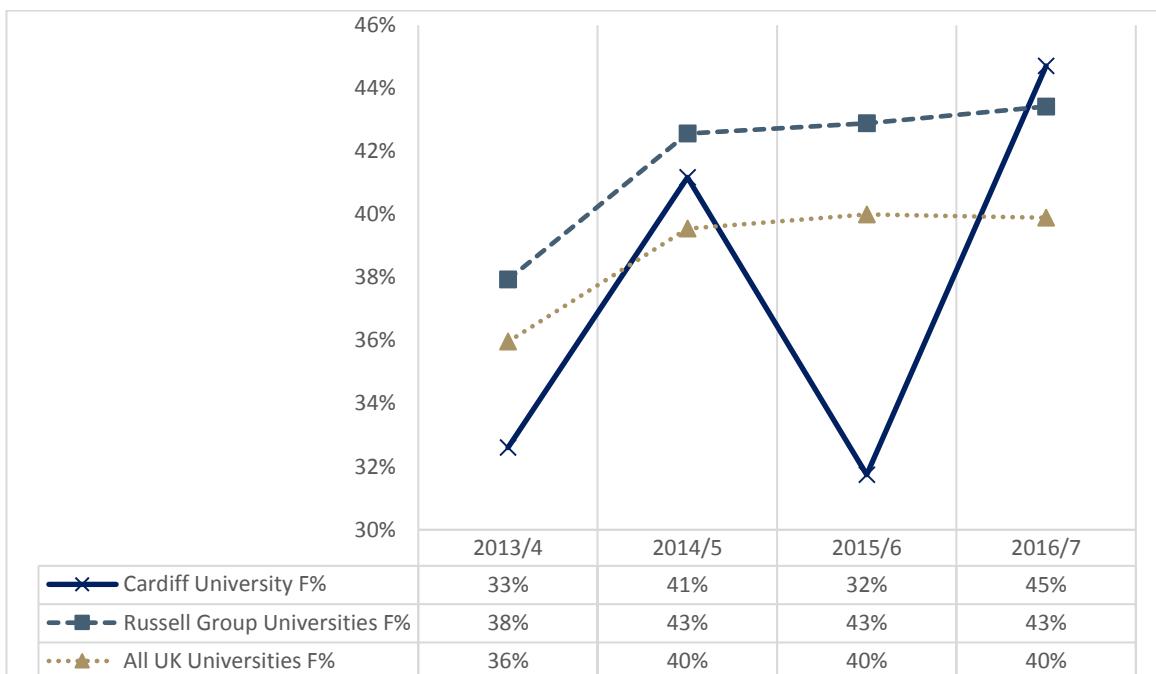


Table 8: PGT Student Status (Home/Overseas and Full-time/Part-time by Year of Entry 2014-2017

Year by Entry	Full-Time Home/EU				Part-time Home				Full-Time Overseas			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2014	12	8	60%	40%	6	5	55%	45%	5	5	50%	50%
2015	19	6	76%	24%	5	4	56%	44%	13	7	65%	35%
2016	18	12	60%	40%	8	10	44%	56%	12	12	50%	50%
2017	20	10	67%	33%	4	3	57%	43%	18	12	60%	40%
Total	69	36	66%	34%	23	22	51%	49%	48	36	57%	43%

Action 5C- Look at Masters level holistically- MMath, MMORS, MScs to see total numbers at Masters level and for this proportion to be at least equal to the BSc programmes

Data and Analysis- Postgraduate taught applications and entry

As with undergraduate applications, offers are processed centrally, with only non-standard applicants being referred to an admissions tutor who has completed the mandatory equality and diversity and unconscious bias training.

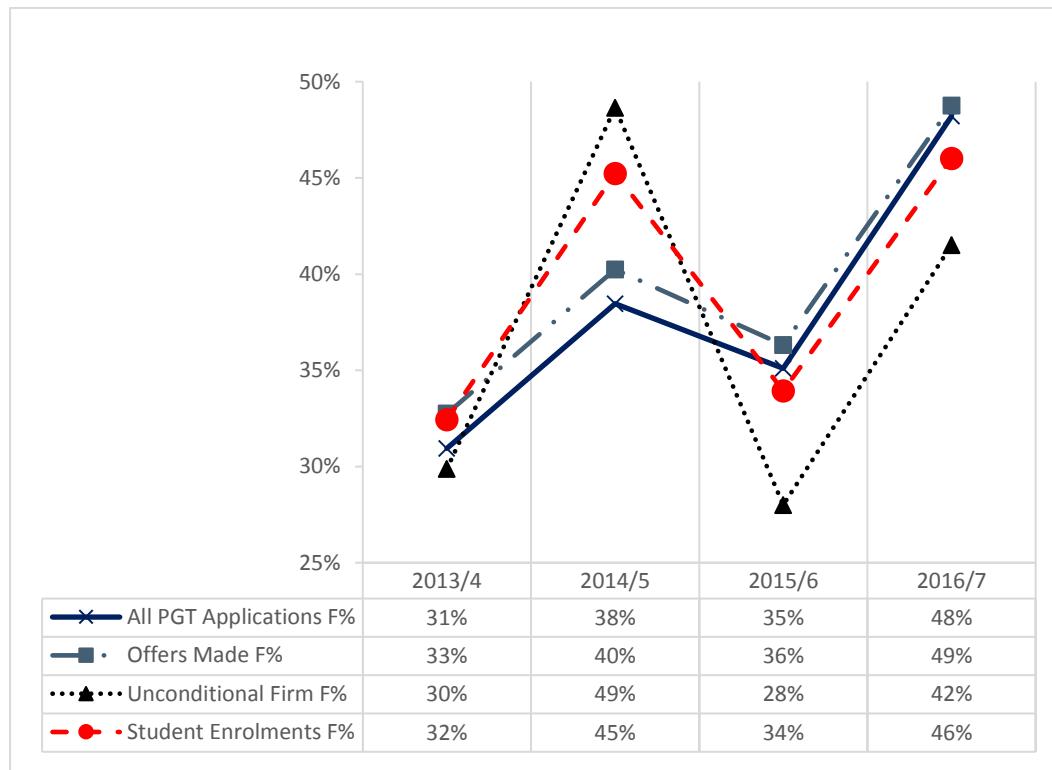
84% of MSc applicants were made an offer, with female applicants marginally more likely to be offered a place than male. However, male students were slightly more likely to accept the offer of a place. It has been very difficult to survey overseas applicants who have not accepted a place and the University admissions team advised that most of these students have applied to multiple

institutions in multiple countries so the decision is based on many factors including the academic and financial.

Table 9: Application and Entry data for PGT Mathematics degrees at Cardiff 2013/4 to 2016/7

	All PGT Applications				Offers Made				Unconditional Firm				Student Enrolments			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	154	69	69%	31%	115	56	67%	33%	54	23	70%	30%	25	12	68%	32%
2014/5	136	85	62%	38%	98	66	60%	40%	38	36	51%	49%	23	19	55%	45%
2015/6	135	73	65%	35%	121	69	64%	36%	54	21	72%	28%	37	19	66%	34%
2016/7	123	114	52%	48%	113	108	51%	49%	47	33	58%	42%	31	26	54%	46%

Figure 6: Application and Entry data for PGT Mathematics degrees: Proportions of Females at each stage of application process 2013/4-2016/7



Action 6C- Review communication with applicants between offer of a place and enrolment and highlight areas such as accommodation, the academic content of the course and the industrial placement opportunities available

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

Data and Analysis- Postgraduate research student numbers

The School admits an average of eight new PGR students each academic year with the major limitation on numbers being studentship funding. The majority of PGR students are Home/EU, and many completed their undergraduate course at Cardiff. There are only four overseas and three part-time PGR students so the numbers are too small to consider them separately.

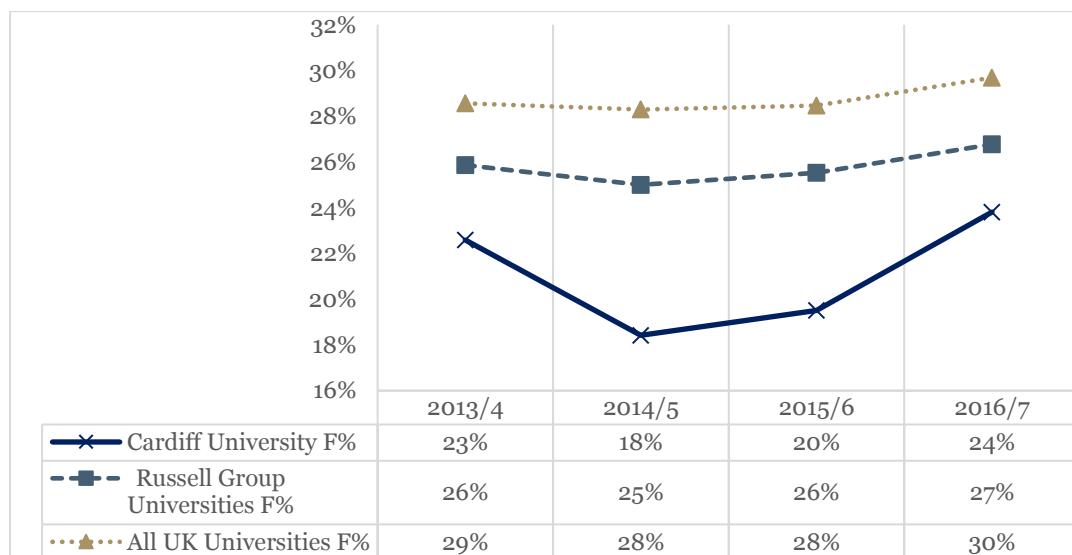
The proportion of female PGR students in Mathematics at Cardiff is significantly lower than the sector average. During the current 2017/8 academic year so far twelve new students (three female) have commenced PGR study, maintaining the 24% total percentage of female students.

During the period October 2013 to January 2018, 29 PGR students (22 male and 9 female) successfully completed their PhD. In addition, during this period 7 PGR students (all of whom were male) withdrew before submitting a thesis, or were unsuccessful.

Table 10: Numbers and Proportions of Male/Female PGR Mathematics Students

	Cardiff University				Russell Group Universities				All UK Universities			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	24	7	77%	23%	1290	450	74%	26%	1925	770	71%	29%
2014/5	31	7	82%	18%	1350	450	75%	25%	2015	795	72%	28%
2015/6	33	8	80%	20%	1400	480	74%	26%	2060	820	72%	28%
2016/7	32	10	76%	24%	1395	510	73%	27%	2025	855	70%	30%

Figure 7: Numbers and Proportions of Male/Female PGR Mathematics Students - Cardiff University, Russell Group Universities, All UK Universities



Action 7A- To secure more funding for PhD studentships from a wider range of sources

Action 7B- Continue to support the new 'Women in Maths' initiative by PhD students to encourage more undergraduates to progress to doctoral research

Data and Analysis- Postgraduate research student application and entry

An average of 20% of PGR applicants were made an offer of a place. Female applicants were less likely to be offered a place than male, and also less likely to accept a place when offered. With the limited number of PGR studentships (or other funding) available, just over half of those who accept a place are actually able to take it up. Only 5 female students (16%) began a PhD in this period.

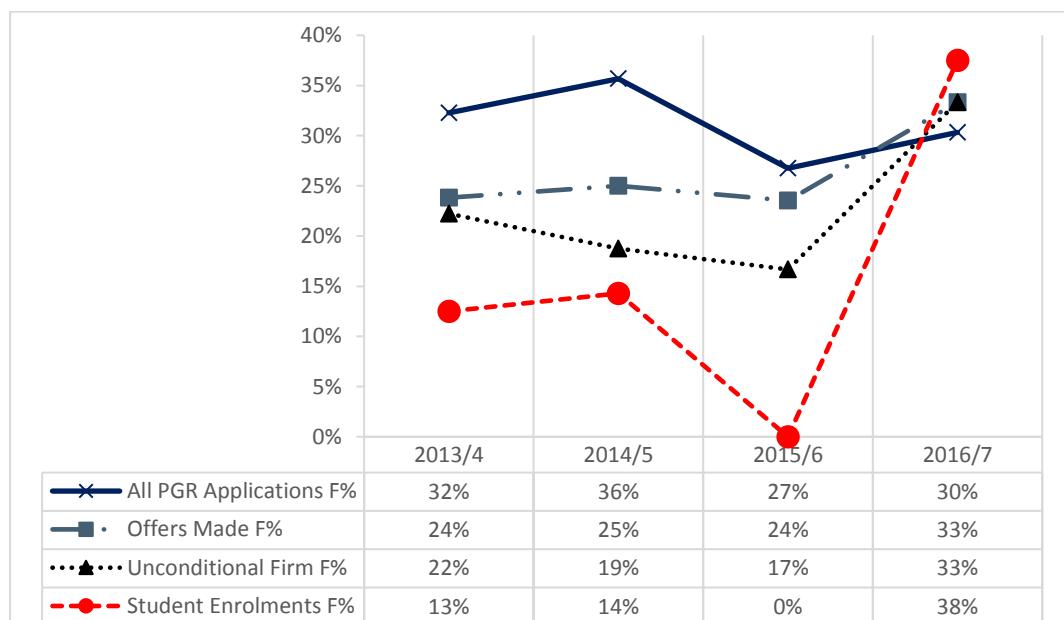
In 2016/17 the selection process for studentships was changed across the University where Research Council studentships are being awarded. Project descriptions were advertised more widely with a single deadline and selection process. Previously, individual applicants had been circulated to potential supervisors and interviews arranged by the supervisory team. Interviews in 2016/17 were conducted by a single panel with a female panel member included in the decision-making. The number of female students rose from 0/7 in 2015/16 to 3/8. This process will be continued.

All members of staff who have a role in awarding studentships have had unconscious bias training.

Table 11: Application and Entry data for PGR Mathematics degrees at Cardiff 2013/4 to 2016/7

	All PGR Applications				Offers Made				Unconditional Firm				New PGR Enrolments			
	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%	M	F	M%	F%
2013/4	76	36	68%	32%	16	5	76%	24%	7	2	78%	22%	7	1	88%	13%
2014/5	55	31	64%	36%	18	6	75%	25%	13	3	81%	19%	6	1	86%	14%
2015/6	58	21	73%	27%	13	4	76%	24%	10	2	83%	17%	7	0	100%	0%
2016/7	54	24	70%	30%	6	3	67%	33%	6	3	67%	33%	5	3	63%	38%

Figure 8: Application and Entry data for PGR Mathematics degrees: Proportions of Females at each stage of application process 2013/4-2016/7



Action 8A- Have gender balanced PGR and PGT admissions teams
Action 8B- Extend interview process for students with an alternative source of funding (self-funded, overseas government funding)
Action 8C- Review all rejected applications

(v) Progression pipeline between undergraduate and postgraduate student levels

Data and Analysis- Progression pipeline

Table 12 indicates no gender bias in terms of continuing to further study. The survey concatenates taught and research higher degrees. A larger proportion of Cardiff graduates are in full-time work than the sector average with a slightly smaller proportion of both male and female graduates in further study than the average. This may be because a large number of Cardiff graduates stay in the city for its low living costs and good employment opportunities, largely in the growing financial services sector and large public sector which include Welsh Government, City Council, Office for National Statistics and NHS.

Table 12: DLHE Data* 2013/14 to 2015/16 – Cardiff Mathematics graduates compared with sector averages.

	Cardiff University Mathematics						Sector Average for Mathematics					
	2013/14		2014/15		2015/16		2013/14		2014/15		2015/16	
	M%	F%	M%	F%	M%	F%	M%	F%	M%	F%	M%	F%
Due to Start Work	0%	0%	7%	0%	0%	0%	1%	1%	2%	1%	1%	1%
Further Study	23%	20%	21%	13%	22%	21%	22%	23%	21%	22%	24%	23%
Full-time work	69%	60%	57%	63%	50%	67%	48%	49%	51%	52%	48%	52%
Part-time work	8%	10%	7%	13%	7%	0%	7%	8%	7%	7%	7%	8%
Part-time study	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Primarily in work and also studying	0%	0%	0%	13%	0%	0%	5%	6%	4%	6%	3%	5%
Primarily studying and also in work	0%	0%	0%	0%	0%	0%	3%	3%	2%	2%	2%	2%
Other	0%	10%	0%	0%	7%	0%	4%	5%	5%	6%	6%	6%
Unemployed	0%	0%	7%	0%	14%	11%	8%	3%	7%	5%	7%	3%

*Survey 6 months post-graduation.

Pipeline to postgraduate research

An emphasis in our Bronze Award was on increasing the number of MMath female students as part of the pipeline to PGR but this is clearly taking a long time. We give individual encouragement to high performing students at key points in the academic programme and highlight PhD study as well as the funding available.

2/22 (9%) MMath graduates were female 2011-2014, this has increased to 7/32 (21.9%) between 2015-2017. The new MSc in pure and applied areas of mathematics and the MMORS Mathematics, Operational Research and Statistics may also increase the pipeline.

Action 7C- Repeat Work@1 session
Action 7D- Support summer projects across every research group

4.2. Academic and research staff data

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

All data presented is headcount. Research-only staff includes all Research Assistants and Associates. There are no research-only open-ended posts.

Data Analysis- Academic and Research Staff

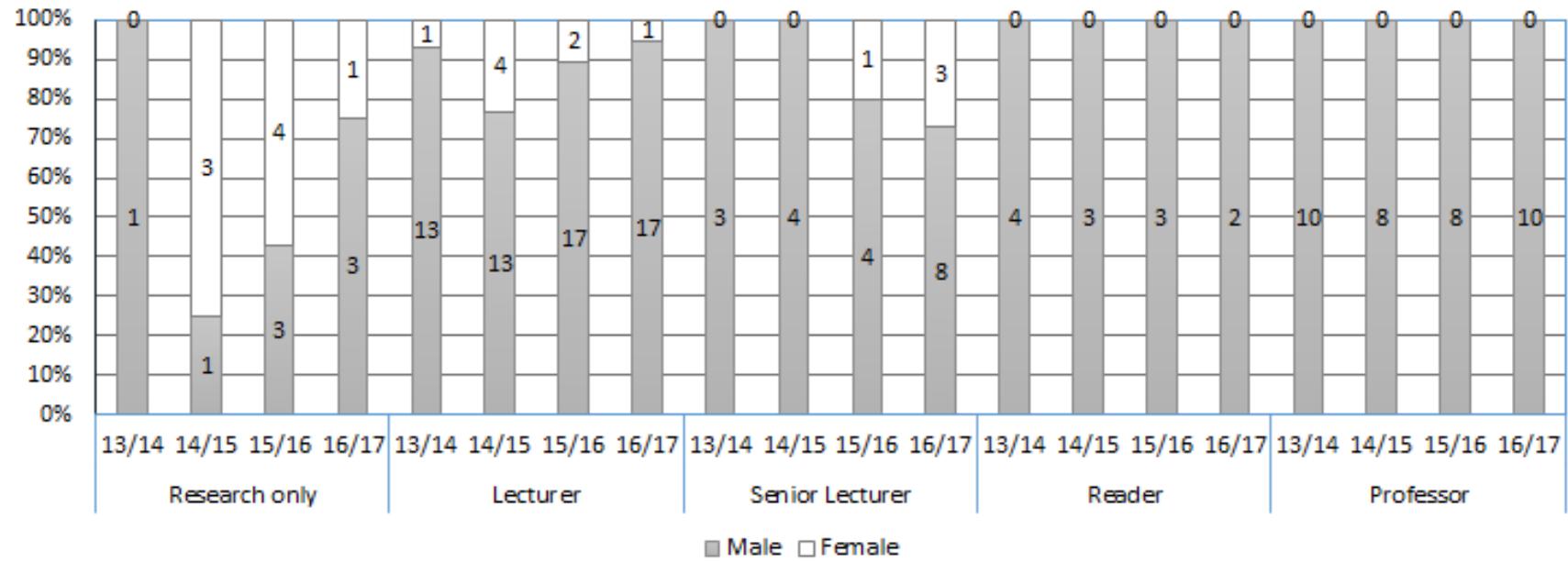
As at 1st August 2017 the School employed a total of 45 academic and research staff with an overall gender balance of 89% Male: 11% Female. At the start of the School's Athena Swan journey in 2014 there were 32 academic and research staff and a gender balance of 97% male: 3% female. The data is based on a census date of 1st August each year and thus excludes two female Lecturers who have started in the last 6 months and a recent promotion to Reader for one of our female Senior Lecturers.

Much work remains to be done compared to the sector average of 23% female lecturers/ senior lecturers. Currently this is 13%. The national average for female Professors is 9%.

There have been relatively few promotions to Reader or Professor since 2013 because recruitment has been concentrated at Lecturer level and progression is only considered after the initial three-year probation period. With only three staff at Senior Lecturer level in 2013/14 it is not surprising that the numbers of Readers has not yet increased.

Research staff have changed from majority female in 2014/15 to majority male in 2016/17. This was due almost entirely to a research unit being taken in-house to the funding bodies in the area of health-related operational research. All of the staff members continue to work in the same area, employed permanently by the Health Board or Welsh Government rather than via a fixed-term grant to the University.

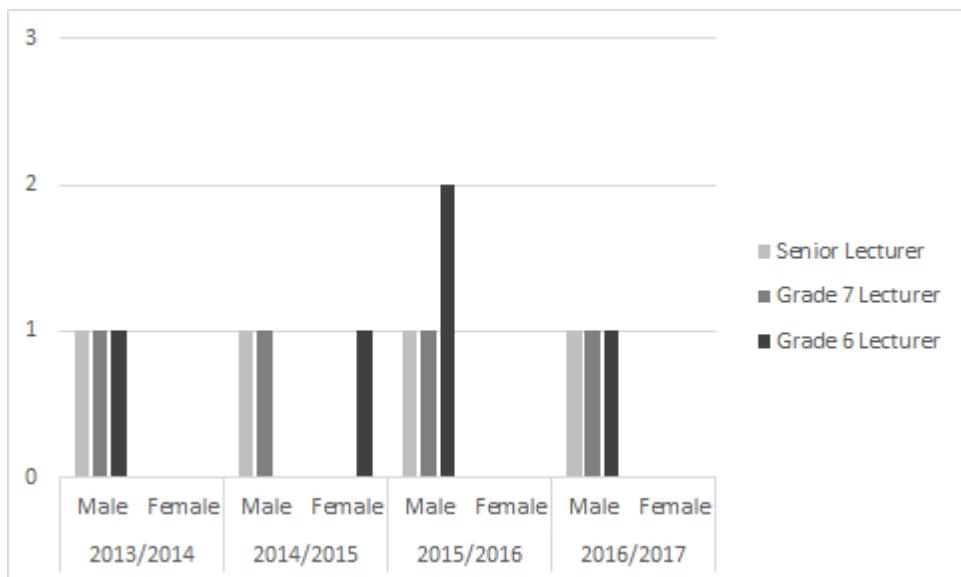
Figure 9: Percentage and number of all academic staff by year



Data and Analysis- Teaching and Scholarship academic staff.

The Grade 6 Lecturing staff in 2013/14, 2014/15 and one in 2015/16 were fixed-term for one year (two male, one female). [Redacted text] There are currently no staff above Senior Lecturer on this academic pathway, and this reflects a historic bias in promotion criteria towards research-active staff. The criteria have changed, which the School welcomes, and line managers and promotion panels are aware of the different outputs which will be considered as evidence of excellence. Appointment and progression are also considered under section 5.1(iii).

Figure 10: Teaching and Scholarship Staff by Year and Grade.



Data and Analysis- Part-time staff

The University facilitates requests for part-time working through Flexible Working and Flexible Retirement policies. [Redacted text]

There have been no part-time academic staff on the Research or Teaching & Scholarship career pathways in the period.

No academic or research staff have formally requested to become part-time or use flexible working, but the School accommodates a large number of requests for short-term timetabling flexibility (see section 5.5 (vi)).

Table 13: Part-Time Staff by Year

	2013/2014		2014/2015		2015/2016		2016/2017	
	Male	Female	Male	Female	Male	Female	Male	Female
Professor Part-Time	3	0	1	0	1	0	1	0

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

Data and Analysis- Open Ended and Fixed-Term Academic and Research Staff

The University has no zero-hour contracts. The School has no open-ended Research only posts.

[Redacted text]

The fixed-term lecturing posts created between 2013/2014 and 2015/16 were to cover specific areas of work whilst the regular staff were on year-long sabbaticals. It is well understood that fixed-term posts are less attractive to female applicants, so since 2016/17 we have created additional open-ended posts to cover staff on sabbatical leave.

The fixed-term research posts have been created with specific limited funding.

Redeployment is administered by the HR department and is open to all staff who meet the eligibility criteria and have 6 months or less on a fixed-term contract. If a member of staff meets all of the essential criteria for a post of the same level (or less) they must be interviewed before shortlisting any other candidates.

Table 14: Open-ended and Fixed-Term posts by Grade and Academic Pathway

	2013/2014		2014/2015		2015/2016		2016/2017	
	Male	Female	Male	Female	Male	Female	Male	Female
T&R Professor Open Ended	7	0	7	0	7	0	9	0
T&R Professor Fixed Term	3	0	1	0	1	0	1	0
T&R Reader Open Ended	4	0	3	0	3	0	2	0
T&R Senior Lecturer Open Ended	2	0	3	0	3	1	7	3
T&S Senior Lecturer Open Ended	1	0	1	0	1	0	1	0
T&R Grade 7 Lecturer Open Ended	7	1	8	2	9	2	8	0
T&S Grade 7 Lecturer Open Ended	1	0	1	0	1	0	1	0
T&R Grade 7 Lecturer Fixed Term	1	0	0	0	0	0	0	0
T&R Grade 6 Lecturer Open Ended	2	0	2	2	7	0	8	1
T&S Grade 6 Lecturer Open Ended	0	0	0	0	1	0	1	0
T&R Grade 6 Lecturer Fixed Term	2	0	2	0	0	0	0	0
T&S Grade 6 Lecturer Fixed Term	1	0	0	1	1	0	0	0

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

Data and Analysis- Academic Leavers

[Redacted text]

There are no significant differences between male and female staff in terms of their career destinations.

The central HR department collect this data and offer all leaving staff an exit interview. None of our staff have given an interview.

Table 15: Academic Leavers by Grade and Fixed-Term Status

[Redacted Table]

2220 words

5. SUPPORTING AND ADVANCING WOMEN'S CAREERS

5.1. Key career transition points: academic staff

(i) Recruitment

Data and Analysis

The actions undertaken to support the full application process through to appointment have been successful. These have included wider and more inclusive advertising, male and female contacts for informal enquiries, training for recruitment panels and female panel members for all appointments. It is pleasing to see the increase in both female applications to academic posts, and shortlisted and appointed female candidates, addressing our most pressing action from 2014. There has been more limited success in recruiting female fixed-term staff, and now these posts are exclusively research posts, targeted action can be taken to address this.

Advertisement

All academic positions (Lecturer to Professor) are advertised on the WISE website, the UK Women in Science network, the European Women in Mathematics network, jobs.ac.uk and the university job opportunities webpage. Apart from a Chair in Operational Research, School strategy over the last 3 years has been to recruit at Lecturer level to increase the pool of female applicants. Job descriptions are also written to emphasise that quality rather than quantity of work to date is the primary criteria.

The School's Athena SWAN Bronze logo is displayed on its homepage. All job adverts contain the statement: "*The School of Mathematics has an Athena SWAN Bronze Award that recognises good employment practice and a commitment to develop the careers of women working in science,*" and the words: "*We strongly welcome female applicants and those from an ethnic minority group, as they are under-represented in our School.*" Since February 2016 all job adverts have included a female contact to whom informal enquiries about the position can be made. Since this statement was introduced, all informal enquiries (from females and males) have been to the female member of staff.

Shortlisting

Shortlisting criteria are clear in the job description and candidates are required to evidence how they meet the essential criteria. All those involved in shortlisting review applications separately to avoid influencing each other and there is at least one female member of staff involved in every shortlisting exercise. The gender balance of each shortlist is given careful consideration.

Interviews

Shortlisted applicants for all academic posts give a presentation in the School prior to their panel interview. The presentation contains research and teaching components and is open to all staff and PhD students, as well as representatives of taught students from the Student-Staff Panel. Feedback from the wider audience including students is collected after all the presentations have been given and is considered by the Appointment Panel.

Applicants are given a tour of the School and invited to an informal lunch with staff.

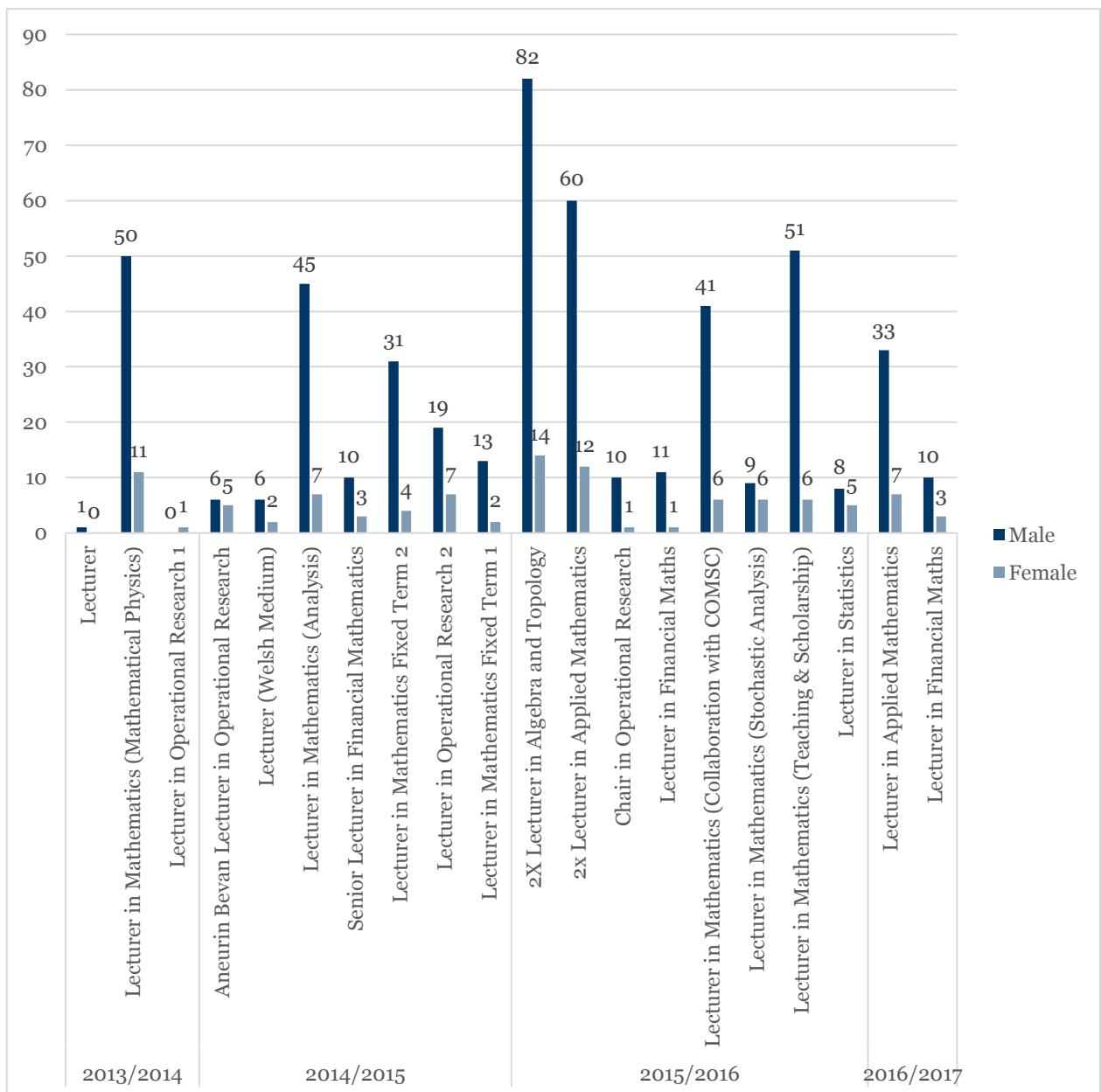
All members of Appointment Panels have undertaken equality and diversity and unconscious bias training. Appointment Panels have at least one female member and an external member from another university. Professorial appointments are chaired by the PVC-College and include two externals from other universities.

The Head of School contacts successful candidates with an offer as soon as possible after the interviews. This is an opportunity for successful candidates to ask further questions and to negotiate terms and conditions.

Table 16: Applications, Shortlists and Appointment to All Academic Posts

	Applications	Shortlisted	Offered post	Accepted post
Female	17%	27%	35%	29%
Male	83%	73%	65%	71%

Figure 11: Applications by Academic Post 2014-2017



*Two posts in 2013/14 were filled during the redeployment process so were not open to external application

Figure 12: Shortlists by Academic Post 2014-2017

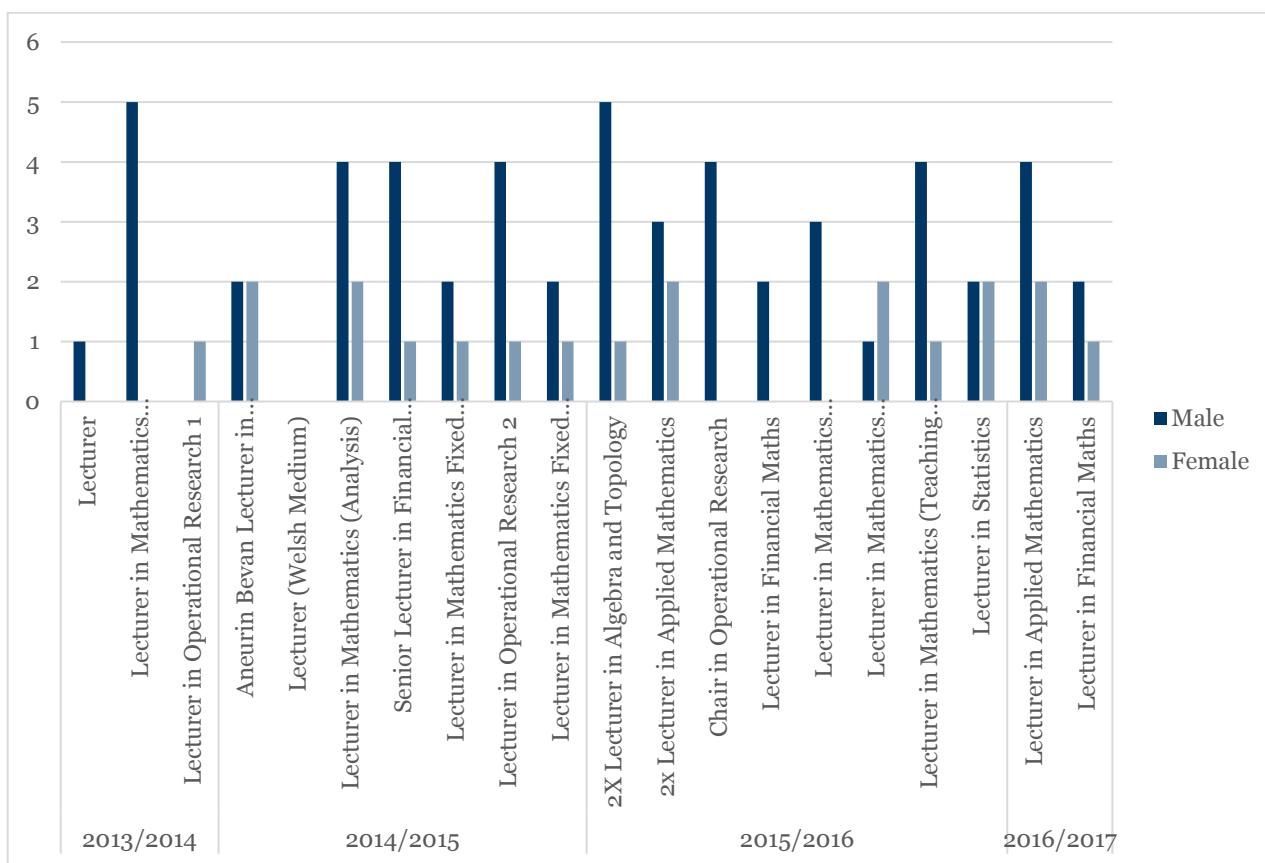
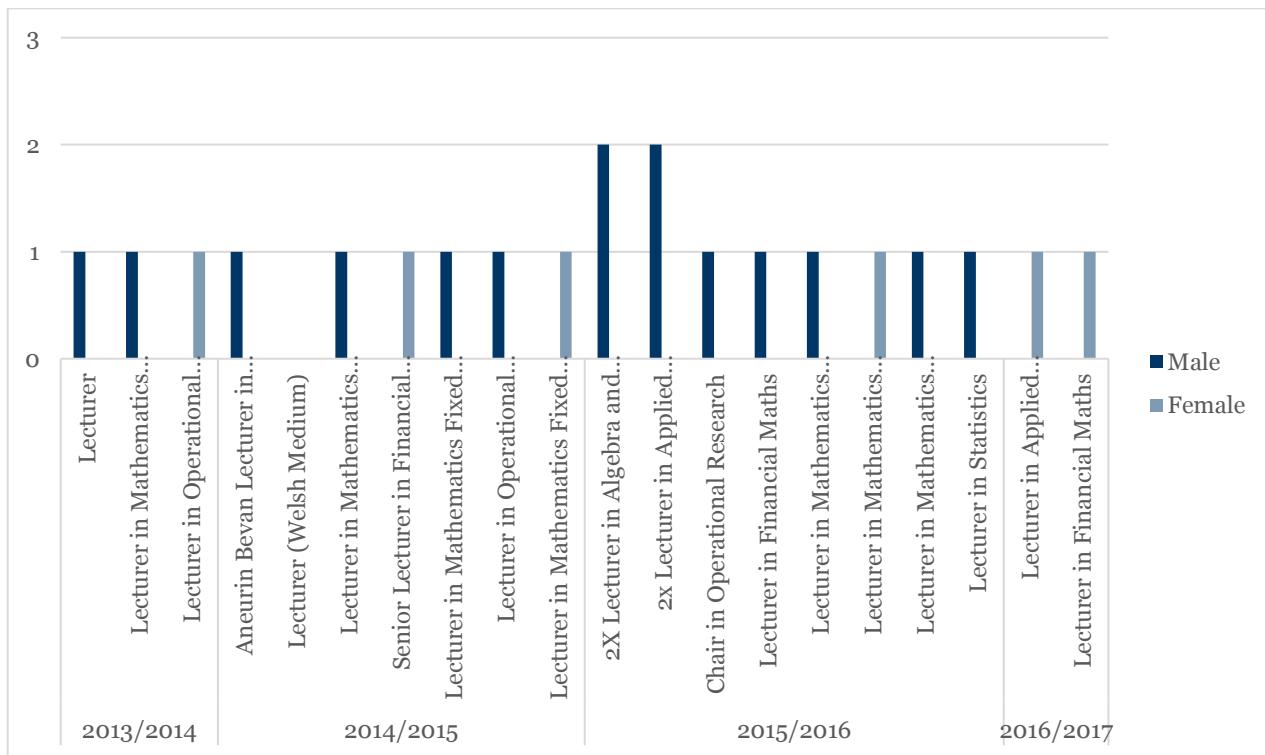


Figure 13: Appointments by Academic Post 2014-2017



[Redacted text]

Research Staff

There have been far fewer research posts (145 applicants over 9 posts) so only the averages are presented.

Table 17: Applications, Shortlists and Appointment to Research Posts

	Applications	Shortlisted	Appointed
Female	14%	15%	22%
Male	86%	85%	78%

Action 9A- Organise annual event delivered by female ECR staff to encourage more PGR to undertake research careers

Action 9B- Monitor career destinations of doctoral graduates

Action 9C- Monitor gender balance of PGR who teach in the School

(ii) Induction

The School has completed a Bronze action to introduce an induction checklist for all staff.

First two weeks

New academic staff are welcomed by the Head of School on their first day at work.

Essential operational matters (e.g. HSE induction, staff ID card, webpage) take place. All new staff are sent a welcome email by the College Pro-Vice Chancellor.

The initial probation meeting is undertaken, and a mentor, distinct from the probation reviewer, is assigned. At the initial and annual probation review meetings any training and development needs are identified.

Meetings with key School staff take place.

The School's HR Officer compiled a School Staff Handbook in June 2017 for new staff which covers general information e.g. School structure, building facilities, HR information and links to the intranet pages, and also information for staff who have relocated to the UK such as opening a bank account, obtaining an NI number, and the staff networks both in the School and across the University that can offer support.

First semester

All early career academic staff are required to complete the University's Academic Practice Programme. This is designed around three core themes: learning and teaching; research/scholarship, innovation and engagement; academic citizenship, leadership and professional skills. As part of this programme support is available to staff to obtain HEA Fellowship status which is a requirement for successful completion of induction.

Within the first six months new staff are expected to complete online equality and diversity, and unconscious bias training and the University induction. Line manager training may also be applicable. Staff on probation have a reduced teaching load – a 10 credit module or the equivalent in their first year – and light administrative duties.

The School holds a welcome lunch for new members of staff to meet colleagues. The School has introduced a monthly coffee morning to enhance the academic community and to share news more

informally. Feedback from these includes “They have been a good way to meet other staff from different research areas” and “It’s a good informal means of learning more about the School”

The School has established a Newcomers Forum for academic and research staff who are within 5 years of appointment. The School has undergone rapid expansion: over 40% of academic staff have been appointed in the last 5 years with new appointments in all areas of School activity. A key goal of the Forum is to facilitate the integration of new staff into the School, providing a supportive environment for newcomers, particularly those who do not assume early career positions on our committees, and a way to suggest new initiatives or improvements to any aspect of our activity. The Forum also enables research associates and research fellows to play a more active role in the School.

Action 10A- Refine the School Staff Handbook by inviting feedback from new staff

Action 10B- Include information of all leave schemes in the Staff Handbook

Action 10C- Increase awareness of University networks and WISE as part of School induction

(iii) Promotion

The School has successfully supported the timely promotion of female academic staff, in line with the 2014 Action Plan. Two female Lecturers were promoted to Senior Lecturer in 2016, and one Senior Lecturer to Reader in 2017 (not shown in table as after the 1st August census point for this data).

Promotion is a two-stage process run by the University. It provides the framework for both T&R and T&S colleagues to apply for promotion. The first stage is within the School and the second is University-wide and external feedback is sought. [Redacted text]

Staff are strongly encouraged by HoS to attend the University information sessions. In 2017 4 male and 1 female staff attended, leading to 3 applications (2 male, 1 female).

Readiness for promotion is discussed at PDR meetings, using the University benchmarks for promotion. From 2017 the School has also required all academic members of staff (except Professors and probationers) to submit CVs to HoS to offer informal feedback/ guidance regarding career development in anticipation of a potential promotion application either now or in the future. It is too soon to know whether this action has been successful.

Table 18: Academic Promotions (2014-2017)

Grade	Female		Male	
	Applications	Success Rate	Applications	Success Rate
Senior Lecturer	2	100%	11	78%
Reader	0	N/A	0	N/A
Professor	0	N/A	2	100%

Action 11A – to monitor CV discussion and widen the review group to include senior female

Action 11B- Recently promoted staff to hold advice session

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

As part of its preparations for the next REF the University has initiated a Rolling REF process. The emphasis is to enhance quality not quantity of outputs. All colleagues are provided with regular,

supportive feedback on their preparedness. This is particularly important for colleagues arriving from outside the UK, if the REF system is unfamiliar.

All female staff in the School were submitted to RAE 2008 and REF 2014.

Table 19: REF2008 and REF2020 Return
[Redacted Table]

5.2 Key career transition points: professional and support staff

(i) Induction

The first part of induction is identical to that for new academic staff, and it follows the induction checklist to ensure that all key operational matters are covered and meetings with key staff occur in the first two weeks. New PS staff have a copy of the Staff Handbook and are introduced to all of the resources used across the PS team. The first probation meeting is held within the first week, including booking a University induction session and any essential training.

All PS staff who are new to the University or the job role have a mentor from another School (usually a similar role and always from another department) assigned. If a new member of staff has moved into the department from a similar role within the University, they will still be encouraged to have a mentor. When their role will be working closely with a member of academic staff, part of the induction process will be with that member of staff.

There are College or University networks for colleagues with similar PS roles in all areas education, placements, research, finance, HR, PGR, engagement. These meet at least quarterly and are useful for getting to know peers as well as developing knowledge of local processes. School PS staff were surveyed and 100% responded that they were Very Useful or Useful. “One of the most useful groups I’ve been on”.

Both induction and membership of appropriate forums are mandatory. Feedback on both institutional and School induction is sought at probation meetings from staff who have just been through it. A survey of PS staff revealed a mix of views about the institutional “It was a broadly useful overview of the university” and it “wasn’t that interesting”. Local induction responses were all positive “covered everything I needed to know”.

Action 12A- Develop system to get feedback on induction and College networks
Action 12B: Staff survey question about the effectiveness of having a mentor

(ii) Promotion

Three PS staff members have been through the regrading process since 2014. [Redacted text] All those completing the regrading paperwork had the support and guidance of their line manager, and a central HR contact who could answer any technical questions about the form or how it should be completed.

Most routes to promotion are to move posts within the University, either via a formal application or through a secondment. Internal secondments have been supported for three members of PS staff. [Redacted text].

Similar to academic staff, PS staff are encouraged to use PDR as a tool to assess their readiness for promotion.

5.3. Career development: academic staff

(i) Training

The University offers a comprehensive staff development programme which includes courses for personal and professional development and training as well as online modules. The system used to record attendance has changed recently which will allow more systematic reporting on course uptake.

Development needs are discussed with all staff as part of the annual performance development review (PDR) and suitable training courses booked online. This was a set of completed 2014 actions to raise awareness of the training available.

All staff are required to undertake online training in equality and diversity, information security and unconscious bias awareness.

PDR reviewers encourage staff to attend leadership courses when appropriate. For example, one academic from the School has participated in the Cardiff Futures programme each year. This programme, led by the VC, is an opportunity for academic staff to develop their career paths and to explore how they might contribute to shaping the future of our University. The HoS has encouraged female staff to self-nominate for the female leadership programme, Aurora but no-one has yet applied.

All participants on University training courses complete a feedback questionnaire.

From 2016 all staff in the School who teach participate in peer review of teaching. This is an annual, scholarly, peer-assisted reflection on the breadth of their teaching/learning support practice. Staff, groups of three consider themes such as assessment, feedback, use of technology, modes of lecturing, equality and diversity, student engagement, tutorials, post-graduate supervision, curriculum development.

In 2016 the School initiated a Grants Club to support staff to develop grant writing skills. The meetings are open to postgraduate students, research and academic staff on topics such as the EPSRC grant submission and review process and fellowship applications. All meetings have had at least 40 participants with a large proportion of early career researchers.

The School-based development activities are highly participatory so feedback is integral to their operation but so far this feedback has not been formally documented.

Action 12C- Feedback on Grants Club

Action 14B- School to support Research staff who wish to apply for a Fellowship of the Higher Education Academy

Action 14C- School to request that Research staff have the opportunity to participate in the Academic Practice Programme

(ii) Appraisal/development review

Career development planning is formalised through probation, for newly appointed Grade 6 lecturers, and PDR (introduced by the University in 2016). This provides the opportunity for all staff and their line manager to reflect upon performance and development in the last year and agree objectives and development plans for the forthcoming year.

The School has achieved 100% completion rates since the last submission, achieving an action set then. In the last staff survey (2017) 57% agreed that the PDR had been helpful in guiding them in their work.

“You get out what you put in”, “It can help to focus your activity and is good to have that dialogue”. All PDR reviewers have to undertake training to fulfil the role and uptake is 100%.

Action 12E- Survey on PDR to staff to see how the School can tailor it

Action 14D- Introduce a career development scheme for research staff - support given by a senior academic distinct from the PI to explore what support they might find useful for career development. Additional to the concordat programmes

(iii) Support given to academic staff for career progression

All research staff and academic staff on probation are assigned a senior academic mentor for career guidance and advice. Additionally, there is a College-wide mentoring system for staff at all career stages, piloted during 2016/17. The HoS has promoted this, and encouraged staff to train as mentors (a 2014 action). 4 staff members have acted as mentors and 3 been mentored under the scheme. The scheme will relaunch in June 2018 on a continuous basis.

There are two active early career researcher networks. One is at College level to enhance collaboration and provide peer support and the other is the Research Staff Association working across the University. The School and College provide substantial support for those preparing Fellowship applications, including ERC, Marie Skłodowska-Curie and EPSRC. (Section 5.3(iv)).

For newly appointed lecturers, the School provides enhanced Personal Development Funds of c.£2000 p/a, to support academic collaboration and travel. The School has a system of internal support and double internal peer review to uplift the quality of research funding applications.

In 2017-18 the College will fund 14 PhD scholarships (across 7 Schools) to projects supervised by a lecturer on probation. Training for PGR supervision is recommended but isn't mandatory. All supervisors have a senior colleague as second supervisor, for the benefit of the new supervisor and of the student.

There are significant differences in career progression between ECRs in Operational Research (OR) and other areas of mathematics. In pure mathematics, the global job market makes international mobility and language skills highly advantageous. Postdocs in OR are often preparing for a different career environment involving a future in industry or at the university/industry interface, with many more posts available within the UK. It is therefore vital that ECRs are mentored within their research group.

Action 13A- Promote new mentoring scheme

Action 14A- Provide opportunities for research staff to undertake teaching

Action 14B & 14C- Encourage RAs to undertake Academic Practice Programme as part of their preparation for an academic career. Support their application for HEA Fellow status

Action 16A- Make PGR supervision training compulsory

Action 17A- Continue research leave scheme

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

All students

The School runs a Work@1 weekly career advice event for final year undergraduates. This year our PhD students took the initiative to use one of these sessions to speak about PG research opportunities, including the possibilities for study abroad. The session was very well attended (40 undergraduates) and will now become an integral part of the Work@1 programme.

The current research students have become very engaged in addressing issues of awareness and concerns that female students may have about postgraduate study. They have done this by organising and running events to showcase research for current taught students. In 2017/18 in addition to the Work@1 session, they have recently held a 'Thesis in 3 minutes' afternoon for current research students to present a summary of their work to the SIAM-IAM Student Chapter. A monthly Women in Maths forum has also been established by a group of research students, open to students at all levels which currently has about a dozen regular attendees. The School has fully supported these activities administratively and financially.

The School has established a SIAM-IMA student chapter for students from final year undergraduate onwards. The chapter organises junior seminars, interdisciplinary workshops, visiting lectures and student prizes, and is a further means for students to meet mathematicians from other institutions and gain a perspective on the range of scientific careers available beyond their PhD.

Undergraduates

There are two University schemes to fund summer research projects for UG students which are designed to both encourage students to take a research project module in their final year and also to do higher degrees. The School has also funded additional projects. There have been between 2-5 funded projects each year and at least one female student in each cohort making up 30-50%. One female and one male student from the project cohorts since 2014 have continued to a PhD at Cardiff.

Students can request a female personal tutor and all students achieving a high average in Year One are seen individually by their tutor to discuss further study. Small group academic tutorials have been introduced for Year One and gender balance is considered as part of the allocations.

Postgraduate Taught Students

Students are encouraged to become members of the Operational Research Society to remain engaged with data science research and the academic community during and after their studies. Events are hosted at Cardiff and the School funds an annual visit to the OR Society Careers Open Day which includes information about further study.

Postgraduate Research Students

The School belongs to three postgraduate taught course consortia (MAGIC- mathematics, NATCOR-operational research, APTS- statistics) and contributes to the programmes. These consortia enhance the career prospects of research students by enhancing their subject-specific technical skills. We also fund an annual meeting in collaboration with other Welsh mathematics departments, at which two-three eminent speakers (at least one female) present one general talk, one technical talk and graduate students give 30-minute presentations. This is a stepping-stone for students between speaking at a departmental seminar and a national or international meeting and is fully funded by the School. All postgraduate research students have School funding to attend at one major international meeting and will also attend smaller meetings, often as part of LMS-funded research networks or EPSRC-LMS Durham symposia. The School funds attendance by any student at LMS Summer Schools, with support of the supervisor. The School has also financially supported an undergraduate (one p/a due to the limited number of participants) to attend the LMS Undergraduate Summer School.

Each student has two supervisors: one responsible for day-to-day technical supervision, and one involved in overall direction and advice. Both are equally responsible for ensuring that their students are informed about career prospects and possibilities, including techniques for academic job-hunting.

To ensure that all students are properly informed about the correct procedures for submitting their theses, the examination procedures and likely timescales, the School runs an annual event for students in their third year of research.

The School Bulletin and School Research Bulletin contain information about upcoming meetings which may be of interest to PhD students, as well as events in the School and the University.

The University-wide Doctoral Academy provides a wide range of career development events and non-discipline-specific training opportunities. There is also a Cardiff Researcher programme for research-only staff run between HR and the University's Doctoral Academy offering free courses over a wide range of topics including knowledge transfer, research governance and impact development.

- Action 7C-** Expand to include Work@1 event (to include more information) about PGT given by present PGT students
- Action 15A-** Develop a maths-specific training programme for PGR students
- Action 15B-** PGR training- mandatory training for all PGR students who teach
- Action 15C-** Support PhD students to achieve Associate Fellow status of HEA

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

All staff

Allocation is made within the workload model for academic staff to prepare grant applications. The monthly School Research Bulletin includes upcoming deadlines, links to relevant funding, and summaries about recent School applications. The School runs an annual research funding afternoon covering topics such as RCUK and other funding opportunities, Fellowships and how an EPSRC selection panel operates. Staff can review a library of successful applications, available via the School Research Manager.

All grant costings are completed by PS staff, including the funding sections of online application forms. Support staff also check that the uploaded documents are compliant and that all relevant activities are costed and justified.

Internal peer review of grant applications was overhauled in 2017. Our system now mimics double peer review of journal articles. Anonymity makes it easier for reviewers to write frank appraisals of applications by more senior colleagues, and the inclusion of ECRs in the reviewer pool also allows them to see examples of grant applications written in different styles. Reviewers are expected to write constructive reports.

Early Career Staff

The School has run a First Grants Club in the past; this now operates at College level. New academic colleagues are encouraged to apply for membership of the EPSRC Associate Peer Review College; all five applicants put forward at the last call were successful (three male, two female).

Our Fellowship support programme for Early career researchers includes access to past applications, formal training sessions on writing a good application, advice from existing Fellows, and review of proposals by external consultants. Senior academic staff in the School act as internal reviewers for Fellowship proposals from across the College and run mock interview/presentation sessions.

SILVER APPLICATIONS ONLY

5.4 Career development: professional and support staff

(i) Training

The University's staff development programme is the primary training provider for PS staff. 5-7 days of training per year is standard. As for academic staff, this includes courses for personal and professional development with face-to-face training as well as online modules. The mandatory training is also the same (online training on equality and diversity, information security and unconscious bias). IT skill development courses are available through the IT Service and includes the European Computer Driving Licence. Since 2015 there have also been several large University projects also providing technical training on bespoke software (Finance, Business Intelligence, Admissions) with relevant staff required to attend. The only area where a significant number of courses are delivered externally is IT e.g. by Apple. Line managers are encouraged to complete ILM accredited courses (Institute of Leadership and Management) to develop as effective line managers.

Course effectiveness and development are surveyed by the staff development team but local discussions also take place to inform the training plans of other staff.

Development needs are discussed with all professional services staff formally as part of PDR, and suitable training courses are booked online when delivered within the University, and via the IT team when delivered externally.

(ii) Appraisal/development review

The School has a 100% PDR completion rate, conducted by the line manager. As with academic staff, this is an opportunity to both assess the past year as well as to set objectives for the coming year. All those conducting PDR attend mandatory training. Feedback is that it is useful to look at wider objectives and development opportunities.

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

There has been a move across the University towards standardised job descriptions. To support career progression, all staff are encouraged to consider their short and medium-term ambitions and, depending on their aspirations, to apply for posts in other departments either as a secondment or a permanent move. The key skills and experience required are clear for each grade and role type, and line managers within the School are very supportive of staff gaining skills in order to progress. Typically, development of relevant skills and experience to achieve progression are embedded within PDR objectives and reviewed regularly informally as well as at the formal meeting.

The University has recently adopted a development framework for all PS staff- The Cardiff Professional- to be used by individuals (or line managers) to identify potential routes to progression. It is based on the AUA (Association of University Administrators) framework. From 2018 this has been incorporated into the PDR process for PS staff.

As stated above, most promotion occurs via a move within the University, either with a formal application or secondment. Since 2014, three PS staff (two part-time) have moved to posts in other departments and one to another HEI. All of these have been to higher grade roles.

Action 13B- Engage with new Professional Services Mentoring Scheme due to launch in 2018/19

5.5 Flexible working and managing career breaks

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

The University offers generous maternity and adoption leave schemes. With 12 months continuous service employees qualify for full pay for 18 weeks of leave, half pay for the next 8 weeks and 13 weeks statutory pay. 13 weeks unpaid leave can also be taken.

Staff are entitled to reasonable paid time off for antenatal appointments, as well as treatments advised by a registered medical practitioner. In the case of adoption, the primary adopter is able to take time off to attend up to 5 appointments and the secondary adopter up to 2 appointments.

Before going on leave staff (academic and professional services) meet with the School's HR Officer for details of the University support that is available before going on leave, and School support that is available to them on their return such as protected study time and requests for flexible working. This is to help staff understand how they can return to work flexibly if they wish.

A new section of the intranet has been developed by the College Equality, Diversity and Inclusivity committee specifically for line managers to understand their responsibilities both pre and post all types of parental leave. This includes a timeline, a leave calculator and guidance for how line managers can approach Keep In Touch days, any changes to the plans of staff members, and links to support such as the University's creche, childcare vouchers and other relevant policies.

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

When professional services staff go on maternity or adoption leave the role is usually covered with fixed-term replacement staff as the duration is typically between 6 months- 1 year. These are advertised as suitable for a secondment or as a fixed-term role.

There has been no maternity/adoption leave taken by academic staff during the last 3 years. The School would provide teaching cover through reallocation of using the University's workload allocation model to ensure fairness, as it does to provide cover for those on research leave.

Those on maternity/adoption/parental leave are offered up to 10 paid 'Keeping in touch' (KIT) days, to come into work whilst on leave if they wish, attend activities such as seminars, training or departmental meetings. Five members of PS staff have used these in the last three years.

Line managers maintain reasonable contact with staff on leave to discuss plans to return to work or any requested flexible working arrangements.

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

All staff returning to work following maternity/ adoption leave can use the University's Flexible Working policy to request adjustments to their contracted hours of work. The School introduced a study leave scheme for academic staff returning from parental leave in 2014 as detailed in the Bronze Action Plan. It is available to staff meeting the statutory requirements of the University's Maternity, Paternity and Adoption Leave Schemes and to all academic staff on the T&S and T&R pathways. It provides a period of up to 6 months to allow staff to complete research and/or scholarship projects to re-establish their careers with reduced (or no) teaching and administrative duties.

As part of the planning for the return of PS staff, any phased return to work will be agreed. This has included a trial of a new working pattern prior to a formal change to a working pattern has been

processed. [Redacted text]. No specific funding is allocated to returning staff but training would be suggested if systems or processes had changed during their period of leave.

(iv) Maternity return rate

[Redacted text]

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

These leave schemes are highlighted to staff once the School is informed of a change in circumstances. However, not all staff notify the School. We urge all staff to formally notify us and include information in relevant School material. Letters sent by Central HR contain references to the schemes available.

[Redacted text] When staff inform us that they are expecting to take paternity leave, parental leave is discussed as an alternative. All affected staff commented on the financial disincentive to use shared parental leave.

Action 10B- Include information on all leave schemes in the Staff Handbook and inform new staff as part of School induction

(vi) Flexible working

The University has a formal procedure for considering flexible working arrangements and the School publicises these in the Staff Handbook and in regular staff emails on working arrangements. If a member of staff wishes to make a flexible working request (which is a statutory entitlement) to alter their start/ finish times/ working commitment, the University's formal procedure is used. All applications for flexible working arrangements have been approved [Redacted text].

The School has developed a timetable request procedure for staff who require semester of year-long adjustments to be made to their teaching responsibilities in respect of caring responsibilities, disability, religion etc. (An Action from 2014). This allows the School to plan and promotes the availability of flexible working opportunities amongst staff. This is circulated to staff in the Spring Semester for action in the following academic year. The number of applications received in 2014/15, 2015/16 and 2016/17 for timetable changes was 6, 14 and 10, respectively. [Redacted text]. The School approved adjustments at either the beginning or end of the day for all applicants. If staff request adjustments at both the beginning and end of the day, they are directed to the University's arrangements for flexible working.

For professional services staff the formal arrangements are the same as for academic and research staff. There are a number of support staff with informal arrangements to suit their childcare or other caring responsibilities and the same level of flexibility is offered to all staff. Core hours for full-time staff are 10-4 and the hours outside these can be worked flexibly. Staff are required to inform their line manager of their preferred working pattern and to have an up-to-date online calendar. If staff require more flexibility than start and end times, a working pattern will be trialled and then formally processed once the member of staff is happy that it is sustainable.

There have been changes in working patterns for part-time staff, and some flexibility is used over start and end times, but to a far smaller degree as usually the reason for the part-time pattern is external constraints.

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

The University operates a career break scheme (unpaid) with the right to return to a post on the same salary and grade. Subject to specific eligibility criteria, a break of 6 months- 3 years may be possible. All academic and research staff who have taken career breaks have chosen to return on a full-time basis. No professional services staff who are part-time have expressed any interest in increasing their working hours but would be supported by the School if they did so. An application would be made to the College to increase the salary budget on the basis of a new job description agreed with the staff member.

Action 17B: Make staff aware on a regular basis about working patterns through regular HR email from HoS and mentioned in email about PDR

5.7. ORGANISATION AND CULTURE

(i) Culture

The School is making every effort to embed the principles of the Athena SWAN Charter by raising the profile of both what has been achieved by the School within the last four years but also what still remains to be done.

The principles most clearly embedded within the School are in active leadership (Principle 8), removal of short-term contracts (Principle 6), and in starting to make sustainable structural and cultural change (Principle 9).

As stated in Section 2 the School believes that positive working practices benefit all, particularly in a department with such a high proportion of early career staff. The School has made significant changes to become family-friendly and support work-life balance for all students and staff.

- Guidance requesting staff not to send emails outside working hours and to use out-of-office messages;
- Reminders to all staff to use their annual leave entitlements;
- The timetable request system to balance teaching, research/ scholarship and other commitments;
- Annual Christmas party for the children of all staff and research students since 2015 with an average of 20 children aged 1-11;
- All seminars and meetings within core hours;
- Unconscious bias training, i.e. showing the Royal Society video at a staff meeting;
- Equality, diversity and inclusivity mandatory training.

Prominent and visible senior female figures are still lacking however and we will continue to increase the understanding by all staff of equality and diversity

Action 18A- Seek University approval to name a prominent room in the School after Dr Rosa Morris, the first female head of a mathematics department in the UK

Action 19A- an equality impact review to be done on all working group topics within the School facilitated by a SAT member

(ii) HR policies

Many of these issues are surveyed in the biannual staff survey. The results are not available by career pathway due to the low number of female staff, so results are for the whole School.

86% of staff think they are treated fairly and with respect by their line manager. This falls slightly to 77% who feel that they are treated with respect by colleagues. The School response to this has been to raise the issue at all-School meetings and remind all staff of their obligations to one another. Dignity at Work advisors have also been appointed, given training, and their details given on posters around staff areas. The advisors represent a range of career paths and stages as well as gender.

Line managers of academic staff have regular group meetings with the Head of School to disseminate changes to policies or training. Professional Services line managers also have weekly meetings which include issues of staff workloads, training needs and are an escalation route if necessary. New line manager training will reinforce these responsibilities, including those related to EDI. The impact of this training will be assessed at College level.

The College HR team are involved in any issues of equality, bullying, harassment, grievance or disciplinary procedures to ensure consistency of practice. The School HR Officer emails important information both to line managers and all other staff, and cascades information from the College HR team who have monthly network meetings.

(iii) Representation of men and women on committees

Academic staff agree the full range of their duties, including committee membership, as part of PDR each year. Most committee memberships are due to administrative roles that academic staff hold. Other positions on committees are as representatives of research groups or career stages. All large administrative roles have Deputies drawn from less senior staff

		Members	Male	Female
School Board	Main decision making body	7	5	2
Board of Studies	All teaching staff	45	39	6
Examining Board	All teaching staff	45	39	6
Student-Staff Panel 2017/18	Advisory to Board of Studies (Students) 15 (Staff) 8	8 7	7 1	1
Admissions and Recruitment	Advisory to School Board and College.	7 (School) 4 (College)	4 1	3 3
Research Committee		12 (School) 4 (PS*)	11 1	1 3
Equality, Diversity and Inclusion		10	6	4

All full committee members counted whether academic or professional services.

*Staff from the Library Service and Research and Innovation Services.

The number of School Committees has reduced since 2014 and all meetings have time limits (1-2 hours). Rather than relying on formal meetings, the School will more often display information about proposed changes within staff areas and invite feedback over a fortnight, either by email or verbal comment. When issues require both wider and deeper discussion, these are raised at Away Days held twice per year as there is less time pressure and a more informal atmosphere.

Early career staff are encouraged to take administrative roles. These may not be part of the committee structure, but part of a shorter-term working group. These typically report to a committee and meet 2-3 times to propose solutions to specific issues, such as reviewing a single topic within the curriculum or how to better support fellowship applications.

(iv) Participation on influential external committees

The Head of School encourages all staff to consider applications to, and approaches from, external committees. The School uses the workload model to allocate the time for academic staff to participate in these activities. One female Senior Lecturer is the institutional contact with the LMS and 3 male and 2 female Lecturers/ Senior Lecturers have become part of the EPSRC associate peer-review College since 2014. Another female Senior Lecturer has recently been the Secretary of SIAM-UK. Staff on both Lecturer pathways (T&R, T&S) advancing from Early Career stage are encouraged to maintain and grow their external networks with appropriate funding from the School.

As staff become more established, funding and workload allocation are still used to recognise the benefit to staff and the School of wider engagement. The School has professorial representation on the Learned Society of Wales Board, EPSRC Fellowship Panels, and senior committees of the LMS.

(v) Workload model

The School workload model (Bronze action) has now been superseded by the University workload model from 2016/17. It is used as a model to allocate tasks and look at overall balance of activity for the coming year. Action is taken for staff whose workload +/- 10% of the standard 1500 hours.

Teaching tariffs for delivery and assessment are set in the University policy but research and other categories are determined locally. The School set a high tariff for citizenship to cover all committee meetings and engagement with peer reviewing (both teaching and research). There is additional weighting for teaching a module for the first time, and a general early career weighting.

All PDR Reviewers can view workload information about their reviewees. All other staff can only see their own personal details. Workload informs teaching allocations and discussions at PDR meetings. The data is not used in promotion criteria and the general categories are presented at staff meetings with anonymised data.

The data doesn't show any bias in allocation to female academic staff but there is a heavier average teaching allocation for staff teaching in the areas of Operational Research and Statistics compared to other academic areas. This is largely due to additional teaching for the MSc programmes.

Action 20A- A case will be made to the College for additional investment in this area

Action 4B- Agree additional workload allocations to lead on specific initiatives

(vi) Timing of departmental meetings and social gatherings

In 2015 the School introduced core hours for meetings and seminars following consultation with staff about convenient hours.

All formal School committee meetings, staff away days, seminars and colloquia are now timetabled in the time window: 10am-4pm. New staff are informed of this guidance during induction, part of the staff handbook:

The School guidelines are that there must be a compelling reason for these events to take place outside these core times. If an event is scheduled outside of this time window and staff are unable to attend, they are under no obligation to provide a reason.

When these guidelines were introduced there was not complete conformity immediately, with two research groups still holding events later than 4pm. As a sign of the cultural change occurring within the School, there are now no seminars outside core hours and all of the room bookings requested for 2018/19 are between 10am-4pm.

Other than research seminars and colloquia, the other regular social events are a monthly informal coffee morning for all staff which gets very positive feedback, a weekly postgraduate tea at 3pm for all PGR students and supervisors, and regular walks around local parks and points of interest for all staff and students.

Action 12D- Introduce listening lunches for groups of staff to feedback their views

(vii) **Visibility of role models**

The School monitors the gender balance of all seminar speakers and there has been significant change with an equal number of male-female speakers in 2016/17 for the most high profile series-School Colloquium. There are large differences between the other seminar series' gender balances and reflect the proportion of female academic staff in those areas. The seminar host (Chair) introduces the speaker who is usually the member of staff who suggested them. Therefore the host rotates because all staff are encouraged to invite speakers.

The College Symposium has a female speaker nominated by the School and in the annual Welsh Mathematics Colloquium 2017, 2 out of 3 plenary speakers are female.

Our culture change is supported by the LMS regulations where all LMS-funded events must have a gender balance.

Due to the good proportion of female and BAME students, images and videos of current students always represent this diversity.

Action 18C- To use review how seminar speakers are identified by learning from good practice in Analysis group

(viii) **Outreach activities**

Engagement activities are recognised in the workload model and can also be used as the basis for promotion, as participation in outreach has contributed significantly to the promotion of our female reader.

Taught students are recognised for their involvement by the Cardiff Award which forms part of the wider student transcript.

The total number of events and activities has been difficult to calculate as there are events organised at Society, School, College and University-levels involving staff and students across Schools. The examples below are of events coordinated in the School.

2016 STEM Ambassador programme 16 students (5 female, 11 male) completed STEM Ambassador training and actively volunteered at outreach events.

STEM Live! Two workshops within a large event in 2017.

10 members of staff and students supported the activities, 40% female and 60% male. The participants had a 50-50 gender balance as high schools brought whole year cohorts.

“Mathemagic” a 12 day event run in collaboration with the Operational Research Society and Techniquest supported by 14 staff and students (50% female, 50% male). No participant data was collected.

One female PhD student and one female researcher have received training for Soapbox Science since 2015.

6786 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.

993 words

Total word count 12,000

CASE STUDIES- REDACTED

7. FURTHER INFORMATION

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

N/A

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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Action Plan 2018-2021

Action No.	Issue and area for action identified	Action currently taken/ previous Action Plan	Planned Actions	Responsibility and Accountability	Timescale	Success Measures	Benchmark
Section 3- Self-Assessment							
1A	SAT does not include sufficient staff or student representation	SAT includes staff balance of gender, career stages and career pathways, caring responsibilities and one UG student rep.	Refresh SAT staff membership and ensure balance of gender, ethnicity, career stage, career path	Head of School	June 2018		Membership of SAT at next application to reflect this balance
1B			Refresh SAT student membership and ensure equal representation by gender and from all levels of study	Head of School	June 2018	A better feedback loop via the SAT members to all staff and students	Action Plan update in 2019 to have more staff listed as Responsible and Accountable
1C			Rename SAT to be EDI	Head of School	June 2018	Wider terms of reference	
1D			Set committee term of 2 years and every member is to be part of a specific action group		Oct 2018	Involvement of more staff in identifying the issues, proposing solutions and implementing changes	
2A	Communication of the action plan and the work of the SAT has been predominantly verbal and staff-focused	Communication currently via School meetings and the School shared drive	Develop a School communications plan for EDI with the College Communications team	School Manager	Dec 2018	(Applies to all actions)	
2B			Use School-specific intranet to hold information relevant for staff (this is not available for students)	School Manager		Conduct School EDI survey in 2019 and 2021 to assess communication strategy	At least 75% of staff know where to find EDI information and who the contacts are
2C			Extend and enhance the information on School internet pages for wider visibility	School Manager	2019		

			Hold a focus group of students to develop the student elements of the communications plan. Use the School Newsletter to promote actions	School Manager/ Director of Learning and Teaching School Manager/ Editor			
2D							
2E							
3A	A limited number of staff members have access to GW4 and other networks	Members of SAT currently attend GW4 meetings and other events and have benefitted from wider engagement	Maintain this engagement and School funding for participation. Extend the funding to senior PS and research staff for EDI events	Head of School	From 2018/19	Information from external EDI events to be discussed at SAT meetings and best practice developed elsewhere in the sector to be implemented within the School	At least two examples of best practice developed in the sector to be implemented in the School by 2021
4A	Lack of visibility of the time commitment of EDI work in the School	2014 Action 19 to implement workload model and communicate it to staff. The model is published, aggregated and anonymised	Extend the information published to include a list of administrative roles, including EDI to give greater visibility to the work Agree additional workload allocations to lead on specific initiatives	Head of School School Board	From 2018/19 2018/19	Information given at all staff meetings and available on intranet/shared drive	Time commitment of EDI work in the School is not currently transparent
4B							
Section 4- Student Data							
5A	Maintain and increase the number of female undergraduate students.	Data presented to School Board annually. Follows 2014 Actions 1&3 to increase the numbers of	Continue to monitor student data All programmes to have a gender balance above the sector average.	Education and Students Manager Director of Admissions	Ongoing 2019/20	Gender balance on all programmes in Yr 3 and 4 to be same % as BSc Mathematics	UK average or 45%, whichever is higher.
5B							

		female students, particularly on the M-level programmes	Monitor Masters level holistically- MMath, MMORS, MSc to see total numbers at Masters level and for this proportion to be at least equal to the BSc programmes.	Admissions team	From 2018/19	Gender balance across the set of M level programmes to be same as BSc Mathematics	
5C			Perform data analysis on progression from Years 1 and 2 annually and to also extend to use other data on protected characteristics.	Education and Students Manager	Nov 2018/19	Action plan developed during 2018/19 based on findings. Progression by students with any protected characteristics should be the same as the progression for all other students.	Data not currently collected
5D							
6A	More female students to undertake MMath and MMORS programmes	Follows 2014 Action 3 to increase the numbers of female students on M-level programmes	To promote MMath/ MMORS as default programmes at entry	Director of Admissions	From 2018/19	Central admissions team given guidance and all School information to emphasise the 4-year programmes.	50% of Yr 1 cohort on these programmes by 2020.
6B			Gender balanced programme of speakers at Open Days	Director of Admissions	Oct 2018	One of the three speakers to be female.	No current data gathered
6C			Review communication with applicants between offer of a place and enrolment and highlight areas such as accommodation, the academic content of the course and the industrial placement opportunities available	Admissions team	Jun 2018	Better data about which students will enrol. Increased conversion of PGT students	

7A	Increase the number of female PhD students	Follows 2014 Action 4 to increase the number of female PhD students.	Secure more funding for PhD studentships from a wider range of sources	Head of School/Director of Postgraduate Students	May 2018	Increase joint PhD applications with other disciplines- 3 per year by 2020/21 Include studentships on standard grant applications- 2 per year by 2020/21 Apply for College match-funding on First or large grant applications- 3 per year by 2020/21	0 in 2017/18 0 in 2017/18 2 in 2017/18
7B			Continue to support the new 'Women in Maths' initiative by PhD students to encourage more undergraduates to progress to doctoral research	School Manager	From May 2018	Monitor attendance and get 20 regular attendees in 2018/19 and 25 in 2019/20	Attendance not currently monitored
7C			Repeat Work@1 session and extend to include PGT information	Knowledge Exchange Officer	2018/19	Monitor attendance 50 attendees	Increase attendees to 50 students
7D			Support summer projects across every research group	Head of School	Oct 2018	5 funded projects per year and all research groups to supervise at least one project by 2019/20	Summer projects not currently offered in every research group
8A	Increase the number of	Follows 2014 Action 4 to increase the	Have gender balanced PGR and PGT admissions teams	Head of School	Oct 2018	1 female member of staff to become a core member of the	Currently 0.

8B	female PhD applicants	number of female PhD students.	Extend interview process for students with an alternative source of funding (self-funded, overseas government funding)	Director of PGR	From Oct 2018	admissions team and 2 to contribute to interviewing	Currently 0 overseas government funded applicants are interviewed
8C			Director of PGR to review all rejected applications and identify advice that can be given to future applicants or supervisors	Director of PGR	From Oct 2018	At least 20 applicants with an alternative funding source to be interviewed from 2018/19	Currently only basic information is provided to applicants

Section 4- Staff Data

Action No.	Issue and area for action identified	Action currently taken/ previous Action Plan	Planned Actions	Responsibility and Accountability	Timescale	Success Measures	Benchmark
9A	Provide support for female PGR students to continue in academia (in Cardiff and elsewhere)	Follows 2014 Action 7- to support female graduate academic careers	Organise annual event delivered by female ECR staff to encourage more PGR to undertake research careers.	Director of Research	From Oct 2018	Annual event organised and attended by at least 50% of PGR in Yr 3 and 4.	Event not currently given.
9B			Monitor career destinations of doctoral graduates.	Director of Research	From Oct 2018		
9C			Monitor gender balance of PGR who teach in the School	Director of Learning and Teaching	From Oct 2018	Ensure that priority is given to achieving gender balance of PGR who teach core modules in the School.	Gender balance not currently monitored.
10A	Embed continuous improvement ethos to	2014 Action 13 to develop School induction process	Refine the School Staff Handbook by inviting feedback from recently appointed staff.	Head of School/Convenor of Newcomers Forum	Oct 2018	Improved response to the question on induction in Staff Survey.	School Staff Handbook and induction Checklist exists.

10B	induction and school information		Include information on all leave schemes in the Staff Handbook and inform new staff as part of School induction.	Head of School/School HR Officer	Oct 2018	Staff Handbook and induction checklist updated. All line managers to undertake new College training programme for line managers by 2019. Information to be added to induction checklist.	School Staff Handbook and induction checklist exists.
10C			Increase awareness of University networks and WISE as part of School induction.	School HR Officer	Oct 2018		
11A	Support career development of academic staff	Follows 2014 Action 9 & 10 to increase awareness of promotion and mentoring. Staff are invited to submit their CVs for review but current review date is too close to the University deadline to respond to detailed feedback.	Monitor CV discussion and widen the review group to include senior female Recently promoted staff to hold advice session	Head of School	2019	All staff except professors and probationers to submit CV prior to PDR to be reviewed by senior staff	Staff have time to respond to detailed feedback on their CVs to improve promotion preparation
11B							
12A	Lack of feedback mechanisms	No formal action currently taken	Develop system to get feedback on induction and College networks. Staff survey question about the effectiveness of having a mentor	HR Business Partner Head of School	2019/20		No feedback currently received except for 12E School staff survey to have 75% respondents finding these forums useful
12B							

12C			Ask for feedback on Grants Club	Director of Research			
12D			Introduce listening lunches for groups of staff to feedback their views	Head of School			Response to staff survey question on usefulness of PDR increased to 70%
12E			Survey staff on usefulness of PDR to see how the School can tailor the process				
13A	Promote mentoring for career development	Follows 2014 Action 9 to promote academic mentoring schemes	Promote new mentoring scheme	Head of School	2019	Mentor and mentee opportunities promoted to all staff with at least 3 accessing this scheme as a mentee and another 3 offering to be a mentor by 2019	New scheme
13B			Engage with new Professional Services Mentoring Scheme due to launch in 2018/19	School Manager			
14A	Support research staff career progression	No actions currently undertaken	Provide opportunities for research staff to undertake teaching	Head of School/Director of Learning and Teaching/Director of Research	2019	Every member of research staff to construct a career strategy plan with their senior mentor	No current benchmarking available as current support is ad hoc
14B			Support research staff who wish to apply for a Fellowship of the Higher Education Academy				
14C			Seek approval for research staff to participate in the University's Academic Practice Programme				
14D			Introduce a career development scheme for research staff with support given by a senior academic distinct from the PI			Increase the number of Researchers applying for independent research fellowships	No data collected

15A	Support PGR for career progression		Develop a discipline-specific training programme of talks, skills and careers sessions with input from students	Director of PGR	2020	Training programme to be developed and success measured by means of an annual survey with an overall measure of helpfulness of 70%	Dedicated training programme for PGR does not exist
15B			Provide mandatory training for PGRs who teach				
15C			Supporting PhD students to achieve Associate Fellow status of HEA				
16A	Supervision of PGR students	Training is encouraged but not mandatory and not monitored	Make PGR supervision training compulsory	Director of PGR	2020	All new supervisors to have completed this training by end of 2018/19 and all existing staff by 2019/20	No records currently kept
17A	Returning from long periods of leave	Follows 2014 Action 21 to develop and implement a policy for research leave	Continue research leave scheme	Head of School	Ongoing	Maintain 100% return rate from maternity and 80% of eligible staff to use scheme	100% return
17B			Make staff aware on a regular basis about working patterns through regular HR email from HoS and mentioned in email about PDR	PDR Reviewers			

Section 5- Culture

18A	Visibility of female role models	2014 Action 15 to ensure gender balance of seminar speakers	Seek University approval to name a prominent room in the School after Dr Rosa Morris, the first female head of a mathematics department in the UK and create suitable literature to be displayed outside the room	Head of School	2019	Increased visibility of the role and achievements of female academics in the School	Named room and material that can be read by visitors or students outside the room
18B		All of the brochures and	Promote the visibility of female staff and PhD students in the	Head of School/Director of	2019		Posters to be in both staff and student areas

		website are reviewed regularly	School through posters and School recruitment literature and webpages	PGR/School Manager			
18C		50-50 gender balance at School Colloquium but variance across research groups	To review how seminar speakers are identified. Use Analysis group session for other groups as best practice and to get overview	Director of Research/ Seminar organisers			All Research Groups to have 20% female speakers over the period
19A	Embed EDI across School activities		An equality impact review to be done on all working group topics within the School. This will be facilitated by a SAT member and follow the principles of the full equality impact assessment with a shorter proforma. To promote a deeper understanding of equality and diversity	School Manager	From 2018/19	All areas of activity that form the focus of working group to undertake an equality impact review by end of 2019	Equality impact reviews currently only undertaken for new taught programmes
20A	Reduce teaching load on two research groups who deliver the MScs	There have been 3 additional posts in this area, but also a significant rise in the number of students	A case will be made to the College for additional investment in OR/ Statistics/ Financial Mathematics	Head of School	From 2018	Two additional posts made in these research groups by 2019/20 to reduce number of MSc projects supervised to 4 per staff member	Number of MSc projects supervised currently 7+ per staff member
21A	Increase School engagement with widening access partners		Work with the Further Maths Support Network in supporting teachers and preparing school pupils for degree-level mathematics	Director of Engagement/ Knowledge Exchange Officer	From 2018/19	Increase in UCAS applications for STEM at partner Schools	School data on UCAS applications