



Athena SWAN Bronze department award application

Name of university: University of Sussex

Department: Department of Mathematics

Date of application: April 2016

Date of university Bronze and/or Silver SWAN award: April 2013

Contact for application: Dr Yuliya Kyrychko

Email: Y.Kyrychko@sussex.ac.uk

Telephone: 01273 872884

Departmental website address: <http://www.sussex.ac.uk/maths>

Athena SWAN **Bronze Department** awards recognise that in addition to university-wide policies the department is working to promote gender equality and to address challenges particular to the discipline.

Not all institutions use the term 'department' and there are many equivalent academic groupings with different names, sizes and compositions. The definition of a 'department' for SWAN purposes can be found on the Athena SWAN website. If in doubt, contact the Athena SWAN Officer well in advance to check eligibility.

It is essential that the contact person for the application is based in the department.

Sections to be included

At the end of each section state the number of words used. Click [here](#) for additional guidance on completing the template.

1. Letter of endorsement from the head of department: maximum 500 words

31st March 2016

Dear Athena SWAN panel members,

I write as the Head of Department of Mathematics to confirm my very strong support for this application for an Athena SWAN Bronze Award.

I know that we can make the changes set out in our Action Plan in order to improve gender balance at all levels in our department. Indeed, empirical evidence shows that it is possible to gradually reduce gender gaps; for example, in Italian Universities, the number of junior faculty is 50% women; female associate professors are 39.4% of the total and female professors only 17.6%. Our 2016-2019 Action Plan focuses above all on three key objectives: to recruit greater numbers of female PG(R) students; to recruit greater numbers of female academics at all levels; and to develop the career and opportunities of female academics already employed in our Department. All our staff understand the importance of the targets that we have set in these three key areas.

Since my appointment in August 2015 as Head of Department, I have prioritised the recommendations of the Athena Swan panel, and we have been able to introduce a range of initiatives aimed at improving staff work-life balance, including:

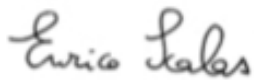
- all School and Departmental meetings are scheduled in core hours (10am-4pm), and largely avoid school holidays;
- a simplified application process for teaching between 10am-4pm;
- implementing a workload model, with a reduction of the workload to 60% for those returning from long-term caring leave for one term;
- the appointment of two dedicated Equality and Diversity Champions (we are the first School in the University to have these);
- all departmental appraisals now including a promotion checklist, which ensures that career progression is the main focus of the appraisal;
- both Unconscious Bias and Equality and Diversity training are compulsory for all staff involved in recruitment at any level, and will be included as part of induction.

We have identified that up to August 2015, two of our female colleagues had too high an administrative workload. I am particularly pleased that a strategy is now in place to rectify this situation, and at the same time deliver a better balance between the urgent need for female representation on Departmental committees with the need to avoid the role overload.

Initiatives such as the Athena SWAN Charter and the Athena SWAN awards are vital to achieve the principles sanctioned in the Universal Declaration of Human Rights. For this reason, at the Department of Mathematics at the University of Sussex, we are strongly committed to achieve gender equality, and we have already joined the London Mathematical Society Good Practice Scheme.

I believe that we have a strong case for a Bronze award. We have identified 23 actions to be taken to improve gender equality at every level for all of our stakeholders: undergraduate and postgraduate students as well as staff members, in order to create a fair and unbiased study and work environment.

Yours sincerely,

A handwritten signature in cursive script that reads "Enrico Scalas".

Professor Enrico Scalas

Head of Department, Mathematics

(493/500 words)

2. The self-assessment process: maximum 1000 words

2a) The self-assessment team (SAT)

Rosie Barnard, second-year Mathematics PhD student, has experience of student representation and has worked at admission days for prospective students. She has represented postgraduate students on SAT.

Konstantin Blyuss, Senior Lecturer in Mathematics, is coordinating the departmental visiting/study-abroad programme and is a Senior Tutor for postgraduate students (PGs). He has advised on issues affecting taught PGs.

Oonagh Caunter, School Administrator, School of Mathematical and Physical Sciences (MPS), has been involved with gender equality since 2011. She has provided administrative support to SAT and compiled the data.

Steve Churchwell, MPS Technical Services Manager, MPS Equality and Diversity Champion, manages staff providing technical and IT support in the School. He is also MPS Safety Coordinator, and has provided guidance on health and safety issues, including those related to disability and pregnancy.

Miroslav Chlebig, Reader in Mathematics, is married with one daughter. His wife is also an academic, and they have experience of balancing childcare with full-time jobs. On SAT he has represented views from members of the Department.

Barry Garraway, School Director of Student Experience, has three children in primary/secondary education, both parents work. He has provided advice on issues related to UGs in the School, as well as university-level Equality&Diversity policies.

Peter Giesl, Reader in Mathematics, MPS Director of Teaching and Learning, is the curriculum lead for Mathematics. He has three young children, and shares childcare responsibilities with his wife. He has advised on the current departmental/School policies related to Teaching and Learning.

James Hirschfeld, Tutorial Fellow, Professor of Mathematics, is married with two children, and two grandchildren. He has completed 50 years at Sussex, and works full-time. As Senior Tutor for UGs, he has been instrumental in advising on all aspects of student experience.

Rhiannon Hawkins, second-year Mathematics student and student rep. On SAT, she has represented current undergraduate students (UGs) and informed students about Athena SWAN activities.

Yuliya Kyrychko, Senior Lecturer in Mathematics, SAT Chair, is the Deputy Chair of the Exam Board and a member of the University Athena SWAN SAT. Her husband is also an academic at Sussex. She is leading this submission, and will be overseeing the implementation of the Action Plan.

Margarita Kostadinova, HR Advisor, provides HR-related support to the Line Managers and employees. She has provided staff data for the submission, and information about fair employment policies.

Mariapia Palombaro, Lecturer in Mathematics, is a member of the Teaching and Learning Committee. She was appointed shortly after the birth of her daughter, and has benefited from reduced teaching load. Her husband is also an academic at Sussex. She has shared her suggestions for supporting women returning from maternity leave.

Megan Peacock, second-year Mathematics student. On SAT, she has represented current undergraduate students (UGs) and their views on the departmental policies related to UG activities.

Enrico Scalas, Professor of Statistics and Probability, Head of Department. He is currently supervising two female PhD students. He has advised on the future developments of departmental policies, his support will be vital in the successful implementation of the Action Plan.

Feng Wei Wang, Postdoctoral Research Fellow in the field of mathematical biology. He has graduated with a PhD from the University of Leeds, and is married. He has provided views from Research Fellows' perspective.

2b) The self-assessment process

An initial discussion regarding the departmental submission took place in May 2014, aiming at the April 2015 submission, and the SAT Chair was appointed. The opportunity to become SAT members was advertised to **all** staff and students, and membership was finalised in September 2014. Since then, the Department has **successfully applied** for recognition as an LMS Good Practice supporter, and this was **awarded** in November 2014.

The SAT

- Comprises 46% females and 54% males;
- Holds formal regular meetings (every 4 weeks) and has met informally on several occasions;
- Has a diverse range of representatives across staff members and postgraduate and undergraduate students;
- Regularly reports to the University SAT (every 6 weeks), Departmental and School meetings (once per term) through SAT Chair;
- Each SAT member is responsible for communicating Athena SWAN related activities to their allocated group of staff and students;

After reviewing very encouraging feedback from our unsuccessful April 2015 submission, it was agreed that a resubmission should be made in April 2016. The resubmission SAT has retained the majority of its members, however, the possibility of joining the team was widely communicated to **all** staff and students.

The self-assessment process involved:

1. Careful **review of the feedback** following April 2015 submission, actions completed,

on-going and further actions required to elucidate the three-year action plan, and further on. A particular emphasis was made on what the Department/School **should do beyond** current University policies to better support women at various stages of their careers.

2. **Collection** of updated staff and student data, to guide the implementation of initial interventions.
3. **Staff survey** on attitudes and perceptions within the department. The survey was opened in January 2016 for four weeks. It was anonymous and voluntary, with 82% response rate.
4. **Careful analysis** of data, including survey results, identification of priorities for Action Plan and writing of Athena SWAN application.

Each SAT member was responsible for reviewing at least two successful submissions from other Mathematics Departments, and identifying good practice that could be taken forward in our Action Plan. The School has also funded an external equality consultant, Miranda Coates, who provided an independent review of the Departmental policies, and put forward new perspectives and ideas for improving current Departmental policies and initiatives.

2c) SAT future plans

SAT will meet twice a term to assess the success of the current Action Plan, identify further initiatives, and promulgate best practice. The membership of SAT will be reviewed each year, with open elections held to ensure SAT reflects diversity of activities and staff interests within the Department and gender/role balance.

Our ultimate aim is to create practices and change the departmental culture to a level where it would deserve an Athena SWAN Gold Award. The current submission and the self-assessment process leading to it are important steps in this direction.

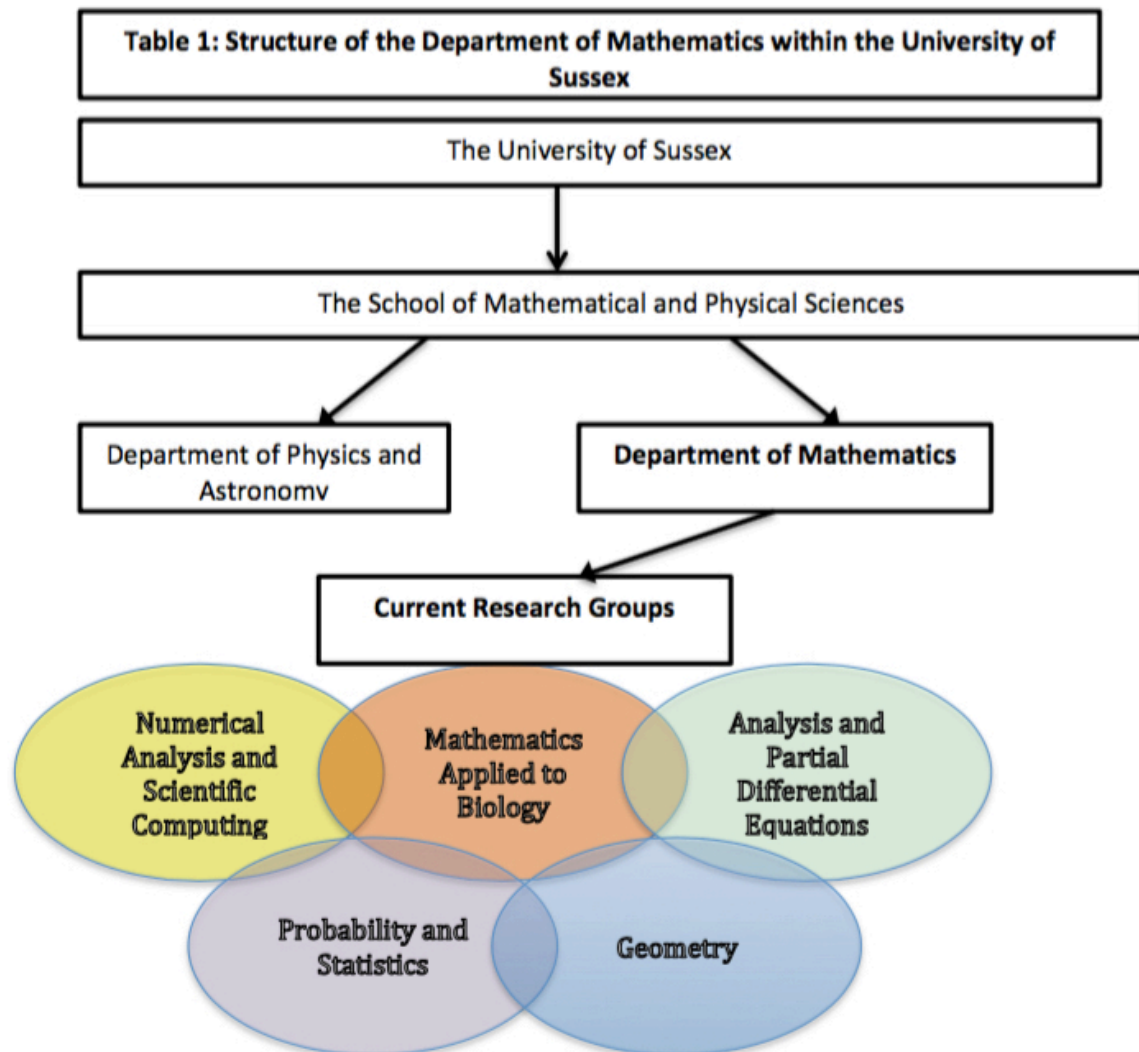
Total: (1000/1000 words)

3. A picture of the department: maximum 2000 words

3a) Pen-picture of the department

The University has 12 Schools, with some Schools further divided into departments, and is campus-based. The School of Mathematical and Physical Sciences (MPS) comprises the Department of Mathematics and the Department of Physics and Astronomy (Table 1). The School is the main cost centre, so the Departmental financial independence is limited, with decisions on academic appointments, strategic planning and similar being taken at the School and University level. The School is led by the Head of School (HoS), Professor Peter Coles, with line management of academic staff within each department by HoDs. The HoD of Mathematics is Professor Enrico Scalas. Decisions about departmental research strategy, teaching duties, allocation of PhD studentships, and administrative tasks are made through Teaching and Learning, Research, Athena SWAN and various other committees. The

departmental meetings take place termly, and are open to all academics, postdoctoral researchers, and undergraduate and postgraduate student representatives.



In order to improve staff experience, the School has taken an initiative to appoint two Equality and Diversity Champions (one male, technical support staff, and one female, an academic staff member), whose role is to ensure that staff are clear on institutional policies, and be the first point of contact for an informal chat and/or advice for people who have a concern.

The Department's research activities are broadly focussed around five research groups (Table 1). In the recent REF, 90% of all eligible academics were entered, including 100% of female and 88% of male members of staff.

The department has grown substantially in recent years. It has a long-standing commitment to equality and diversity, and includes members of staff from 13 countries and 4 continents, which drives its research excellence blended with unique cultural diversity. There are 23 permanent staff members, 6 part-time members of staff, one Research Fellow and 11 members of support staff.

The departmental initiatives to support “dual career” partnerships with school-aged children include allowing for flexibility in teaching timetabling to enable school drop-offs and pick-ups. Email reminders are sent before teaching timetabling is finalised, so that any staff member with caring responsibilities can apply for formal flexible working arrangements. This allows requests for a more accommodating teaching schedule to balance caring responsibilities.

Following the advice of SAT Committee, the Mathematical and Physical Sciences (MPS) School has streamlined the current University procedures, and has implemented a simplified MPS procedure for flexible working arrangements related to teaching schedule.

The Department offers a range of exciting and cutting-edge BSc, MMath and MSc degree courses both as single and joint subjects, and PhD degrees. We also run a separate Foundation degree course. Successful completion of this course guarantees acceptance to any of our undergraduate degree courses without the need to apply through UCAS.

The University operates a three-term academic year, where the Autumn and Spring terms are dedicated to teaching and assessments, and the Summer term consists solely of assessments. The University has implemented a new academic year structure since October 2015, with a two-week break around Christmas and Easter periods, which is especially beneficial for staff and students with childcare responsibilities.

From day one, all undergraduate and taught postgraduate students in the Department are allocated an Academic Adviser, who meets regularly with them (every week for first-year undergraduate students and at least twice-termly for all other students) to advise and help with any academic matters.

3b) Student and staff data for the last three years

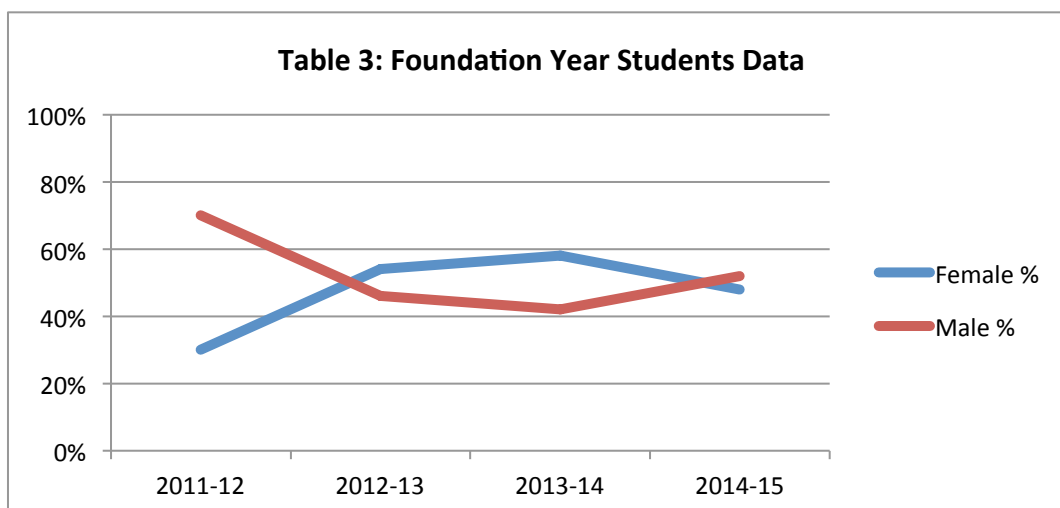
Student data

3b(i) Numbers of males and females on access or foundation courses

The Department runs a Mathematics BSc degree with a Foundation year for students, who do not meet the entry requirements for a BSc/MMath but want to pursue a degree in Mathematics. Although the numbers are small, the data shows a steady increase in the number of female students since 2011 with a slight drop in 2014/15 (Tables 2&3). We will investigate this issue, which may be the consequence of female students outperforming their male counterparts in A-level mathematics, leading to fewer female applicants needing to enrol onto the Foundation Degree. **Action Point 1.**

In order to maintain this high level of female participation, all promotional material, including student prospectus and course webpage feature interviews with female students.

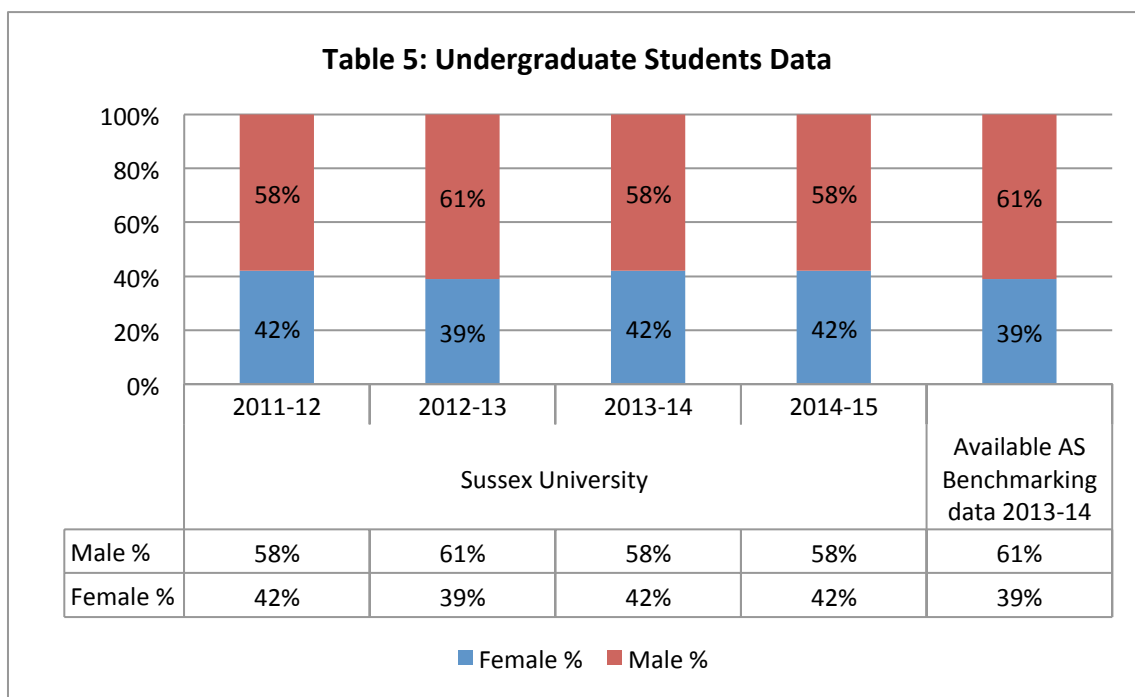
Year	Female	Female %	Male	Male %	Total
2011-12	7	30%	16	70%	23
2012-13	14	54%	12	46%	26
2013-14	11	58%	8	42%	19
2014-15	11	48%	12	52%	23



3b(ii) Undergraduate male and female numbers

The departmental proportion of undergraduate female students is 42%, which is slightly higher than the UK average of 39% (HESA benchmark, 2013/14) as shown in Tables 4-5. We work extremely hard to ensure all our admission and open days are welcoming and inclusive for female applicants. In the future, we will include focus groups to explore potential female students' perceptions of our offer. We have two admission tutors, one of each gender, and we run a number of outreach events staffed by male and female staff and students. The undergraduate online prospectus has been completely redesigned, and prominently features a mix of male and female students. Our data is encouraging, and we will carry this momentum forward with the aim of continuous growth in the number of female students. Detailed analysis by gender will enable us to meet our target of a 50:50 balanced intake by 2019. **Action Point 2.**

Table 4: Undergraduate students data					
Year	Female	Female %	Male	Male %	Total
2011-12	102	42%	143	58%	245
2012-13	105	39%	162	61%	267
2013-14	125	42%	171	58%	296
2014-15	136	42%	187	58%	323

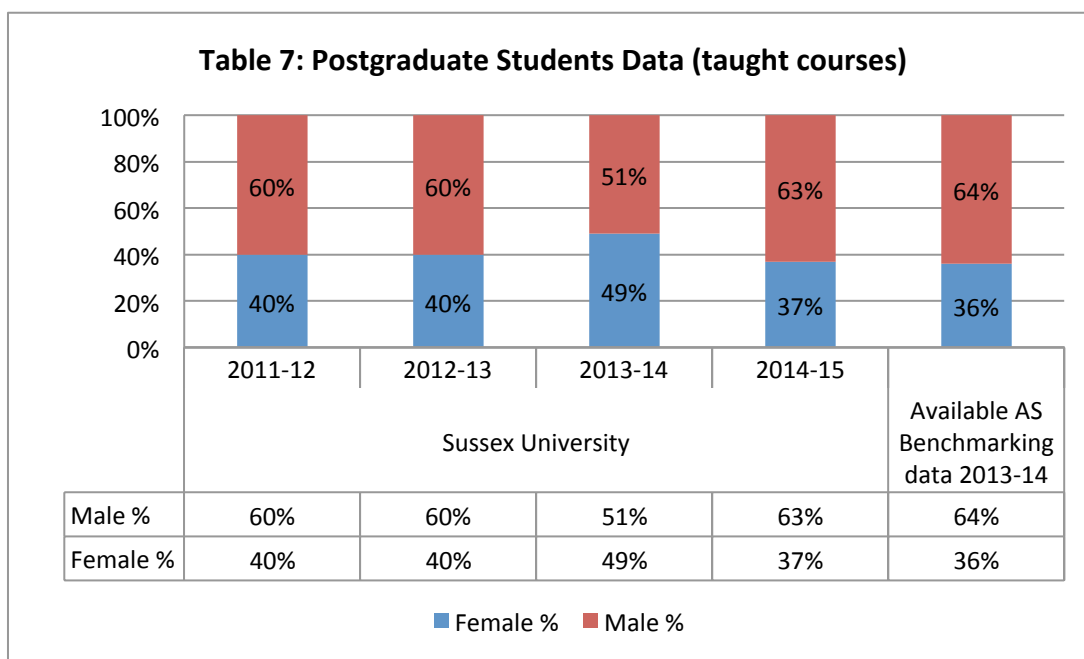


3b(iii) Postgraduate male and female numbers completing taught courses

The ratio of female:male students was 40:60 in 2011/12, and improved to almost 50:50 in 2013/14 (Tables 6 -7). In 2014/15, however, we experienced a significant decrease in the number of taught postgraduate students, with a marginally higher number of female MSc students (37%) compared to the national average (36%). It should be noted that the majority of our MSc applicants comes from overseas, many from countries with a higher percentage of university-educated men than women. **Action Point 3.**

In addition to currently offered MSc courses, a new MSc in Data Science starts from 2016/17 and is available on a full- or part-time basis. The Department intends to boost the overall number of the MSc students, and attracting female students is a high priority. **Action Point 4.**

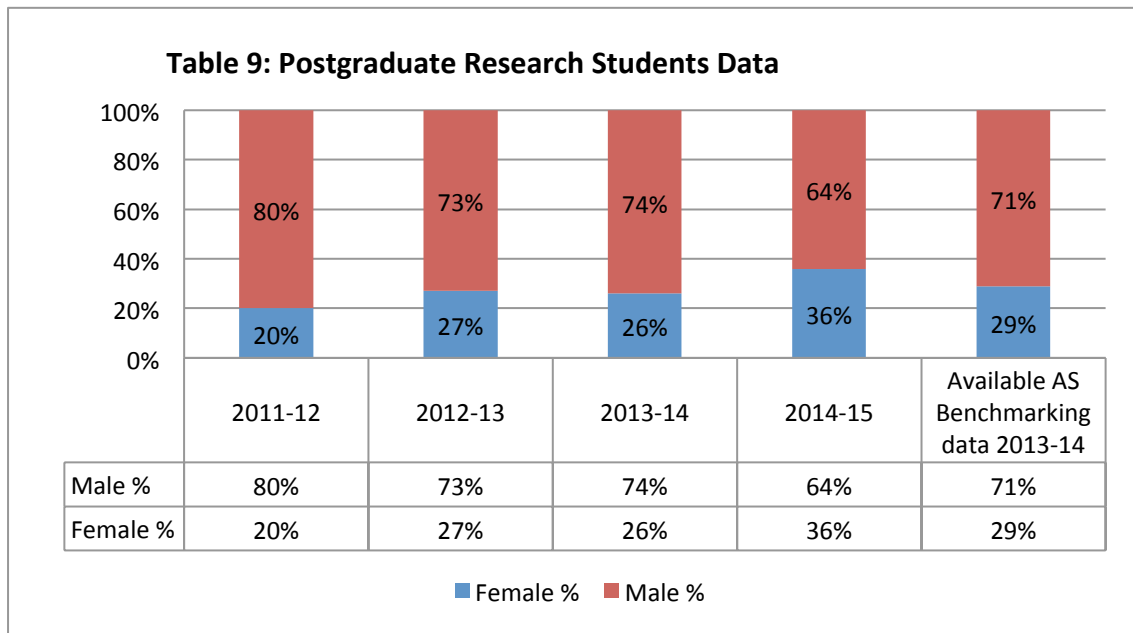
Table 6: Postgraduate students data (taught courses)					
Year	Female	Female %	Male	Male %	Total
2011-12	37	40%	55	60%	92
2012-13	45	40%	67	60%	112
2013-14	49	49%	50	51%	99
2014-15	15	37%	26	63%	41



3b(iv) Postgraduate male and female numbers on research degrees

The current female:male ratio for the postgraduate research students is 36:64 (Tables 8-9), which is encouragingly higher than the national average of 29:71. Moreover, the Department has seen a steady increase in the number of female PhD students in the last four years. The main concern is funding available to PhD students. Each year the School Research Committee submits recommended PhD projects to the University, which allocates doctoral training scholarships, and this process needs to be made clearer to staff. All available scholarships are widely advertised, and staff are actively encouraged to identify high calibre undergraduate females, and support their applications for PhD programmes. All staff involved in interviewing of PhD candidates are now required to have Unconscious Bias training to ensure fairness in all aspects of the recruitment process. **Action Point 5.**

Table 8: Postgraduate Research students data					
Year	Female	Female %	Male	Male %	Total
2011-12	5	20%	21	80%	26
2012-13	8	27%	22	73%	30
2013-14	9	26%	26	74%	35
2014-15	21	36%	37	64%	56



3b(v) Ratio of course applications to offers and acceptances by gender for undergraduate, postgraduate taught and postgraduate research degrees

At **undergraduate level** (Table 10):

- the percentage of female applicants offered a place of study is around 96% compared to 92% for male applicants;
- acceptance of offers is consistently higher for female applicants;
- applications from students dropped in 2013 and 2014, which resulted in a slight reduction in the percentage of female applicants.

The higher conversion rate from offers to acceptance among female applicants indicates that the Department is viewed as a highly attractive place to study for female undergraduates. We are putting a significant effort into running open days and various outreach activities for local schools throughout the academic year, which are organised by staff and current UGs of both genders.

For **taught postgraduate students (PG(T))** (Table 11):

- the percentage of offers to female applicants has steadily increased
- the female acceptance rate has increased to 52%

The recruitment of PG(T)s is done through the university PG open days, where we always ensure that staff of both genders are represented. We have completely redesigned our PG(T) online prospectus, are actively advertising MSc courses to our current undergraduate students, and are launching a cross-disciplinary MSc course in Data Science starting in 2016/17.

Table 12 shows an increasing number of applications from potential **postgraduate research (PG(R)s)** students. Almost all funded PhD positions are available to UK-domiciled students, and are advertised openly. Although the percentage of female applicants is low, the percentage of offers made to female applicants is consistently higher than for males. The ratio of female:male in acceptance of offers has steadily increased in the last three years. This suggests that to increase the number of female PG(R)s, we need to increase the overall number of applications. To achieve this, we will explore the perceptions of PhD study among our current female UG population, and then design and run inspirational workshops yearly to encourage such applications. **Action Point 6.**

Table 10: Mathematics applications data – undergraduate (UG)							
(% is the percentage of the previous stage, e.g. acceptance versus offers)							
2011							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	149	39%	146	40%	63	41%	43%
Male	238	61%	221	60%	89	59%	40%
Total	387		367		152		
2012							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	219	39%	208	40%	80	41%	39%
Male	349	61%	317	60%	116	59%	37%
Total	568		525		196		
2013							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	169	35%	162	36%	68	38%	42%
Male	310	64%	286	64%	112	62%	40%
Total	479		448		180		
2014							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	133	34%	113	34%	53	37%	46%
Male	259	65%	219	65%	90	63%	41%
Total	392		332		143		

Table 11: Mathematics applications data – postgraduate taught (PG(T))

(% is the percentage of the previous stage, e.g. acceptance versus offers)

2011							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	403	45%	136	45%	87	44%	64%
Male	495	55%	169	55%	112	56%	66%
Total	898		305		199		
2012							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	414	47%	145	49%	104	50%	72%
Male	461	53%	148	51%	102	50%	69%
Total	875		293		206		
2013							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	243	44%	114	43%	56	38%	49%
Male	304	56%	150	57%	93	62%	62%
Total	547		264		149		
2014							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	149	47%	118	49%	61	45%	52%
Male	171	53%	122	51%	74	55%	60%
Total	320		240		135		

Table 12: Mathematics applications data – postgraduate research (PG(R))

(% is the percentage of the previous stage, e.g. acceptance versus offers)

2011							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	17	29%	9	43%	7	41%	77%
Male	41	71%	12	57%	10	59%	83%
Total	58		21		17		
2012							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	21	40%	8	42%	8	50%	100%
Male	32	60%	11	58%	8	50%	90%
Total	53		19		16		
2013							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	23	23%	8	31%	7	35%	88%
Male	75	76%	18	69%	13	65%	72%
Total	98		26		20		
2014							
	Application		Offer		Acceptance		% Offers to Acceptance
	No.	%	No.	%	No.	%	
Female	34	32%	8	29%	8	32%	100%
Male	72	68%	20	71%	17	68%	85%
Total	106		28		25		

3b(vi) Degree classification by gender

Tables 13-14 demonstrate that in the last two years:

- Female students are outperforming their male counterparts and attaining a First class degree in significantly higher proportion
- Percentage of female UGs awarded 2:1 is slightly lower than that of male students
- The number of weak degree results is roughly the same at 2:2
- Male students are more likely to graduate with 3rd class degree

To rectify the problem with weaker students,

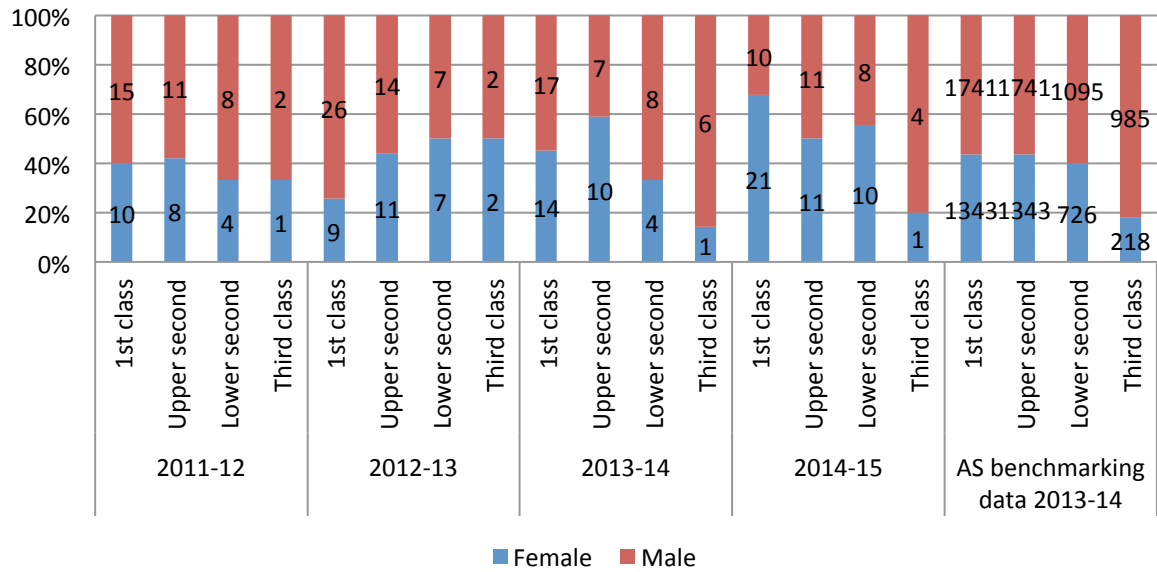
- All Academic Advisers have been instructed to pay special attention to the performance of weaker students with a particular emphasis on male students
- Student mentoring scheme is run by 2nd and 3rd year students trained to offer both academic and general wellbeing advice and support

The continuous involvement of Academic Advisers in the second and third years of an undergraduate degree results in high attendance at lectures and workshops, as well as submission of homework. This approach will be continued to further improve degree results.

Action Point 7.

Table 13: Undergraduate students - degree outcomes								
(% is the percentage in each cohort, e.g. females achieving a particular degree result from the overall female number in that year)								
	2011/12		2012/13		2013/14		2014/15	
	Female	Male	Female	Male	Female	Male	Female	Male
First class	10 (44%)	15 (42%)	9 (33%)	26 (53%)	14 (48%)	17 (45%)	21 (49%)	10 (30%)
Upper second	8 (35%)	11 (30%)	11 (41%)	14 (29%)	10 (35%)	7 (18%)	11 (26%)	11 (33%)
Lower second	4 (17%)	8 (22%)	7 (26%)	7 (14%)	4 (14%)	8 (21%)	10 (23%)	8 (24%)
Third class	1 (4%)	2 (6%)	0 (0%)	2 (4%)	1 (3%)	6 (16%)	1 (2%)	4 (12%)
Total	23	36	27	49	29	38	43	33

Table 14: Degree outcomes: undergraduate students



At taught postgraduate level (Tables 15-16)

- Male students are more likely to get either Distinction or Pass
- Percentage of female students achieving Merit is much higher

The data for PhD students (Tables 17-18) are too small for statistical significance, and it only just covers a sub-period of study for a PhD degree. At 50%, the percentage of female PhD students completing their PhD is significantly higher in the Department than the national average at 30%.

Table 15: Postgraduate taught students - degree outcomes

(% is the percentage in each cohort, e.g. females achieving a particular degree result from the overall female number in that year)

	2011/12		2012/13		2013/14		2014/15	
	Female	Male	Female	Male	Female	Male	Female	Male
Distinction	2 (5%)	9 (16%)	9 (20%)	12 (26%)	6 (54%)	17 (52%)	2 (17%)	11 (46%)
Merit	10 (26%)	16 (27%)	30 (67%)	26 (55%)	5 (46%)	16 (48%)	9 (75%)	10 (42%)
Pass	27 (69%)	33 (57%)	6 (13%)	9 (19%)	0 (0%)	0 (0%)	1 (8%)	3 (13%)
Total	39	58	45	47	11	33	12	24

Table 16: Postgraduate taught students - degree outcomes

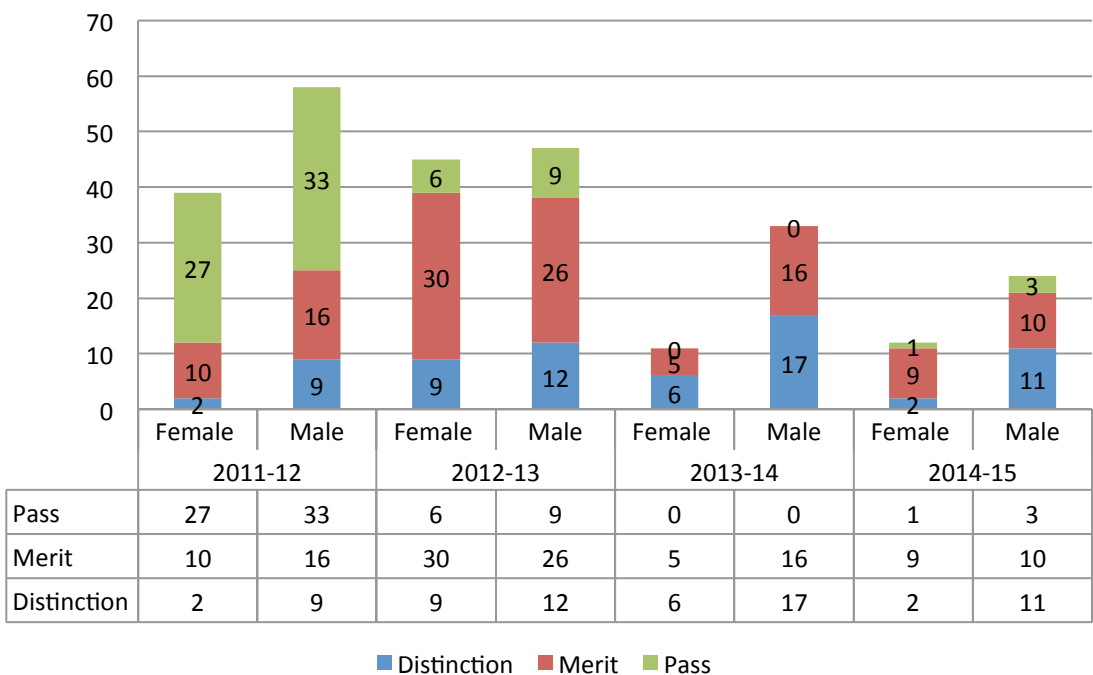
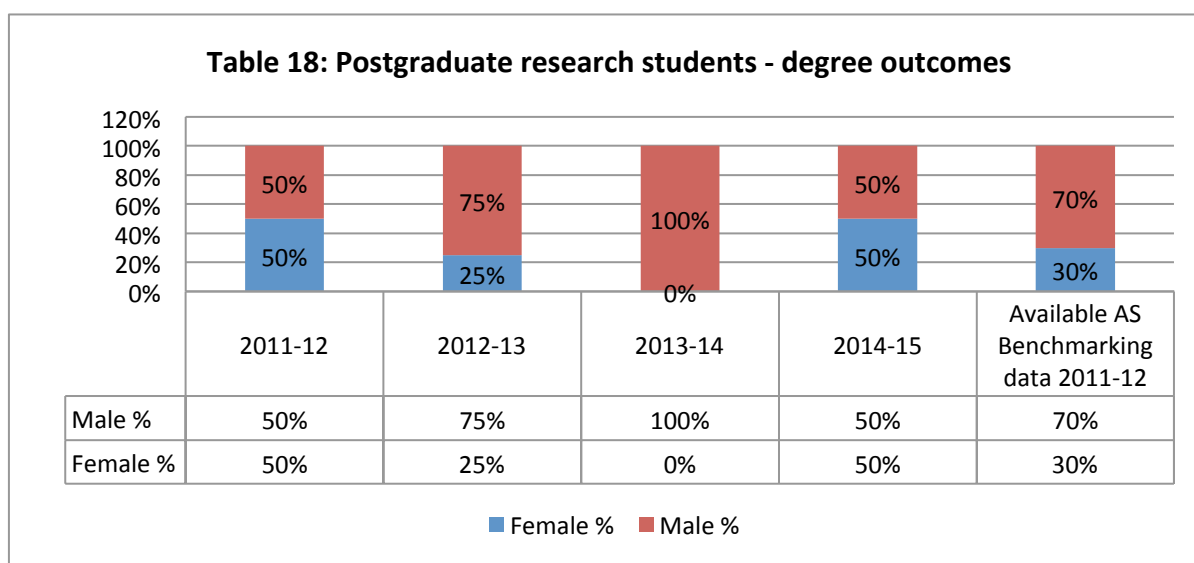


Table 17: Postgraduate research degree students - PhD awards					
	Female Actual	Female %	Male Actual	Male %	Total
2011-12	1	50%	1	50%	2
2012-13	1	25%	3	75%	4
2013-14	0	0%	4	100%	4
2014-15	2	50%	2	50%	4



Staff data

3b(vii) Female:male ratio of academic staff and research staff

The number of Teaching and Research Fellows is too low for significant statistical analysis, but the number of females is low in these posts: these are non-permanent positions, which are objectively justified as they are either teaching replacement positions arising from

successful grant awards, or additional teaching staff employed to reduce teaching workload of academic staff members.

Women remain under-represented at all levels, and currently comprise 20% of the department's academic staff (Table 19), which is slightly lower than the national average of 22.9% for 2013/14¹. These data also show that

- At lectureship level, the percentage of females is roughly the same as that of the female PhD students.
- The lack of female academics at higher levels is mainly due to the lack of external candidates, and, to some extent, due to the time required for internal candidates to go through successful promotion.

After undergoing a major restructuring, the department has appointed a number of new academic staff in 2012-2014. In Table 19, the data shows that there was an increase in

- Professorial positions (2 male) - the recruitment data from Table 20 shows that the number of female applicants for these posts was 0% in 2013, suggesting that the problem is not at the level of appointment, but that we must be more proactive in attracting high-calibre women applying for these positions.
- Reader appointments – changes are due to successful internal promotions.
- A female Lecturer was successfully promoted to Senior Lecturer.

Recruitment is a key area of concern for our Department. Therefore, two strategically important departmental approaches will be used to increase the number of female staff, including at senior levels:

- additional support with promotion applications, with a special emphasis on Senior Lecturer-Reader, and Reader-Professor transitions. **Action Point 8.**
- proactive targeting to significantly increase the number of female applicants for all future openings in the department, which should lead to a growth in the number of female staff across all career levels. **Action Point 9.**

The promotion of initiatives supporting the careers of female academics, such as shared parental leave, formal/informal flexible working arrangements, will remain a very high priority.

¹ Source: HESA staff record 2013/2014.

Table 19: Mathematics staff data: Academic and Research Staff						
	2013		2014		2015	
	Female	Male	Female	Male	Female	Male
Grade 10 - Professor	0 (0%)	1 (100%)	0 (0%)	3 (100%)	0 (0%)	3 (100%)
Grade 9 - Reader	1 (25%)	3 (75%)	1 (17%)	5 (83%)	1 (14%)	6 (86%)
Grade 9 - Senior Lecturer	0 (0%)	5 (100%)	1 (20%)	5 (80%)	1 (20%)	4 (80%)
Grade 8 - Lecturer B	2 (40%)	3 (60%)	2 (29%)	5 (71%)	2 (29%)	5 (71%)
Grade 7 - Tutorial/ Teaching Fellow	1 (17%)	5 (83%)	1 (14%)	5 (86%)	1 (14%)	6 (86%)
Research staff	0 (0%)	1 (100%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Total	4	18	5	24	5	25

3b(viii) Turnover by grade and gender

There was no turnover during the last three years.

Total: (2000/2000 words)

4. Supporting and advancing women's careers: maximum 5000 words

Key career transition points

4a) Provide data for the past three years

4a(i) Job application and success rates by gender and grade

- (i) The data are shown in Table 20. The numbers are generally too small for any meaningful statistical analysis, but it is
- disappointing to note the very low percentage of female applicants across all levels (0% female applicants for a Professorial position in 2013).
 - encouraging to note that the conversion from interview to acceptance at lectureship level was 100% for female applicants (2013).

In order to address this problem, **Action Point 10**, we will

- use professional word-analysing software (<https://textio.com>) to ensure that wording of all future recruitment advertisements is welcoming to female applicants.
- monitor recruitment panel composition with the aim of having a proportional representation of women and men.
- include the following statement in all job listings: "The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority group candidates, who are under-represented in academic posts in science, mathematics and engineering at Sussex."

Table 20: Mathematics Staff data - Job application and success rates										
		2013			2014			2015		
		Applied	Interviewed	Appointed	Applied	Interviewed	Appointed	Applied	Interviewed	Appointed
Professor	Female	0	0	0	0	0	0	0	0	0
	Male	14	5	1	0	0	0	0	0	0
Reader	Female	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0
Senior Lecturer	Female	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0
Lecturer	Female	14	1	1	0	0	0	0	0	0
	Male	71	12	2	0	0	0	0	0	0
Tutorial/ Teaching Fellow	Female	0	0	0	5	3	0	1	1	0
	Male	0	0	0	8	5	1	17	4	1
Research Fellow	Female	0	0	0	3	1	0	0	0	0
	Male	0	0	0	7	5	1	0	0	0

4a(ii) Applications for promotion and success rates by gender and grade

In the last three years there have been six successful promotions across all grades (Table 21).

The results of the 2016 departmental staff survey show that

- only 65% of staff understand when and how to put in a case for promotion. **Action Point 11.**
- only 53% of staff understand how an application is evaluated by the University. **Action Point 8.**

All promotion cases are submitted to the HoS, and then considered at the University promotion panel meeting. The university has one annual promotional board that considers promotions up to Senior Lecturer, and three annual boards that consider promotions to Reader and Professor. Guidance and criteria for promotion are fully explained on the HR webpages. In addition, promotion processes will be explored through case studies in our termly Athena SWAN staff letter (see **Action Point 18**).

In order to improve the overall understanding of the promotion process, the University

- organises several dedicated workshops per academic year focussing on promotions for STEMM Schools, which are run by the Pro-Vice-Chancellor (Teaching & Learning);
- has amended its promotion procedures to allow staff members to record any career breaks due to, for example, periods of maternity, parental or adoption leave, which may have influenced their output and/or career progression;
- introduced a separate career pathway for Teaching Fellows in March 2014, with career progression and appointments being as follows: Teaching Fellow (Grade 7), Teaching Fellow (Grade 8), Senior Teaching Fellow (Grade 9), Professorial Teaching Fellow (Grade 10). The promotion procedure follows that of academic staff.

Furthermore, the School has agreed that an annual appraisal meeting for staff members should include a discussion regarding promotions, and we have designed an MPS School Promotion Checklist for Appraisals form, which will become compulsory from Summer 2016, and will have to be signed by the Appraisers and Appraisees. **Action Point 12.**

At the Departmental level, starting from 2016/17 academic year, we will introduce an annual 1-to-1 career coaching meeting between HoD and female staff members, focussing on career goals and promotions. **Action Point 13.**

Table 21: Mathematics Staff data - Promotions												
Promotion to	2013				2014				2015			
	Total applications		Successful applications		Total applications		Successful applications		Total applications		Successful applications	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Grade 10 Professor	0	1	0	0	0	0	0	0	1	1	0	0
Grade 9 - Reader	0	2	0	2	0	1	0	1	0	2	0	1
Grade 9 - Senior Lecturer	0	1	0	1	1	1	1	0	0	0	0	0

4b)

4b(i) Recruitment of staff

The Department operates the following university-wide principles for recruitment of staff:

- posts are advertised through the University webpages and at www.jobs.ac.uk
- post advertisements are prepared by the HoD and HoS, and are checked and agreed with the University HR team to ensure full compliance with equality rules and to avoid unconscious discrimination
- applications are assessed and shortlisted by the recruitment panel consisting of members of the Department, School and University
- all panel members are required to undergo recruitment and selection training

Additionally, the Department has agreed to the following rules

- the Department requires interview panels to involve at least one female staff member (out of total 4)
- all panel members have to have Unconscious Bias training prior to participation in the recruitment process
- all newly appointed academics are given a reduced teaching and administrative load to help them settle into their new jobs
- Department will proactively target suitable female applicants both through direct personal contact, as well as dedicated Women in Mathematics networks
- all academic positions will be listed as suitable on a part-time and job-share basis

4b(ii) Support for staff at key career transition points

There are three key career stages, where female representation falls:

- recruitment of PhD students. **Action Point 14.** UG student representatives report that female students are less likely to have the confidence to apply for PhD. We will tackle this by improving induction material for our final year UG students, and through the career events designed to build confidence, e.g. “Funding from industry: being paid for your PhD” and “What comes after your PhD?”
- appointments to postdoc positions (normally fixed-term contracts, which form part of the usual academic career). **Action Point 15.** Such positions arise from successful grant applications, and all staff making such appointments is made aware of our target of 50% applications from female candidates. It is important that we make use of our extensive networks to achieve a gender balance in the recruitment pool. Once appointed in postdoc roles, mentoring support is both vital and available through the University’s mentoring circles scheme.
- appointments to permanent positions. These approximately occur when young researchers may wish to start a family and choose not to work full-time. We believe that having every future academic position advertised as available on a part-time and job-share basis will make our department more attractive to female applicants.

Action Point 16.

There is a range of training initiatives aimed at supporting careers of female academics run by the University. These include

- **Annual greenhouse masterclass on “Public Speaking and Communicating your Research”** for women in STEMM, run by BBC’s Sky at Night scientist Maggie Aderin-Pocock. These events are widely advertised in the Department, and all women receive personal invitations.
- Dedicated **One-to-One Coaching** sessions: these allow the resolution of problems, and successful implementation of solutions.
- A **mentoring circles** scheme for young female researchers in STEMM subjects, with a range of male and female mentors across STEMM disciplines and career stages.

The School supports any activities designed for female staff, which take place outside the University, and a special budget is available for this. These include meetings of the European Women in Mathematics association, LMS Women in Mathematics days and similar events.

We are a small department, so the data (Table 19) does not lend itself to a robust statistical analysis. The majority of female staff members (4/5) are appointed on the Research & Teaching career pathway with nearly equal representation across Lecturer, Senior Lecturer and Reader positions.

However, we are acutely aware that the greatest imbalance is at the senior level positions, especially, at the professorial level, where we do not have any women. The senior management, HoD and HoS are fully aware that this is a very serious issue, as all female staff members should be able to reach their full potential and serve as career aspiration role models for female students and staff. It should be noted that all three male Professors in the Department have been externally recruited to their positions, and a successful promotion to

professorial level is yet to happen in the Department. Therefore, in order to improve the proportion of female staff in senior positions, it is crucial that we both

- **attract** applications from strong female applicants in all future job openings
- **support** internal career progression of current female staff members

To achieve our goal we must both attract more female applicants and support existing female staff members effectively in their careers. This is the most important change needed for our department to achieve better gender balance, and our commitment to it is shown by **Action Points 9-16**.

Career development

a)(i) Promotion and career development

Each member of the department goes through an annual appraisal. The process includes an assessment of achievements in teaching, research, administrative activities and management responsibilities, as well as external activities and future outlook. This process is not directly linked to promotion, but is a good opportunity to identify and discuss career aspirations and identify pathways to successful promotion. The appraisal form includes a separate section on goals and promotions.

The School of MPS has decided to formalise the process of promotion discussion, and has designed and agreed an MPS Promotion Checklist, which will be in use from summer 2016, and its efficacy will be assessed through subsequent staff survey results (see Action Point 12).

All new Appraisers are required to undergo training. **Action Point 17**.

Promotion criteria and guidelines are available on the University webpages, and include details of the University's career pathways (Research only, Teaching only, and Research & Teaching). All pathways allow promotion up to Professorial level. The annual timetable is published on the HR webpage and circulated by the HoS.

The Academic promotions workshops, referred to in 4a)(ii) are run several times during the academic year, and female academics in Mathematics will continue to be actively encouraged to attend.

All applications for promotion are submitted to the HoS, who is responsible for nominating referees, and are subsequently considered by a University level committee. Successful promotions are communicated via e-mail to all School members.

a)(ii) Induction and training

There are several important steps undertaken by the University and the Department to ensure that staff feel welcome and supported from day one in their new jobs. Following the successful appointment, all new staff are

- invited to attend a University-wide 'welcome session', which provides an excellent opportunity for networking and meeting staff members from other Schools

- introduced by the Department to various University, School and Departmental procedures. This is done using a very detailed induction checklist published by HR, which covers all necessary steps to undertake on day one, week one and week two

Additionally to the standard University activities, the Department makes further arrangements to welcome new staff members, such as

- each member of staff is assigned a mentor, who helps them settle into their new jobs, resolve any problems, and provides guidance and support
- HoD organises special one-to-one introductory sessions that cover use of IT, health and safety, role-specific matters, and all other aspects of departmental organisation and structure
- all current staff members are very supportive, and being a fairly small department, it is easy to meet staff and discuss any outstanding issues informally
- The School has organised an Equality and Diversity dedicated Away-Day (18 May 2016) focussed on training in Unconscious Bias and Bullying and Harassment; all School members are actively encouraged to participate.

Action Point 18.

The University runs a number of training and development courses, which are highlighted during staff induction. The courses cover professional and management development, teaching, information technology, researcher development, library, health & safety, and equality and diversity.

Formal networking takes place during Departmental/ School meetings. The Department also organises informal social events, which are open to all staff and their families. Networking across the University happens through interdisciplinary research, writing collaborative research grants, and joint cultural activities. The 2016 staff survey showed that 80% of participants are happy with the current networking opportunities provided by the Department within the Department. However, only 53% are happy with networking opportunities outside the Department. To provide better networking opportunities and foster new interdisciplinary collaborations, the School has decided to introduce a series of MPS Research Colloquia, with presentations from academics within the MPS, which started in April 2016 with a research talk given by a female mathematics staff member. **Action Point 19.**

a)(iii) Support for female students

Support for female UGs.

It is our highest priority that the Department is a welcoming and inclusive place for all our undergraduate and postgraduate students. We are putting significant effort into providing a wide range of departmental support to female undergraduate students:

- the Department organises induction (for first-year UGs) and re-induction (for all other UGs) sessions, which cover all aspects of the academic year, main staff contacts, and a range of support mechanisms offered by the

Department and the University. These sessions include dedicated Athena SWAN related material.

- From day one, all students are allocated a personal Academic Adviser, who meets with them every week in the first term, then at least twice-termly for the remainder of their degree programmes (in addition to frequent email contact).
- It is possible to request a female Academic Adviser. There were a handful of such requests in the last three years, and we have accommodated them all.
- Director of Student Experience (SAT member) coordinates student support within the School, and the Senior Tutor (SAT member) oversees and advises all students in the Department.

The University has a range of dedicated student support services, such as the Student Support Unit and the Student Life Centre, which advise on matters related to health, finance, disability/mental health, and general wellbeing. These units employ male and female staff, and students can choose whom they prefer to see.

The Department has a number of UG student representatives, who are elected each year by the students. They attend Departmental/ School meetings and report back to students. There are normally two UG representatives for each year of study, and for the 2015-2016 academic year, there are 6 female and 3 male UG representatives across all years. The Mathematics Staff-Student Liaison Committee, consisting of student representatives, HoD, Senior Tutor and the Head of the Teaching Committee, meets regularly to discuss various issues related to student teaching experiences and any other non-teaching related issues.

Paid postgraduate students run special Mathematics Student Support sessions, and offer two hours per week support for first- and second-year UG students. Additionally, Peer-Assisted Learning sessions are held every week in Spring term for an hour by the current second-year undergraduate students, and are aimed at helping first years with their modules.

The Department has a designated Career Tutor, who organises talks by various speakers with a Mathematics Degree, as well as former undergraduates from the Department about their careers, and works closely with the University's Careers and Employability Centre.

The University has an Emily O Akinluyi Scholarship for **female** undergraduate students to study Mathematics in Sussex, offering financial support for the duration of their degree. The Department has very limited financial independence, and cannot offer scholarships to female students itself.

The London Mathematical Society offers undergraduate research bursaries for students with high research potential to encourage them to consider a career in scientific research.

Postgraduate students: taught and research (PGT and PGR)

All PGTs and PGRs have access to the same variety of resources as UGs. The Department has a special induction session for PGTs and PGRs in their first week of study, including an overview of Athena SWAN initiatives. All PGs are allocated an Academic Adviser for the duration of their studies, to advise on all matters, including academic and organisational

processes. Academic staff offers a number of research dissertation topics, and students are free to choose either a male or a female project supervisor.

Postgraduate research students (PGRs) have a main supervisor and a second supervisor, who are responsible for providing support during PhD studies and advising on career opportunities. University or Research Council-funded PGR positions are advertised openly. If a female member of staff does not have research funding, they may not be available for the supervision of female students, but may be appointed as second supervisor.

All potential PGR candidates undergo an interview, and the Department requires all staff members involved in the recruitment of PhD students to undertake Unconscious Bias training. Moreover, we strive to ensure that interviews are conducted by staff members of both genders.

Self-funded PGRs are free to choose any supervisor, either male or female, but our experience shows that, in the majority of cases, their choice is based on research area of the supervisor, and not on gender.

The University's Doctoral School provides support and advice to all PGR students, and MPS has a dedicated Director of Doctoral Studies (female academic from Physics), who advises PGRs on all matters related to their studies and financial support at the School level. A dedicated Sussex Research Hive serves all doctoral researchers, and offers a designated space for self-study, rooms for collaborative meetings, and organises a series of workshops on all academic matters.

The Department has a number of research seminar series, with world-leading international speakers, which all PGR students are encouraged to attend. The Departmental seminars are run in core hours (10am-4pm), and have a good representation of both male and female speakers.

The Departmental PGR students self-organise a series of research seminars, with research presentations given by the current PhD students. The School has an annual Research Day for all PGRs in the School, which is organised by the students themselves. It includes a poster competition, with a prize given for the best poster, all printing costs being fully covered by the School.

PGRs are encouraged to attend research conferences and training schools/workshops related to their areas of research. LMS organises annual Women in Mathematics days that are advertised to all female PGRs.

The University has clear and concise rules covering maternity, parental and adoption leaves for PGRs independently of their funding and visa status. Information about these is available through the webpages for PGRs within the School website, and is communicated to students by their research supervisors.

Organisation and culture

a)

a)(i) Male and female representation on committees

Table 22: Department of Mathematics Committee Representation						
	2013		2014		2015	
	F	M	F	M	F	M
Outreach, Marketing and Admissions	1	1	1	1	1	1
Undergraduate and Postgraduate Exam boards	2	11	2	11	2	11
Teaching and Learning Committee	3	4	3	3	2	6
Research Committee	1	6	1	6	1	6
Mathematics Staff Student Committee	0	2	0	2	0	3
Athena SWAN Committee	n/a	n/a	2	5	2	5

Table 22 shows academic staff representation on Departmental committees, and all but one committee has at least one female staff member, including a Deputy Chair of undergraduate exam board and a Deputy Chair of the Research Committee; Athena SWAN committee is chaired by a female academic.

Potential committee members are identified and invited by the HoD or committee Chair, and it is possible to discuss all details of the role informally prior to appointment. All members of staff, especially female academics, are actively encouraged to put themselves forward for committee membership, but with just 4 female academics, it is inevitable that there will be imbalances in committee memberships until more women are recruited. Moreover, we are mindful of the need to prevent overload of administrative duties on the four female academics in the Department.

We have identified that Research and Teaching&Learning committee membership, and the role of Exam Board Deputy Chair are the most likely ones to benefit an academic career. The HoD monitors the composition of the Research Committee annually to ensure the best possible gender representation. Whilst the Deputy Chair of the Exam Board is normally appointed on a three-year basis, the composition of the Departmental committees will be reviewed annually, so that membership is shared across the department. **Action Point 20.**

a)(ii) Female:male ratio of academic and research staff on fixed-term contracts and open-ended (permanent) contracts

The number of staff on fixed-term contracts is too small to be statistically significant (Table 23). The data shows that

- All academic staff is employed on open-ended contracts, and fixed-term contracts are only held by the staff on teaching only positions.
- At 86%, the percentage of males employed as fixed-term Tutorial/Teaching Fellows is much greater than female at 14%. The Department is more likely to appoint male staff members than females on fixed-term contracts.

- Over the years the number of females has not changed but the number of males on fixed-term contracts has slightly increased.

As part of the University's bronze Athena SWAN initiatives, the University has recently introduced an annual process of reviewing all research staff in STEMM Schools employed on fixed-term contracts, and staff, who meet the criteria, are transferred onto open-ended contracts. The Department is fully committed to enabling long-term teaching faculty to transfer to open-ended contracts, and works closely with the University to achieve this.

Table 23: Department of Mathematics, Permanent/Fixed term members of staff							
		2013		2014		2015	
		Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Grade 10 Professor	Permanent	0 (0%)	1 (100%)	0 (0%)	3 (100%)	0 (0%)	3 (100%)
	Fixed term	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Grade 9 Reader	Permanent	1 (25%)	3 (75%)	1 (17%)	5 (83%)	1 (17%)	6 (83%)
	Fixed term	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Grade 9 Senior Lecturer	Permanent	0 (0%)	5 (100%)	1 (17%)	5 (83%)	1 (20%)	4 (80%)
	Fixed term	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Grade 8 Lecturer B	Permanent	2 (40%)	3 (60%)	2 (29%)	5 (71%)	2 (29%)	5 (71%)
	Fixed term	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Grade 7	Permanent	0	0	0	0	0	0

Tutorial/ Teaching Fellow		(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
	Fixed term	1 (17%)	5 (83%)	1 (17%)	5 (83%)	1 (14%)	6 (86%)
Research Fellow	Permanent	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	Fixed term	0 (0%)	1 (100%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Total		4	18	5	24	5	25

b)

b)(i) Representation on decision-making committees

- The Department has female members of staff on all but one committee, and the Deputy Chair of the Exam Board is a female.
- Membership of committees is determined either by HoD, HoS or the Chair of the committee, and **all** members of staff are encouraged to put themselves forward to become members.
- The membership of the University-level committees is determined either by elections, e.g. Senate representatives, or by appointment. HoD ensures that if asked for appointments to the non-departmental committees, the female staff members, in particular, are given this opportunity.
- In order to get a better female representation on the committees, our priority is to increase the number of female academics, especially at senior level. **Action Points 9-16.**

b)(ii) Workload model

The Department operates a workload model whereby

- Duties are assigned by the HoD and HoS.
- Particular attention is paid to the allocation of duties seen as beneficial to an individual's career, such as administrative roles and committee membership, which enhance the individual's profile and can assist with applications for promotion.
- Newly-appointed staff are given a reduced teaching load of one module (the full teaching load is 2 modules) in the first year of their employment. No heavy administrative duties are given to junior staff to ensure smooth transition into the new job.

- Staff with heavy administrative roles have a reduced teaching load.
- Pastoral responsibilities, such as personal tutoring of undergraduate and postgraduate students, are fully recognised in the current workload model, and form part of the University's promotion criteria.

A formal workload model, which will explicitly take into account all research activities, teaching, including supervision of UGs and PGs, mentoring of academic advisees, and administrative duties is piloted in the department at the moment, and will be fully operational from 2016/17 academic year. We will ensure that this model delivers our intended equality and diversity outcomes. **Action Point 21.**

We are very pleased that the results of 2016 staff survey show that 100% (up from 80% in 2015) of responders agree that work allocation is done in a clear and transparent way.

b)(iii) Timing of departmental meetings and social gatherings

The Department has several staff with young children and other caring responsibilities, and is very mindful of this when scheduling formal meetings, as well as informal social gatherings. The following Departmental policies are in place:

- Core hours are 10am - 4pm.
- Formal Departmental meetings include all staff members, and take place during core hours.
- Departmental committee meetings and research seminars are scheduled during core hours only.
- The University teaching hours are 9am-6pm, but members of staff with caring responsibilities can request and are normally granted a more convenient teaching schedule.
- All social activities in the Department and School take place during core hours.
- 2016 staff survey results show that 92% (87% in 2015) of responders feel that meetings in the Department are scheduled in core hours.

b)(iv) Culture

The Department has an inclusive culture, and fully embraces its ethnically diverse pool of staff and students.

- We have a dedicated staff room with a coffee machine, where staff frequently meet and informally chat over a cup of coffee.
- A 2016 staff survey shows that 100% (up from 90% in 2015) of respondents agree/strongly agree that all social activities are welcoming to women and men, while 85% (same as in 2015) of the responders agree/strongly agree that unsupportive language and behaviour are not acceptable, and 96% (up from 90% in 2015) agree/strongly agree that inappropriate stereotypical images are not tolerated in the Department.
- 2015 staff survey showed that 16% of staff were not confident that line managers would deal effectively with bullying and harassment

complaints, and we are pleased to acknowledge that this has dropped significantly to just 3.8% (1 responder) in 2016 survey.

- The School has appointed two Equality and Diversity Champions (one male, technical support staff, and one female, an academic staff member), whose role is to ensure that staff are clear on institutional policies, and be the first point of contact for an informal chat and/or advice for people who have a concern. **Action Point 18.**
- The School has organised an away day dedicated to Equality and Diversity, which will include Unconscious Bias and Bullying and Harassment training (18 May 2016) to improve staff awareness around these issues. **Action Point 18.**
- Informal discussions with members of the Department indicate that flexible working arrangements, and the choice of having all teaching scheduled in one term/spread over two terms, are great Departmental initiatives for better work-life balance.
- A number of social activities are organised by the Department, such as Mathematics Ball, annual South Downs walks, School BBQs for all members of the Department and their families.
- Our externally accessible departmental Athena SWAN webpage gives practical examples of our positive departmental culture to potential students and job applicants. **Action Point 22.**

b)(v) Outreach activities

The Department runs a number of outreach activities for local schools and the general public. All events are aimed at engaging and encouraging students to study mathematics at A-level and beyond.

- In association with the Sussex Branch of the Mathematical Association, the University of Sussex, and the University of Brighton, the Department organises a series of weekly Royal Institution Masterclasses in Mathematics aimed at 60-70 schoolchildren aged 13-14 from local schools. 2-3 staff members attend and help run each event.
- The Department offers a range of workshops and talks presented by staff and PhD students, aimed at Key Stage 4 and 5 students. These presentations take place on University campus or at local schools, and can be booked by schools/colleges without charge.
- The School has a full-time Outreach Officer, shared between Departments of Physics and Mathematics. The Department has a designated Mathematics Outreach Officer, chosen from academic staff, who is responsible for coordination of our outreach activities. This role is fully recognised in the workload model, and rotated between members of the Department.
- All members of the Department are encouraged to actively participate in outreach activities, including “Widening Participation” events organised by the University. These events give students from local schools and colleges a taster of “what it’s like to be a University student” in order to raise their ambitions and aspirations.
- Annually, staff organise activities at the Brighton Science Festival, which are open to the general public. These involve interactive and engaging

- activities, e.g. the motion of double pendulum, geometry of bubble blowing, and strategies on how to win a dream car using mathematics.
- The Department encourages participation of undergraduate and postgraduate students in our outreach activities, and we always have a mix of female and male students involved.

Within this wide range of activities, we need to clarify which have the most impact on either female students continuing to study mathematics in school, or applying to University. **Action Point 23.**

Case study (PhD student). *“I gave a couple of workshops to secondary school children in a local school, which involved playing probability-based games in classes and using these examples to discuss and understand the underlying mathematical theory. I am currently involved in designing and re-working outreach materials for a network theory based workshop which will be delivered to GCSE and A-level age students in schools or during visits to the University.*

I feel that doing outreach-related work within the University is extremely beneficial for me as a PG student; it has improved my self-confidence, given me valuable teaching experience and encouraged me to think about the wider implications my research could have, and how to convey my work to a non-academic audience. I particularly enjoy having the opportunity to talk to younger students about what inspires them and what they might like to study in the future.”

Flexibility and managing career breaks

a)

a)(i) **Maternity return rate**

In the last three years no staff have taken maternity leave.

a)(ii) **Paternity, adoption and parental leave uptake**

Two academics have taken paternity leave in the last three years (see case study below). There were no adoption or parental leave requests.

Case study (Staff). *“I took paternity leave for all my three children who were born while I was working at Sussex. For the third one, who was born in 2015, I notified the Head of Department and HR in advance that I wanted to take 2 weeks from the day the baby would be born, which was in term time. The Head of Department arranged for other members of faculty to cover my teaching duties, and for other members of staff to cover my other administrative duties during these two weeks, so I could focus on my family.”*

a)(iii) Numbers of applications and success rates for flexible working by gender and grade

There has been one formal request for flexible working hours from a member of staff (male), which was granted. One member of staff (male) switched from full-time to part-time employment:

Case study (Staff). *“Following the untimely demise of my mother I have to be a part-time carer for my father who lives abroad. Because of this, I have asked to have my teaching duties concentrated in one term and a reduction in some of my other duties throughout the academic year (at a suitable reduction in my FTE). This allows me frequent travels abroad, especially, outside the term when I am teaching. The Head of Department and the Head of School have been very supportive in accommodating my special circumstances, and the procedure of transfer to the new status was very straightforward.”*

b)

b)(i) Flexible working

- The Department operates both formal and informal flexible working arrangements.
- The number of applications for formal flexible working arrangements are small (one male member of staff in the last three years, successful), all members of staff are frequently reminded that such arrangements are possible, and application forms are provided on the University HR family-friendly policy webpages.
- The Department also operates informal flexible arrangements, where any member of staff can choose to work from home at any time if necessary, provided they do not have commitments requiring them being on campus.
- The School has developed its own simplified procedure to apply for flexible working arrangements in relation to teaching scheduling (standard teaching hours are 9am-6pm) for anyone with caring responsibilities regardless of their time in employment.
- All staff receive email notifications reminding them to apply for flexible arrangements, if necessary, before timetabling of lectures takes place.

b)(ii) Cover for maternity and adoption leave and support on return

- In the last three years, the Department did not have any requests for maternity or adoption leave.
- SAT Chairs from Mathematics and Physics have developed and agreed with HoS an MPS-specific return to work policy, whereby any staff returning from long-term caring leave will have a reduction in their

workload to 60% in the first term after their return. The policy was implemented in Spring 2016.

Total: (4988/5000 words)

5. Any other comments: maximum 500 words

Responses from 2016 staff survey clearly indicate that staff in the Department are very supportive of the Athena SWAN initiatives, and are committed to the promotion of equality and diversity. Moreover, staff members are happy with the departmental culture, allocation of duties, and flexible working policies. The 2016 departmental staff survey had a very high response rate of 82%. The staff survey was not published by gender because of the need to retain anonymity of the small number of female staff. The staff survey showed that 92% (up from 90% in 2015) of respondents clearly understand why the Department engages with gender equality issues and why positive action is needed to promote gender equality.

Our Action Plan contains new ways and opportunities that the Department will follow in order to increase our intake of female PhD students and recruit female academic members of staff, two of our key priorities. We have also identified actions to improve retention of female members of staff and provide bespoke support at all key stages of their scientific careers (our third priority). Embarking on the Athena SWAN assessment process has allowed us to clearly identify areas for improvement. We know that we are at the beginning of a long journey. However, the essential foundations for improving the careers of female mathematicians have already been laid, and vital changes are happening swiftly and are fully supported by the Department and the University. Achieving a departmental Athena SWAN Bronze Award will help us stay focussed, motivated and continue the momentum on this highly rewarding journey towards reaching the highest standards of gender equality.

Total: (266/500 words)

6. Action plan

A detailed Action Plan is provided in Appendix A.

Appendix A.

Department of Mathematics Athena SWAN Action Plan 2016-2019

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
1	Reduction in percentage of female applicants for Foundation Degree	Investigate reasons for reduction in student numbers	Spring 2017	Senior UG Tutor, James Hirschfeld	Admissions Tutors, Filippo Cagnetti and Vanessa Styles	Equality Issues are addressed by investigation, and report made to SAT for action
2	Only 42% of current UG students are female	<p>Focus group to explore female 6th formers' perception of studying mathematics at Sussex</p> <p>Continue analysis of applicants vs acceptance by gender</p>	<p>Twice per year at Open Days from September 2016</p> <p>Annual Review starting from October 2016</p>	<p>Head of Department, Enrico Scalas</p> <p>SAT Chair, Yuliya Kyrychko</p>	Filippo Cagnetti and Vanessa Styles	50:50 target UG gender balance by 2019

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
3	2014/5 reduction in female postgraduate taught course applicants	Use focus group to explore with 2015/6 intake Monitor applications for 2016/7	June 2016 Annual Review from October 2016	Enrico Scalas	Postgraduate student representatives 4 Course Convenors	Report to SAT 50:50 target PGT gender balance by 2019
4	New MSc in Data Science launched in 2016/7	Monitor applications by gender	October 2017	Head of Teaching Committee, Peter Giesl	Course Convenor, Enrico Scalas	50:50 target gender balance by 2019
5	Interviewers for PhD candidates and staff roles may not be fully trained	All interviewers required to have unconscious bias training	From April 2016	Enrico Scalas	School Administrator, Oonagh Caunter	100% of all interviewing staff have had appropriate training

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		Develop, pilot and review departmental checklist to fairly allocate Departmental Doctoral Scholarships	Winter 2016 (Develop) Spring 2017(Pilot) Autumn 2017 (Review) then annually	Head of Research Committee, Charalambos Makridakis	Sub-Director of Doctoral Studies, Dimitrios Tsagkarogiannis	100% of staff agree/strongly agree that they understand how funding decisions are made
6	Need to increase the number of female undergraduates who consider applying for PGR courses	Focus Group to explore female UG perceptions of PhD study Continue to monitor PGR applications	December 2016 Annually, from October 2016	Yuliya Kyrychko	James Hirschfeld, UG Student Reps Dimitrios Tsagkarogiannis	Report informs the content of workshops in Action 14 Target of 45% of PhD student intake is female by 2019

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		Introduce a termly Athena SWAN newsletter for all UG&PG students	Spring 2017		Oonagh Caunter	100% of student survey responses state that “my department selects PhD students irrespective of gender”
7	Male students relative underachievement at UG level	Academic Advisers to increase their continuous involvement with students identified as weak at end of Year 1	Termly review starting from September 2016	Peter Giesl	Academic Advisers	85% of male students achieving First or Upper Second Results (2014/15, 63%)
8	Additional support for female staff focused on key transition points	Run 2 MPS School workshops with emphasis on Senior Lecturer-Reader and	Spring 2017, Spring 2018	Yuliya Kyrychko	University PVC (Teaching and Learning), Clare Mackie	On completion of their workshop, staff report either “I am ready to apply

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		<p>Reader-Professor transition</p> <p>Review workshop outcomes with SAT committee</p>	Summer 2018		Oonagh Caunter	<p>for promotion now” or “I know exactly what I have to do to be ready”</p> <p>Further workshops scheduled as required</p>
9	Need to increase number of female applicants for all future posts in Department	Proactively target female applicants through personal contact and Women in Mathematics networks	Every recruitment opportunity	Enrico Scalas	All staff	<p>Target of 40% female applicants (Reader and below).</p> <p>Target of 20% female professorial applicants</p>

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		Establish new links with other mathematics departments through active participation in LMS Good Practice Scheme workshops	Annual report to SAT in Summer Term on emerging good practice		Yuliya Kyrychko	Examples of good practice ideas implemented
10	Improve wording of all our job adverts	Use word-analysis software to ensure wording is effective Include agreed statement in all job adverts	From April 2016	Yuliya Kyrychko	Oonagh Caunter and HR Adviser, Margarita Kostadinova	A sample of job applicants state that “the recruitment process was transparent and equitable”
11	Only 65% of staff report understanding	Information in staff handbook will be checked	Summer 2016	Enrico Scalas	Oonagh Caunter and Margarita	Next Staff Survey will show that 90%

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
	when and how to put in a case for promotion	for accuracy and updates circulated to all staff Termly Athena SWAN newsletter will publish 'how to' case studies	First issue, Winter 2016		Kostadinova	of staff understand how and when to put in a case for promotion
12	Annual appraisal meetings could be used more effectively to help prepare case for promotion	All appraisal meetings will include completion of School of MPS Promotion Checklist form	From July 2016	Enrico Scalas	All Appraisers	100% of appraisal meetings will result in a signed form
13	Improving internal promotion prospects for existing female members of staff	Annual 1-2-1 career coaching meeting between HoD and female members of	From September 2016	Enrico Scalas	Enrico Scalas	On completion of 1-2-1 meeting, staff will state either "I am ready to apply for

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		staff				promotion now” or “I know exactly what I have to do to be ready”
14	Recruitment of female PhD students	<p>Develop careers events designed to build students confidence</p> <p>Department to run inspirational workshops on PhD study and academic careers</p>	<p>January 2017</p> <p>From March 2017, then annually</p>	Yuliya Kyrychko	<p>PG student reps with Career Tutor, Istvan Kiss</p> <p>PG student reps with Istvan Kiss</p>	<p>Target of 45% of PhD student intake is female by 2019</p> <p>On completion, 75% of female attendees will agree that “people like me can have successful academic careers”</p>

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		Revision of induction material for all final year UG students to include information on PhD research	Annually from September 2016		James Hirschfeld, UG Student Reps	
15	Need to increase appointments to Research Assistant/Fellow	<p>Develop career mentoring support for PhD</p> <p>Proactively target female applicants through personal contact and Women in Mathematics networks</p>	<p>May 2017</p> <p>Annually</p>	<p>Yuliya Kyrychko</p> <p>Enrico Scalas</p>	<p>Dimitrios Tsagkarogiannis and PhD student reps</p> <p>Oonagh Caunter</p>	Target 50% female applicants for these roles

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		Ensure proportional representation by gender on Research Assistant/Fellow recruitment panels	April 2016		Dimitrios Tsagkarogiannis	
16	Increase female appointments to permanent positions (Lecturer and above)	Publicise available support including Mentoring Circles; Action Learning; 1-2-1 Coaching and Masterclasses Proactively target female applicants through	Termly Annually	Yuliya Kyrychko Enrico Scalas	Oonagh Caunter, Staff Development Unit Oonagh Caunter	Target of 40% female appointments by 2018 (Reader and below). Target of 20% female professorial appointments by 2018

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		personal contact and Women in Mathematics networks				
17	Appraisers may not have sufficient training	All appraisers will complete appraiser training, along with equality & diversity training	April 2016	Enrico Scalas	Oonagh Caunter Staff Development Unit	100% of all appraising staff have had appropriate training
18	Whilst Staff Survey results on equality & diversity issues generally are strong, we need to keep working in this area	Staff actively participate in Equality and Diversity themed School Away day	18 May 2016	Head of School, Professor Peter Coles	Enrico Scalas	Away day evaluation reports staff remain committed to equality and diversity in our workplace 95% of staff agree/strongly

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		<p>Introduce a termly Athena SWAN newsletter to all staff members</p> <p>Review impact of Equality & Diversity Champion roles</p>	<p>First issue, Winter 2016</p> <p>Annually from February 2017</p>	Yuliya Kyrychko	<p>Oonagh Caunter</p> <p>E&D Champions, Steve Churchwell and Alessia Pasquazi;</p> <p>Margarita Kostadinova</p>	<p>agree that “staff are treated on their merit irrespective of gender”</p> <p>85% of staff agree/strongly agree that “if I want to informally discuss an E&D concern, I know who to approach”</p>
19	Only 53% of staff happy with networking opportunities outside Department	<p>MPS Research Colloquia will feature female speakers in proportion</p> <p>Use Athena SWAN</p>	Termly from April 2016	<p>Director of Research and Knowledge Exchange, Seb Oliver</p> <p>Yuliya Kyrychko</p>	Oonagh Caunter	85% of staff agree/strongly agree that the department provides “useful networking opportunities with University of Sussex

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
		newsletter to publicise seminars and research workshops, highlighting female speakers	First issue, Winter 2016			colleagues outside the Department”
20	Increase female representation on key committees whilst avoiding role overload	Composition of both Research Committee and Teaching and Learning Committee reviewed by gender	Annually (in advance of 1-2-1 meetings in Action 13)	Enrico Scalas	Charalambos Makridakis, Peter Giesl	Balanced representation on departmental committees in agreement with female staff
21	Ensuring our newly established workload model delivers equality & diversity outcomes	Monitor formal workload model by gender and impact on family-friendly policies	Annually, from August 2017	Yuliya Kyrychko	Enrico Scalas	Maintain staff survey result that 100% of staff agree that allocation is done in a clear and transparent way

Action Number	Issue Identified	Actions	Timescale	Accountability	Responsibility	Outcome
22	Making sure that potential staff and students know about our positive Departmental culture and working practices	Update our externally accessible Departmental Athena SWAN webpage	Termly	Yuliya Kyrychko	Oonagh Caunter	Potential students and job applicants refer to information from the webpage in applications or answers at interview
23	Wide range of outreach activities are taking place but need to clarify which have most impact	Monitor outreach activities to ensure transparency, gender balance and encourage wider participation	Ongoing, review November 2017	Yuliya Kyrychko	School Outreach Officer, Darren Baskill; Designated Mathematics Outreach Officer, Max Jensen	Identify outreach activities with the strongest impact on female students (a) continuing to study mathematics at school; and (b) applying to study mathematics at University

