Athena SWAN Bronze department award application

Name of university: The Open University

Department: Mathematics and Statistics

Date of application: November 2013

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

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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

An accompanying letter of endorsement from the head of department should explain how the SWAN action plan and activities in the department contribute to the overall department strategy and academic mission.

The letter is an opportunity for the head of department to confirm their support for the application and to endorse and commend any women and STEMM activities that have made a significant contribution to the achievement of the departmental mission.

I am writing to endorse this application for an Athena SWAN Bronze award and to confirm my (and my senior team's) commitment to improving the Department's working environment.

I have had a keen interest in improving the transparency and fairness of the working practices of the Department since my appointment as Head in 2010. In particular I am very aware of how apparently reasonable decisions can disproportionately affect those with caring responsibilities (I have a four year old daughter whom I deliver to and pick up from nursery each day).

Shortly before my tenure I persuaded the outgoing Head to begin the process of the Department becoming a supporter of the Good Practice Award (now Scheme) set up by the London Mathematical Society.

Since then I have encouraged members of the Department to take our role as a supporter of the Scheme seriously and, in 2012, we took part in the Scheme's survey of UK mathematics departments. We found the process useful in assisting us to examine our working practices and identifying areas of strengths and weakness: the findings of that survey have fed into this application.

I was delighted when the OU gained a Bronze Athena SWAN award and our Department was selected as one of the first in the University to make a departmental submission.

I played a full part in the preparation of this submission and provided opportunities for departmental engagement via discussions and within a range of formal meetings, including full departmental meetings and meetings of the Senior Management Team.

Writing this application for a Bronze award has been particularly useful in highlighting some areas of weakness which, as the Action Plan shows, we intend to address. In particular, it is clear that we have considerable work to do to improve the support we provide to individuals when they return from extended periods of leave such as maternity leave. It has also highlighted for us an issue that we were not previously aware of: the low proportion of women on our MSc programme.

More positively, it has also provided encouragement in that, although far from perfect, we do have areas of good practice that we can build upon. In particular, we provide a very flexible and supportive working environment and have had notable success in supporting the careers of women in the Pure Mathematics Group. We are now working to transfer this good practice to the rest of the Department.

I recognise the importance of ensuring that all staff can realise their full potential and Athena SWAN is now a high profile part of the Department's work that is being embedded in all aspects of our activities. In order to facilitate this, Athena SWAN work is a recognised activity in workload planning and, to aid delivery of our Action Plan, I will ensure that individuals have space in their workload plans to deliver the objectives and, where appropriate, will endeavour to provide the necessary financing.

Regards

Toby O'Neil
Head of Department
Mathematics and Statistics

(498 words used in this section)

2. The self-assessment process: maximum 1000 words

Describe the self-assessment process. This should include:

a) *A description of the self assessment team: members' roles (both within the department and as part of the team) and their experiences of work-life balance.*

The Self Assessment Team (SAT) contains a mixture of men and women at different career stages and from different groups within the Mathematics and Statistics (M&S) Department. The academic members of the team are as follows.

Professor Gwyneth Stallard is the chair of the SAT. She came to the OU in 1994 as a Research Fellow and was promoted to Professor of Pure Mathematics in 2009. She returned to work half-time following maternity leave in 1999 and has gradually increased her hours, returning to full-time work in 2012. She has been chair of the London Mathematical Society (LMS) Women in Mathematics Committee since 2006.

Dr Toby O'Neil is Head of Department. He has a four year old daughter and has led by example, taking full paternity leave, scheduling meetings around nursery times and bringing his daughter to social events.

Mr Derek Goldrei is Deputy Head of Department and a Staff Tutor. He has served on the University's Promotions Committee. His interest in supporting women's careers in mathematics began when he taught at some of Oxford University's women's colleges.

Ms Clem Herman is the Chair of the University SAT and a member of the Mathematics, Computing and Technology Faculty (although not a member of the M&S Department). She is a member of the Faculty Promotions Committee and has been involved in numerous initiatives to support women's careers in STEM both at the OU and externally.

Professor Uwe Grimm is a member of the Applied Mathematics Group and the Associate Dean for Research. He is also a member of the Faculty Promotions Committee and the University SAT.

Professor Kevin McConway is the head of the Statistics Group and a former Associate Dean for Curriculum. He is also a Vice-President (Academic Affairs) of the Royal Statistical Society (RSS) and represents the RSS on the Council of Mathematical Sciences.

Dr June Barrow-Green is a Senior Lecturer in the History of Mathematics. She is a member of the LMS Council, and is actively involved in outreach events, some of which are aimed at women or concern the history of women in mathematics.

Dr Katie Chicot is a Staff Tutor based in the Leeds office. She returned to work part-time (0.6) following her maternity leave. Katie is active in outreach events in mathematics and collaborated with Clem Herman on a funded project on supporting women returning to careers in STEM.

Dr Nick Gill is a Research Associate in Pure Mathematics. He has a young family based in Bristol and works at home several days a week.

Ms Rosie Cretney is a PhD student in the History of Mathematics. She is active in outreach events with schoolchildren.

The main administrative support was provided by the Department Administrator Tracy Johns. Additional support from the Faculty was provided by Pauline Adams and Sue Welfare.

b) *an account of the self assessment process: details of the self assessment team meetings, including any consultation with staff or individuals outside of the university, and how these have fed into the submission.*

The Department was one of the first to become a Supporter of the LMS Good Practice Scheme and, in April 2013, the Department's Good Practice Group was enlarged to form the SAT. The Good Practice Group carried out a departmental survey in 2011 and this enabled the Department to provide a well-evidenced response to the national LMS Benchmarking Survey in 2012. In April 2013, the Department received an individual feedback report from the LMS, enabling the SAT to identify key areas for action. More detail is given in Section 5.

Since April, the SAT has had 5 full team meetings. There have also been numerous meetings of subgroups (some with members of the SAT from the Department of Physical Sciences), discussions of documents via e-mail and consultations with other members of the department. Three members of the Department SAT are also on the University SAT and this has helped to ensure that the Department's Action Plan is properly linked to the University's Action Plan.

The SAT launched its work at the departmental away day in June 2013. The Chair gave a presentation on Athena SWAN, Dr Barrow-Green gave a talk on the history of women in mathematics, and the women in the Department met together during the lunch break to discuss areas in which they felt improvements could be made. The Chair of the SAT consulted women who were not able to attend this event by e-mail and in person to ensure that every woman in the Department had the chance to contribute to the process.

The Chair of the Department SAT was a key player in establishing the LMS Good Practice Scheme and has been involved in discussions with several other mathematics departments working towards or in receipt of Athena SWAN awards (partly through national workshops which she has helped to organise), discussions with the IOP (to learn from the Juno scheme) and discussions with Athena SWAN. She is also a member of the Athena Forum. She has used this experience to inform

her work with the Department SAT. The SAT has also benefitted from the main LMS report arising from the Benchmarking Survey and has used the examples of good practice given there to inform the production of the Action Plan. The statistics in the LMS report have been used to provide national benchmarking data.

The application has been reviewed and approved by the Department's Senior Management Team, the University SAT and the Dean of the Faculty.

c) *Plans for the future of the self assessment team, such as how often the team will continue to meet, any reporting mechanisms and in particular how the self assessment team intends to monitor implementation of the action plan.*

The SAT will continue to meet at least four times a year with the timings planned to enable the Chair to provide an oral report at each of the four annual departmental meetings. Each person leading on any item in the Action Plan will report back to a meeting of the SAT, and the Research Committee and Programme Committee (the main teaching committee) will each provide an annual report to the SAT. The SAT will provide an annual report to the Department's Senior Management Team (SMT) with the Chair of the SAT being invited to other meetings of the SMT as appropriate. The Department SAT will also continue to report on progress to the University SAT and to liaise with other Department SATs at the OU.

(1000 words used in this section)

3. A picture of the department: maximum 2000 words

a) *Provide a pen-picture of the department to set the context for the application, outlining in particular any significant and relevant features.*

The Mathematics and Statistics (M&S) Department is part of the Faculty of Mathematics, Computing and Technology. The Department is made up of four groups: Pure Mathematics (including History of Mathematics), Applied Mathematics, Statistics and a much smaller group in Maths Education.

The Open University was established to provide high-quality distance learning education and now has more students than any other university in the UK. It is structured differently to most universities, employing Central Academics based at the OU campus in Milton Keynes and Regional Academics (Staff Tutors) based in the thirteen regional/national centres.

The M&S Department has 32 Central Academics who are responsible for designing and writing teaching and assessment material, usually as part of a team. Central Academics also conduct research.

The Department has 18 Staff Tutors with responsibility for appointing and managing 700 part-time Associate Lecturers (ALs) who directly support students. Staff Tutors also contribute to writing teaching materials and some do research. Because these two types of academic staff have different contracts and promotion criteria, they have been treated separately in this submission.

Since many ALs also have substantive roles within other organisations, the issues relating to their career progression are complex and are not explored within this submission. The SAT is aware, however, that a large proportion of the ALs are women, a number of whom have progressed to

more substantial posts within the OU and at other universities. Therefore, the Action Plan includes a proposal to obtain a better understanding of the issues surrounding the career progression of ALs in mathematics and statistics. This is particularly timely as an appraisal system for ALs has recently been introduced.

Action Plan 1.8 and 4.7: Improve understanding of the career progression of Associate Lecturers.

The Department has successfully strengthened its key research areas in recent years and now has a thriving research culture, with international leaders who have been awarded national prizes and substantial grant income, in the Pure Mathematics, Applied Mathematics and Statistics Groups.

We offer over 20 undergraduate modules at different levels which contribute to a variety of degrees. Each level 1 mathematics module annually registers 4000 students, many of whom progress to modules in other disciplines. There are around 300 students on each level 3 module. Currently, approximately 250 students per year graduate with a named qualification involving mathematics.

As part of the changes to the funding of the UK university system, part-time students are now eligible for student loans if they are studying for qualifications. This has resulted in the complete redevelopment of the OU curriculum with an emphasis on qualifications rather than individual modules. Most members of the Department are thus carrying heavier teaching loads than normal in order to meet development targets. This situation will persist until at least 2015.

We also offer a range of taught postgraduate modules. The largest programme is the MSc in Mathematics, with around 60 students per year studying each module.

We have both full-time PhD students, funded by competitive studentships, who have offices in the Department, and part-time PhD students, mostly living at a distance from the central campus in Milton Keynes.

Teaching is overseen by the Mathematics and Statistics Programme Committee, which reviews proposals for new modules and degree programmes, and receives annual reviews on all existing modules.

Research is overseen by the Department Research Committee which allocates PhD studentships, oversees the progress and training of research students and considers requests for funding for research related activities and resources.

b) *Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.*

Student data

(i) ***Numbers of males and females on access or foundation courses*** *– comment on the data and describe any initiatives taken to attract women to the courses.*

The Department presents a foundation module `Starting with mathematics' that runs four times a year. Table 1 shows the breakdown by gender of the total number of students studying the module each year.

	2010			2011			2012		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
Foundation module	819	887	48	789	1087	42	562	607	48

Table 1: Students studying the foundation module

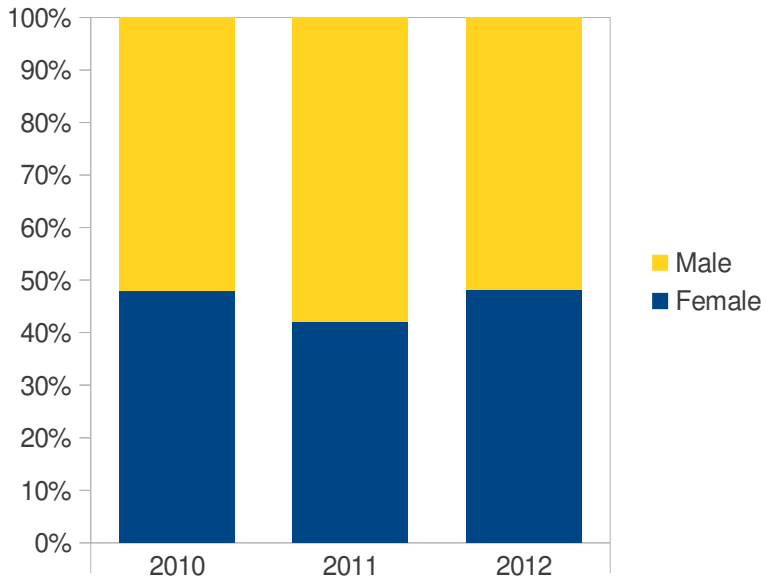

Figure 1: Students studying the foundation module

Figure 1 shows that the proportions of men and women on the foundation module are roughly equal which is encouraging. The figures do fluctuate between years, however, and the SAT will continue to monitor this data each year in order to obtain a better understanding of the long term trends.

(ii) ***Undergraduate male and female numbers*** *– full and part-time – comment on the female:male ratio compared with the national picture for the discipline. Describe any initiatives taken to address any imbalance and the impact to date. Comment upon any plans for the future.*

Table 2 shows the numbers of OU students graduating each year with a named degree involving mathematics. It is important to note that this is a very small proportion of the students studying undergraduate mathematics modules since, prior to 2012, most students registered for individual modules rather than for a whole degree programme. Also, a high proportion of students studying the lower level mathematics modules go on to obtain qualifications in other disciplines such as

science and engineering. This makes it hard to draw reliable conclusions from the figures which vary from year to year.

	2010			2011			2012		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
BSc (Hons) Econ/Math	4	11	27	7	20	26	3	8	27
BA/BSc (Hons) Math	35	63	36	42	72	37	42	61	41
BA/BSc (Hons) Math/Stats	23	22	51	29	31	48	14	36	28
BSc (Hons) Math & learning	8	1	89	11	3	79	11	3	79

Table 2: OU students graduating with undergraduate qualifications containing a significant amount of mathematics and statistics

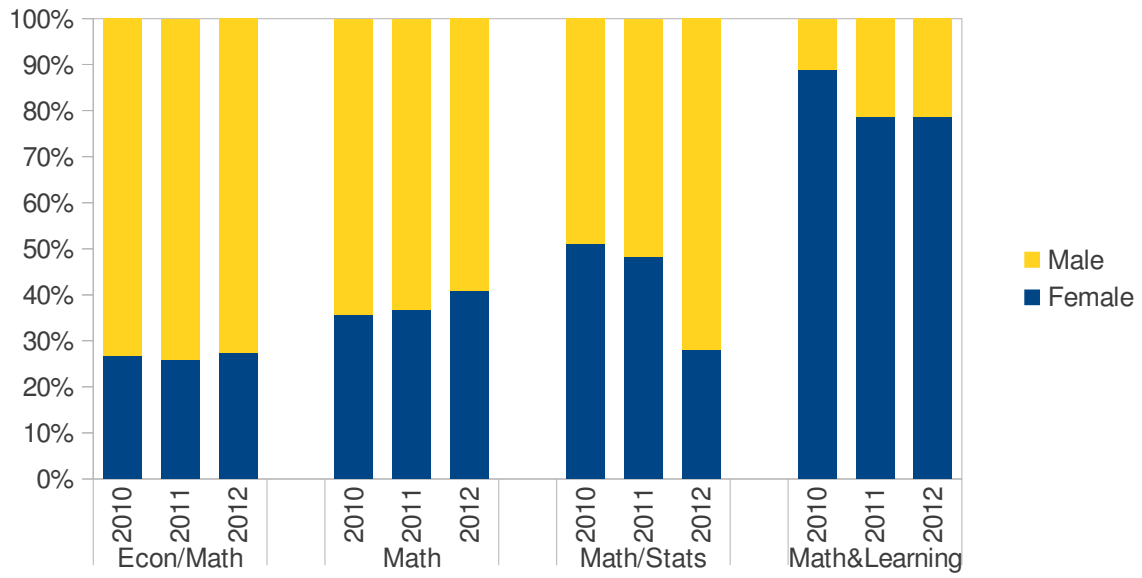

Figure 2: Students graduating with undergraduate qualifications containing a significant amount of mathematics and statistics

Nationally, the proportion of female undergraduates in mathematics was around 44% in 2011. There are, however, significant differences in age, background and career aspirations between the national cohort and the OU cohort, which make comparisons difficult.

Action Plan 1.1: Obtain national data on part-time mathematics students by gender.

Table 2 shows that proportions of women obtaining mathematics and mathematics and statistics degrees are roughly in line with the national average. The proportion of women studying mathematics and its learning is much higher.

The SAT is aware that these figures relating to qualifications represent only a small proportion of our students and so we have analysed additional data on the total numbers of men and women studying undergraduate mathematics modules at levels 1, 2 and 3.

	2010/2011			2011/2012			2012/2013		
	F	M	%F	F	M	%F	F	M	%F
Level 1	2919	5858	33	3059	6058	34	2715	6006	31
Level 2	1705	3472	33	1272	2362	35	1920	3396	36
Level 3	1270	1871	40	1071	1665	39	1401	2072	40
Total	5894	11201	34	5402	10086	35	6036	11474	34

Table 3: Undergraduate students studying courses in mathematics or statistics, by level

Table 3 shows that the proportion of women increases with the level. Further investigation of the data shows that this increase occurs because a high proportion of students who study level 1 mathematics modules and, to a lesser extent, level 2, go on to study modules in other disciplines such as engineering where the proportion of women is much lower.

As indicated earlier, from September 2012, all new Open University students have had to register by qualification rather than module. There are thus new sets of data to analyse. These will be carefully monitored to identify any issues arising from the changes and will provide new information on issues such as progression.

Existing students who are studying under the old modular system are also now required to link their studies to a qualification. Table 4 shows that the new arrangements do not appear to have had a significant impact on the proportion of women. This will continue to be monitored.

	Female	Male	%Female
New students studying qualifications involving mathematics and statistics	452	755	37
Existing students linking their studies to qualifications involving mathematics and statistics	1971	3401	37

Table 4: Undergraduate students linked to qualifications involving mathematics and statistics, 2012/2013

The SAT will liaise with the Programme Committee (see p.6) to ensure that gender is considered routinely as part of the new monitoring process as students move towards qualification based registrations, with appropriate actions being taken if issues are identified.

Action Plan 1.2: Consider gender as part of new monitoring process.

The SAT recognises that the Department website plays a key role in our communications with students, and was surprised to find that there are very few pictures of people at all on the website. The website is currently being redeveloped and the SAT will liaise with the website working group to make it more attractive and personalised with an emphasis on the flexible nature of studying with the OU. There is also a need for more images of women in the undergraduate prospectus.

Action Plan 2.1: Increase visibility of women in prospectus and website.

(iii) ***Postgraduate male and female numbers completing taught courses*** *– full and part-time – comment on the female:male ratio compared with the national picture for the discipline. Describe any initiatives taken to address any imbalance and the effect to date. Comment upon any plans for the future.*

The Department runs two taught part-time distance learning postgraduate programmes. Table 5 shows that the numbers of women obtaining the Diploma in Mathematics Education is consistently very high, contrasting with the low numbers of women graduating from the MSc in Mathematics programme.

	2010			2011			2012		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
Grad Dip Maths Ed	16	5	76	19	3	86	19	8	70
MSc Maths	6	38	14	5	35	12	12	36	25

Table 5: Numbers of students obtaining taught postgraduate qualifications

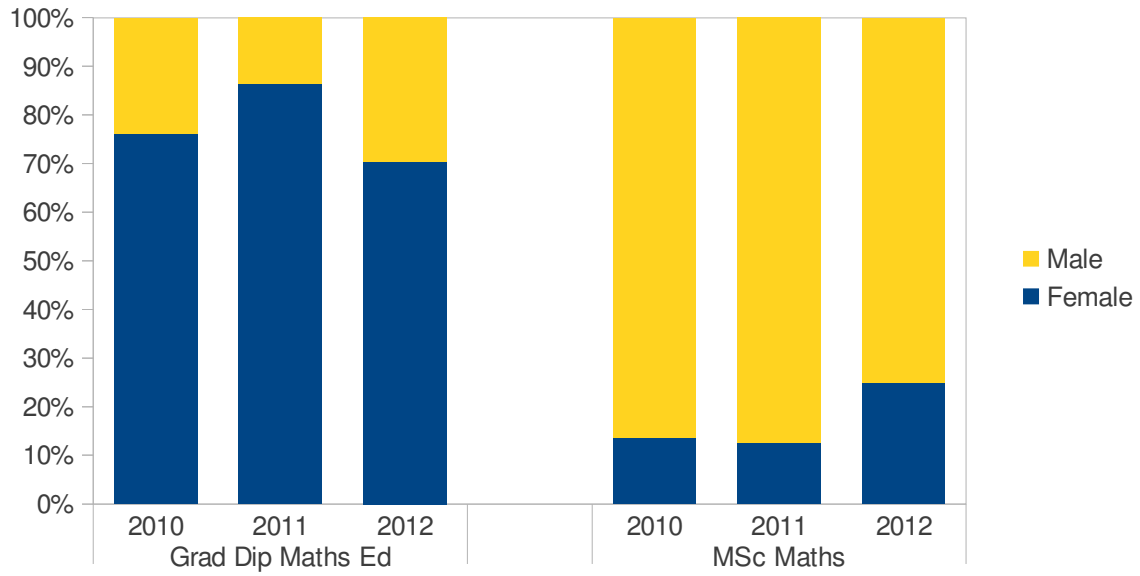

Figure 3: Numbers of students obtaining taught postgraduate qualifications

Nationally, the proportion of women graduating from masters programmes in mathematics was around 34% in 2011. As mentioned above, there are significant differences in age, background and career aspirations between the national cohort and the OU cohort, which make comparisons difficult. The SAT was, however, very concerned to discover that the number of women graduating from the MSc programme is so much lower than the national figure. Initial investigations and discussions suggest that the problem is one of recruitment rather than retention, and have identified a number of possible reasons for the low numbers of women which need to be explored further.

Action Plan 1.4, 2.2 and 2.3: Identify reasons for low numbers of women on the MSc and introduce appropriate actions.

(iv) ***Postgraduate male and female numbers on research degrees*** *– full and part-time – comment on the female:male ratio compared with the national picture for the discipline. Describe any initiatives taken to address any imbalance and the effect to date. Comment upon any plans for the future.*

Table 6 shows the numbers of male and female PhD students in the Department.

	2010			2011			2012		
	Female	**Male**	**%Female**	**Female**	**Male**	**%Female**	**Female**	**Male**	**%Female**
Full-time	2	10	17	4	11	27	4	10	29
Part-time	4	10	29	2	8	20	2	7	22

Table 6: Numbers of students registered to study for a PhD

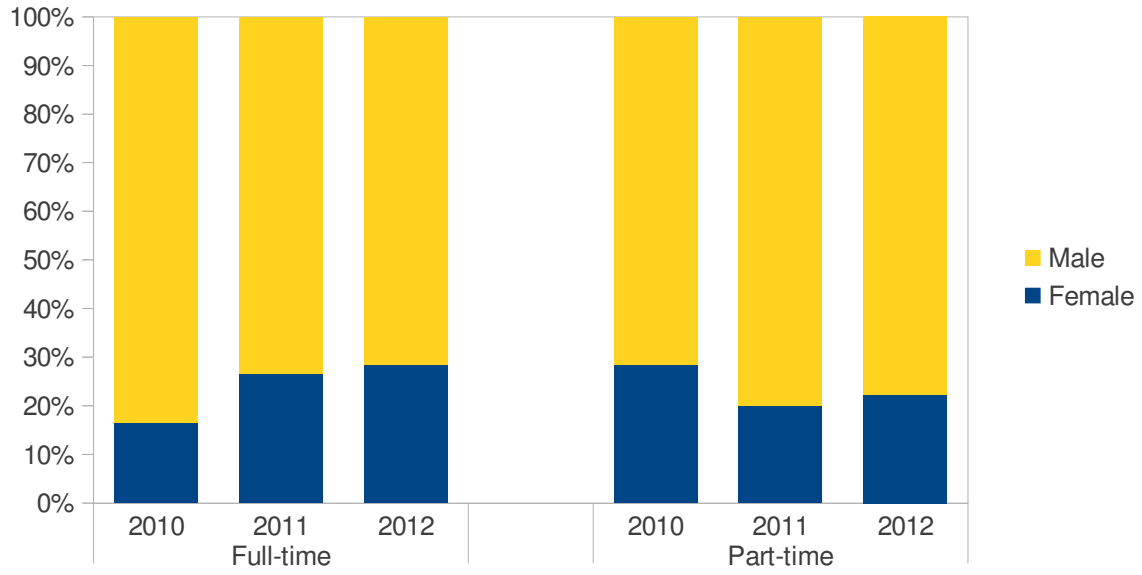

Figure 4: Numbers of students registered to study for a PhD

This data has to be treated with some caution due to the small numbers involved. Although the proportion of part-time PhD students who are women is decreasing, the overall proportion of women is increasing. It is particularly encouraging that the current proportion of full-time students who are women compares favourably with the national average of 25% in 2011.

Many of our PhD students in mathematics have traditionally been recruited from the MSc programme (on which the proportion of women is well below the national average), and this is still the case for the part-time students. Following increased advertising by the Department, there is now greater awareness outside the University that the OU offers full-time studentships. This has led to greater recruitment of students from traditional universities and overseas which in turn has led to an increase in the proportion of full-time PhD students who are women. There is now a friendly group of female PhD students who are actively involved in developing the networking opportunities for women in the Department.

Prospective PhD students are invited to visit, meet members of staff and have lunch with current postgraduate students. This provides a unique opportunity to ensure that female applicants meet female role models (both staff and students). The SAT has discussed this with the Department's Research Committee who will formalise current good practice to ensure that this happens routinely in future. It is also planned to maintain the increased level of advertising and to add case studies of a diverse mix of students to the website.

The Department has recently begun to engage with the Nuffield Foundation Undergraduate Research Bursaries Scheme. Two female students were funded to work alongside academics in the Department over the summer and explore whether they might like to study for a PhD. Both students gave very positive feedback.

Action Plan 2.2, 2.4 and 2.5: Build on existing good practice for recruiting female PhD students.

(v) ***Ratio of course applications to offers and acceptances by gender for undergraduate, postgraduate taught and postgraduate research degrees*** – *comment on the differences between male and female application and success rates and describe any initiatives taken to address any imbalance and their effect to date. Comment upon any plans for the future.*

The OU is highly unusual at undergraduate level in operating an open access policy. Although students are advised on the level of study most appropriate for them, anyone applying for undergraduate study will be accepted.

For the MSc in Mathematics, there is a minimum entry requirement. However, the OU does not currently keep a record of the numbers of students applying, thus there are no figures available for ratios of course applications to offers and acceptances.

Action Plan 1.3: Request that OU begins to record applications for postgraduate taught modules.

Tables 7 and 8 show the application and success rates for PhD places in the Department by gender.

	2010			2011			2012		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
Applications	0	2	0	1	0	100	0	3	0
Offers	0	1	0	1	0	100	0	3	0
% Offers/ Apps	-	50		100	-		-	100	
Enrolments	0	0	-	1	1	50	0	2	0

Table 7: Applications for part-time PhD places in the Department[1]

	2010			2011			2012		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
Applications	1	11	8	4	7	36	2	4	33
Offers	0	2	0	4	3	58	1	3	25
% Offers/ Apps	0.0	18.2		100.0	42.9		50.0	75.0	
Enrolments	0	2	0	3	2	60	1	1	50

Table 8: Applications for full-time PhD places in the Department[1]

[1] There are some anomalies due to some places being offered in one year and accepted in a subsequent year.

The numbers are very small and must be treated with caution, particularly for part-time students where there is no competitive element to the application process. It should be noted that students making informal enquiries are not recorded. There are also some anomalies due to some places being offered in one year and accepted in a subsequent year. The figures do, however, show that female applicants for full-time study have been very successful over the last three years with a total of 5 out of 7 female applicants receiving offers as opposed to 8 out of 22 of the men.

Degree classification by gender *– comment on any differences in degree attainment between males and females and describe what actions are being taken to address any imbalance.*

Table 9 shows the percentages of male and female students obtaining at least a 2:1 degree classification on each of the four degree qualifications involving mathematics. As mentioned earlier, most students are currently registered by module rather than qualification so this data has to be treated with some caution. The proportions fluctuate from year to year but there does not appear to be a significant difference in attainment between men and women.

	2010				2011				2012			
	Female	% of total	Male	% of total	Female	% of total	Male	% of total	Female	% of total	Male	% of total
BSc (Hons) Econ/Math	2	50	6	54	5	71	14	70	0	0.0	5	62
BA/BSc (Hons) Math	26	74	48	76	3	86	58	81	36	85.7	54	88
BA/BSc (Hons) Math/Stats	14	61	14	64	26	90	22	70	12	85.7	24	67
BSc (Hons) Math & learning	5	62	1	100	5	46	1	33	8	72.7	0	0

Table 9: Undergraduates gaining 2.1 or higher on degrees containing a significant amount of mathematics and statistics

(Note that '% of total' means '% of total qualifications earned by people of that gender')

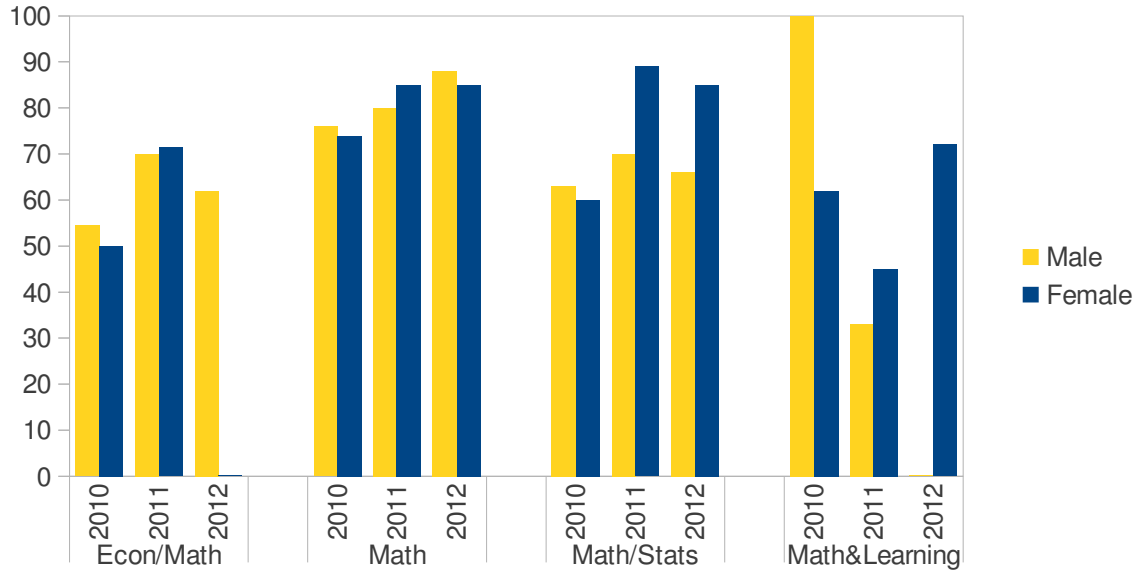

Figure 5: Undergraduates gaining 2.1 or higher on degrees containing a significant amount of mathematics and statistics

Staff data

(vi) ***Female:male ratio of academic staff and research staff*** *– researcher, lecturer, senior lecturer, reader, professor (or equivalent). comment on any differences in numbers between males and females and say what action is being taken to address any underrepresentation at particular grades/levels*

	2010			2011			2012			2013			2011 National Average for %F
	F	M	%F	F	M	%F	F	M	%F	F	M	%F	
Professor	1	10	9	1	10	9	1	10	9	1	10	9	6
Senior Lecturer (CA)	3	7	30	4	5	44	4	5	44	4	5	44	21 (contracts that include both teaching and research)
Lecturer (CA)	6	8	43	5	10	33	5	7	42	5	8	38	
Senior Lecturer (ST)	4	4	50	7	4	64	6	2	75	6	2	75	38 (teaching only contracts)
Lecturer (ST)	5	3	62	4	2	67	6	3	67	7	3	70	
Research Associate	0	3	0	1	5	17	1	3	25	1	4	20	21

Table 10: Academic and research staff numbers

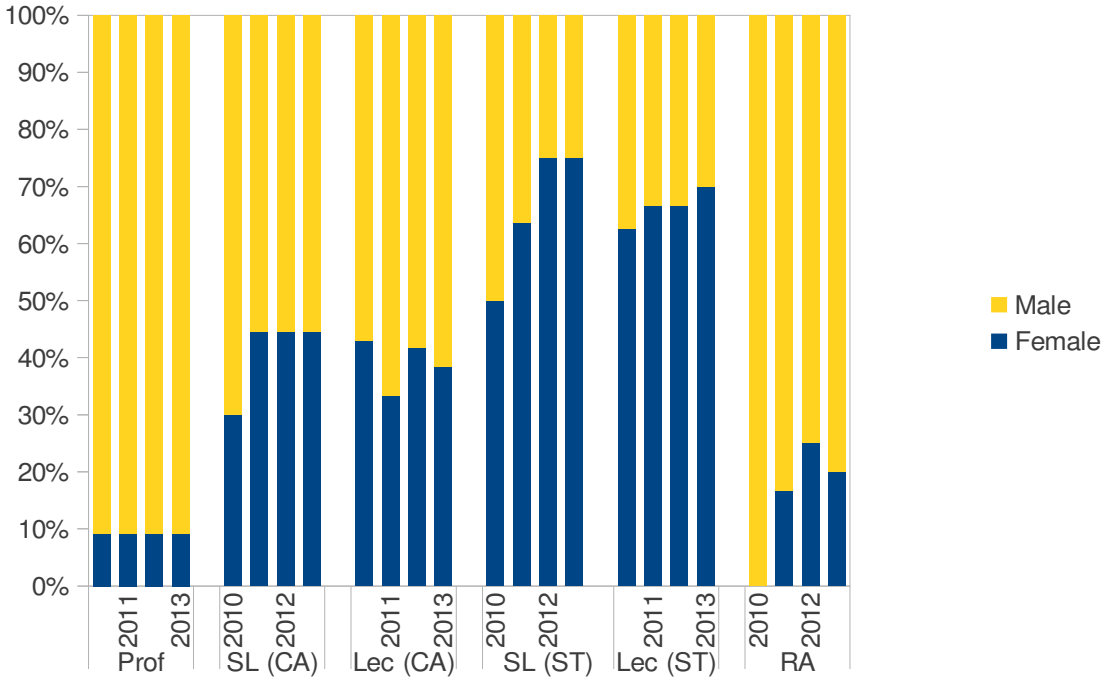

Figure 6: Academic and research staff (CA=Central Academic; ST=Staff Tutor (see p.5))

Table 10 shows that for all grades, apart from research associate, the proportions of women are above the national average. For lecturers and senior lecturers, the proportions of women are well above the national average. The proportions of women are especially high for Staff Tutors. It should be noted, however, that it is currently extremely difficult to be promoted to professor in this role (although the University's promotion criteria are currently under review).

It is encouraging that the proportion of senior lecturers who are women (both Central Academics and Staff Tutors), has increased over the last three years following promotions of female lecturers.

Although the proportion of professors who are women is much lower than the proportion of senior lecturers who are women, this situation is slowly improving: the first promotion of a woman in the Department to professor occurred in 2009. This means that there is now a role model and increased awareness of the need to protect the research careers of women in the Department. The University as a whole is also seeking to address the lower numbers of female professors, and is developing a mentoring scheme for senior members of staff to address this situation.

There are large differences between the three major groups of Central Academics in the Department; it is notable that there are no women in the Applied Mathematics Group. The last appointment in this area was in 2006 so there has been no opportunity for improvement.

The Pure Mathematics Group has a strong track record of supporting staff through the promotion process. All the female Central Academics in the group have been promoted – three are now senior lecturers and one is a professor.

The Statistics Group has a good gender mix but it is striking that all but two of the men are professors and all the women are lecturers. Although this is partly due to age differences, the situation is of concern to both male and female members of the group, who are working hard to

transfer the good practice established in the Pure Mathematics Group to their own setting. This is discussed in more detail in Section 4.

The very low number of research associates in the Department makes it difficult to comment meaningfully on trends. Numbers are, however, slowly rising, reflecting an increase in grant applications.

Action Plan 3.1 – 3.3: Encourage suitable women to apply for vacancies in applied mathematics.
Action Plan 4.2: Encourage senior women to engage with University mentoring scheme.
Action Plan 4.3 – 4.6: Support women in the Statistics Group through promotion to senior lecturer.

(vii) ***Turnover by grade and gender*** *– comment on any differences between men and women in turnover and say what is being done to address this. Where the number of staff leaving is small, comment on the reasons why particular individuals left.*

Table 11 shows the numbers of women and men who have left in the past three years.

	2010		2011		2012	
	F	M	F	M	F	M
Central academic	0	1	0	3	0	0
Staff tutor	0	1	1	2	0	0
Research associate	0	0	0	2	0	1

Table 11: Leavers for the period 2010 – 2012 (including retirees)

Table 11 shows that turnover is very low, especially amongst the women, with only one woman leaving (due to retirement). Of the Central Academics and Staff Tutors, all the leavers were retirees with the exception of one male lecturer on a 3 year post who left to take up a permanent lectureship elsewhere. The research associates were on fixed term contracts and left to take up new positions elsewhere.

(2470 words used in this section – using 470 of extra allowance of 1000 words)

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

Key career transition points

a) *Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.*

(i) ***Job application and success rates by gender and grade*** *– comment on any differences in recruitment between men and women at any level and say what action is being taken to address this.*

Over the past three years, the Department has recruited four Central Academic lecturers, five Staff Tutor lecturers and three research associates. Table 12 shows the proportions of men and women applying, being shortlisted and being appointed in each of these three categories. Because of the low numbers of jobs involved, the figures for the three years have been combined together.

Table 12 also shows the numbers of research associates who have been appointed as a result of being named on successful grant applications. These are all in the statistics group, which has a policy of identifying PhD students with the potential to work successfully at research associate level and including them on grant applications.

	Applied			Shortlisted			Appointed		
	Female	Male	%Female	Female	Male	%Female	Female	Male	%Female
Central Academic Lecturer	21	93	18	2	11	15	0	4	0
Staff Tutor Lecturer	22	48	31	9	5	64	5	1	83
Open Research Associate	18	72	20	2	11	15	0	3	0
Named Research Associate	N/A	N/A	-	N/A	N/A	-	1	2	33

Table 12: Recruitment of academic and research staff, March 2010 – March 2013.

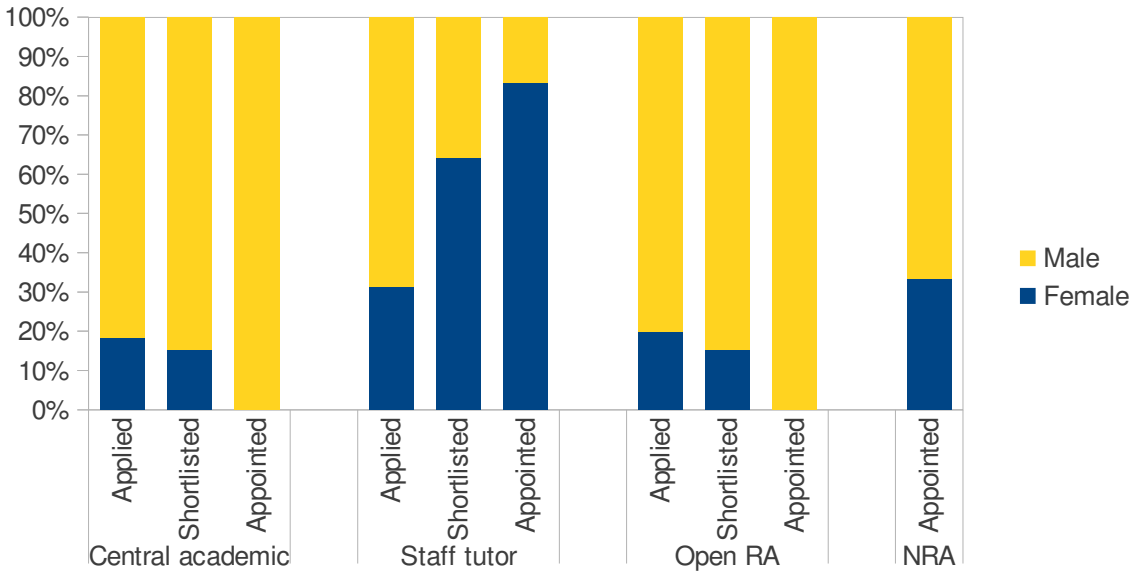

Figure 7: Recruitment of academic and research staff, March 2010 – March 2013

Figure 7 shows that there are striking differences in the success rates of women depending on the nature of the job for which they are applying. In particular, women have been very successful at obtaining Staff Tutor posts – despite only 31% of the applicants for these posts coming from women, 4 out of 5 of the vacancies were filled by women.

The main concern is the fact that no women were appointed as Central Academics or to the advertised research associate posts – although the small number of posts involved should be taken into account. It should also be noted that two of the research associate posts were in very specific areas with a limited pool of possible candidates.

The proportion of applicants for the Central Academic lectureships who were women was just below the national average of 21% for the proportion of such posts held by women. It might have been expected that one of the four posts would be offered to a woman. It should be noted, however, that one post was a temporary job that attracted very few applicants (none from women) and one female candidate who was shortlisted for a lectureship was subsequently encouraged to apply for a Staff Tutor post to which she was appointed.

Despite the allowances that have to be made for small numbers, the SAT is concerned by the large differences between the success rates for the different types of posts and a further analysis of the issues and proposed actions are given in (b)(i) below.

(ii) ***Applications for promotion and success rates by gender and grade*** *– comment on whether these differ for men and women and if they do explain what action may be taken. Where the number of women is small applicants may comment on specific examples of where women have been through the promotion process. Explain how potential candidates are identified.*

In the three year period, all promotion cases were from lecturer to senior lecturer. There is a two stage process for promotions at this level. Firstly, candidates identified by the Department (or self nominations) are put forward to the Faculty's Academic Staff Promotions and Rewards Advisory Group (ASPRAG). Following a period of consultation and discussion with candidates during which cases are revised, a decision is made by ASPRAG as to which cases to put to the University Committee. ASPRAG has commented on the high quality of the cases produced by the M&S Department and has put all cases from this Department through to the University Committee. The outcomes from the University Committee are shown in the table below.

	2010				2011				2012			
	Applications		%successful		Applications		%successful		Applications		%successful	
	F	M	F	M	F	M	F	M	F	M	F	M
Central academic	1	1	100	0	0	1	-	100	1	0	0	-
Staff tutor	1	0	100	-	0	0	-	-	0	0	-	-

Table 13: Staff promotions in the Department, 2010 – 2012

There appears to be no difference according to gender over the three years. It should be noted that the Department has a policy of working with those members of staff whose applications for promotion are unsuccessful and helping them to reapply, taking the feedback from the University Committee into account. For example, the man who was unsuccessful in 2010 was successful in 2011.

Although there were no cases for promotion to professor in the three year period, three members of the Department (2 men and 1 woman) were promoted to professor in 2009. The woman was the first in the Department to be promoted to professor and the promotion was given while she was working part time.

The Department places great importance on helping members to prepare themselves for promotion through careful workload planning and help with writing cases. The CVs of all departmental members are carefully reviewed annually by two senior members to identify potential candidates for promotion. Candidates not identified in this way may put themselves forward for promotion.

Experienced members of staff on the Faculty's Promotions Committee devote considerable amounts of time to helping with the preparation of promotion cases including the personal statement required from the candidate. The Pure Mathematics Group has been particularly pro-active and successful in supporting candidates through the promotion process, including several women who were promoted whilst working part-time. As described earlier, members of the group are now actively supporting members of the other groups within the Department through the process.

b) *For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.*

(i) ***Recruitment of staff*** *– comment on how the department's recruitment processes ensure that female candidates are attracted to apply, and how the department ensures its short listing, selection processes and criteria comply with the university's equal opportunities policies.*

Recruitment panel chairs must undergo equality and diversity training and panel members are encouraged to do so. All panels include both men and women and the full panel is involved in the shortlisting process. The chair of the SAT has been on the selection panels for all three research associates and three of the four Central Academic lecturers over the past three years and ensured that all female candidates were carefully considered at both shortlisting and at the interview stage. However, the SAT has realised that more could be done to encourage women to apply for posts.

Action Plan 3.1-3.3: Pro-actively encourage female applicants.

(ii) ***Support for staff at key career transition points*** *– having identified key areas of attrition of female staff in the department, comment on any interventions, programmes and activities that support women at the crucial stages, such as personal development training, opportunities for networking, mentoring programmes and leadership training. Identify which have been found to work best at the different career stages.*

As the data shows, the proportions of women in the Department at all career stages from lecturer onwards are well above the national average. Female Staff Tutors' career progression is good, as is that of Central Academics in the Pure Mathematics Group. The main area of concern is the fact that no female Central Academic in the Statistics Group has ever been promoted to Senior Lecturer. The Statistics Group is highly successful on the research front with a number of distinguished male professors. There is concern that the women have taken on substantial teaching commitments which have not been rewarded by promotion. There is now a recognised need to protect women's research careers and to continue to ensure that they are given appropriate leadership jobs that will help towards promotion. Good practice is now being transferred across from the Pure Mathematics Group which has a strong record in this area. The SAT is planning new networking events to enable women across the Department to meet together and share advice.

All new members of staff are allocated a mentor to help them settle in. Some mentors are more pro-active than others and there is scope for improvement here. The University is also developing a mentoring programme for more established academics, partly with the aim of narrowing the gender gap at professorial level. Members of the Department will be encouraged to participate in this programme.

Action Plan 4.1: Formalise expectations of mentors for early career staff.
Action Plan 4.2: Encourage senior women to engage with University mentoring scheme.
Action Plan 4.3 – 4.6: Support women in the Statistics Group through promotion to senior lecturer.

Career development

a) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.

(i) ***Promotion and career development*** *– comment on the appraisal and career development process, and promotion criteria and whether these take into consideration responsibilities for teaching, research, administration, pastoral work and outreach work; is quality of work emphasised over quantity of work?*

The Faculty has an annual cycle for workload planning and appraisal that is informed by the promotions cycle as follows:

1. In the autumn, there is a Faculty-wide call for current CVs from all academic staff.
2. These CVs are examined by (at least) two individuals from the Department's Senior Management Team (SMT) to identify potential promotion and reward candidates, as well as areas of career development needed to enable future promotions. The outcome of this process is discussed at the first SMT meeting of the year; potential promotion cases are then developed for the Faculty promotion process.
3. In May, annual appraisals for academic staff (including research associates) take place. Most appraisals are conducted by the discipline lead. Discipline leads and Professors are appraised by the HoD. Staff Tutors are appraised by the Deputy HoD and two other senior Staff Tutors, the three of whom appraise each other. Appraisal outcomes feed into the workload planning of the Department for the following year.
4. In June, Department members complete their preliminary workload plans for the following year and submit their research and scholarship plans to the Research Director/HoD, so that there is an early indication of resource requirements (e.g. funding for travel or equipment).
5. These plans are reviewed by the HoD, Programme Director and some of the Faculty Executive for equitability and appropriateness.

Promotions to Senior Lecturer are decided by the University's Academic Staff Promotions Committee (ASPC) and excellence must be demonstrated in at least two of these areas:

(a) teaching,
(b) research and/or scholarship,
(c) administration and management,
(d) other work (such as public engagement).

Normally, (a) and (b) are required areas for Central Academics (although some cases are based on other areas), whereas Staff Tutors are required to include (c) as one of their two areas. As noted earlier, cases are normally only submitted to ASPC after thorough consideration and support by the Faculty's Academic Staff Promotions and Rewards Advisory Group (ASPRAG). Unsuccessful candidates are always supplied with feedback by ASPC and in appropriate cases this feedback encourages them to apply again once their case is stronger.

Because of the varied nature of OU work, there are many types of activities that can be included in each of the above areas and a range of examples are given in the University's guidance

documents, the emphasis in each case being on the excellent quality of the contribution. It is also stated that ASPC is sympathetic to career paths of different types, such as those including career breaks and professional experience. It should be noted that that the senior lecturer promotion criteria are currently being reviewed with equality and diversity issues in mind.

Promotions to reader or professor are decided by a subcommittee of ASPC. Cases are submitted after consideration by the Faculty's Chairs Working Group (CWG) who work with heads of departments and individuals to identify and support appropriate candidates. Candidates are judged on their work in the areas given above. For a readership, greater emphasis is placed on excellence in research than in teaching; for a chair, outstanding performance in at least two areas is required, one of which should normally be teaching and the other of which is usually research.

(ii) ***Induction and training*** *– describe the support provided to new staff at all levels, as well as details of any gender equality training. To what extent are good employment practices in the institution, such as opportunities for networking, the flexible working policy, and professional and personal development opportunities promoted to staff from the outset?*

The OU has a very comprehensive induction programme. The Department Administrator has enhanced the University documentation by adding relevant names and links to useful documents. She has also added an induction checklist to ensure that all tasks are completed in a timely manner and that relevant staff are aware of their responsibilities. The programme lasts about three months with four stages:

1. Before a new employee starts, they are contacted by the Department Administrator to ensure that any necessary resources and equipment are in place when they arrive. A personalised induction programme is drawn up in discussion with the line manager.

2. When the employee arrives, they are met and welcomed, and over the first few days they have meetings with key people in the Department and are shown around the campus. The induction programme and pack is carefully discussed.

3. Over the first few weeks, further meetings are held to discuss probation, appraisal and training needs. The new employee also works through an online induction module.

4. Over the next few months, the employee completes the induction programme and is invited to a University welcome session. Further meetings are held to agree probation targets and evaluate the induction programme.

New employees are given details of all OU policies on equality and diversity, and a range of policies to support those with caring responsibilities including information on childcare vouchers and the nursery. All new staff are required to undertake online diversity training. Throughout the induction programme, an emphasis is placed on the importance of respecting personal dignity and diversity.

(iii) ***Support for female students*** *– describe the support (formal and informal) provided for female students to enable them to make the transition to a sustainable academic career, particularly from postgraduate to researcher, such as mentoring, seminars and pastoral support and the right to request a female personal tutor. Comment on whether these activities are run by female staff and how this work is formally recognised by the department.*

All students studying for taught courses at the OU study part-time at a distance and are therefore supported in a very different way to students at other universities. Each student is assigned an Associate Lecturer for each module that they study; student surveys show consistently high levels of satisfaction with the support that students receive from ALs. The initial allocation of students to ALs is determined by geographical location, but requests for a female AL would be accommodated if possible. PhD students are supported in a more traditional manner. All PhD students have two supervisors and a third party monitor (an independent member of staff who they can turn to for advice and support). Currently all female PhD students in the Department have a female supervisor or third party monitor; it has been agreed that this good practice should be formalised.

As mentioned earlier, new networking events for women in the Department (including PhD students) are currently being organised by the departmental SAT. (The work of the group is a recognised task in workload planning.) The first event to be organised is a tea and cake session to welcome new female PhD students and introduce them to other female members of the Department. Future events will include discussions of ways of succeeding in an academic career. Networking events for women in STEM are also being organised as part of the University Action Plan and female PhD students are encouraged to take part in these.

The Department encourages and funds female PhD students (full-time and part-time) to attend the national Women in Mathematics events organised by the LMS. This enables them to meet successful female mathematicians from a variety of career stages as well as female students from other universities, and provides a valuable opportunity to discuss career progression as well as mathematics.

The Department and University run training sessions for PhD students to which both full-time and part-time students are invited, with expenses provided for part-time students. Students have opportunities to present talks and are encouraged to play a full part in the departmental seminar programmes. Students also often join members of staff for lunch and occasional social events are organised.

It is recognised that it is important to have a range of female role models and so, after consultation, it has been agreed to formalise the current good practice of trying to ensure that there is a good proportion of female seminar speakers. A target of 20% female speakers has been chosen as this reflects the proportion of academic mathematicians in the UK who are women.

Action Plan 2.6 and 2.7: Encourage female PhD students to participate in networking events.

Action Plan 5.4: Ensure at least 20% of invited speakers are women.

Organisation and culture

a) *Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.*

(i) ***Male and female representation on committees*** *– provide a breakdown by committee and explain any differences between male and female representation. Explain how potential members are identified.*

Data is given for the main Department committees which are described below.

The *Department's Senior Management Team* consists of a core team comprising the HoD (male), the deputy HoD (male), the Programme Director (female) and the Research Director (male), who deal with day-to-day issues, together with an extended team, which meets on a monthly basis and includes the discipline leads, the MSc Qualification lead and the level-1 study lead.

The *Mathematics and Statistics Programme Committee* is chaired by the Programme Director and governs our teaching. It has a membership based on University requirements and includes nominees from the Department disciplines, the Faculty and other parts of the University that use our courses.

The *Department Research Committee* is chaired by the Department's Research Director and has nominees from each of the Department disciplines. This is currently supplemented by a *Department REF Committee* established to oversee the preparation of the REF submission. This has a substantial overlap with the Research Committee.

Data is also given for the two Faculty committees which deal with promotion cases as described on pp.22-23.

The *Chairs Working Group* is chaired by the Dean (female) and has a membership comprising of two professors nominated by each Department.

The *Academic Staff Promotions and Rewards Advisory Group (ASPRAG)* is also chaired by the Dean and has a membership comprising of an Associate Dean together with two members of each Department – the HoD plus one other nominated by the Department.

	2010			2011			2012		
	Female	**Male**	**%Female**	**Female**	**Male**	**%Female**	**Female**	**Male**	**%Female**
Department Senior Management Team	1	7	12	1	7	12	2	8	20
Department Programme Committee	-	-	-	7	12	37	7	11	39
Department Research Committee	-	-	-	2	5	29	2	6	25
Department REF Committee	-	-	-	1	7	12	1	7	12
Chairs Working Group	1	8	11	3	6	33	4	5	44
ASPRAG	5	6	46	5	6	46	5	6	46

Table 14: Departmental and Faculty Committee membership, 2010 – 2012

(Note that some committees did not exist in 2010; also ASPRAG = Academic Staff Promotions and Rewards Advisory Group)

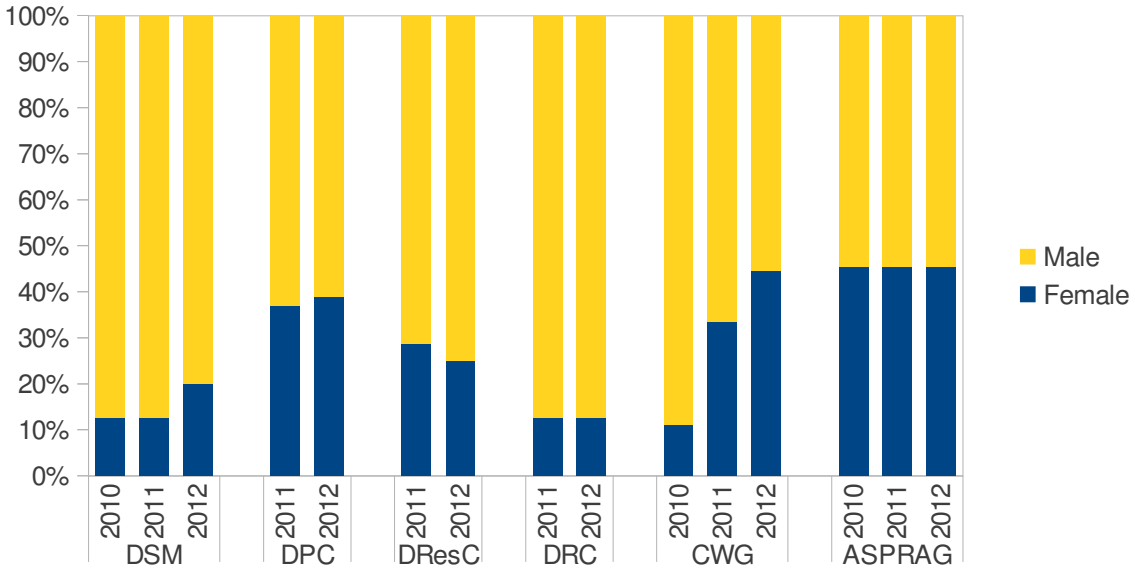

Figure 8: Committee membership, 2010 – 2012

This is the first time that this data has been collected and it shows that, for many of these committees, the proportion of women reflects the gender balance of the Department.

There are, however, relatively low proportions of women on the Department's Senior Management Team, and the REF and Research Committees. This is partly due to the fact that many of the women in the Department are Staff Tutors and therefore have less time to devote to research. It does, however, highlight the need to ensure that those women who are researchers are supported in maintaining their research and encouraged to participate at committee level.

Action Plan 4.3: Ensure female members of staff feel supported in their research careers.

The data also reflects the fact that many of the senior departmental roles are held by men. There are several mechanisms for appointment to senior roles in the Department. The HoD and Programme Director are Faculty-appointed positions with an open application call and interview process, which appoints against a pre-determined person specification. Most of the other roles described are within the Department's remit and have less formal appointment processes. A group of senior Faculty members (including the HoD) is currently working to improve transparency in appointment processes by increasing the number of senior roles for which there are clearly described duties and responsibilities enabling appointments against a specification.

The number of women on the Department's Senior Management Team is increasing and women also play a key role as leaders of module teams. Both women and men are encouraged to take on these leadership roles as part of their career development and to increase their prospects for promotion.

Action Plan 5.2: Develop a more transparent process of allocating senior roles and encourage women to apply.

(ii) ***Female:male ratio of academic and research staff on fixed-term contracts and open-ended (permanent) contracts*** *– comment on any differences between male and female staff representation on fixed-term contracts and say what is being done to address them.*

There are very few members of the Department on fixed-term contracts (and only one of these is a woman). There are therefore no concerns on this issue. Because of the small numbers, it does not make sense to include a data table. Instead we describe the limited number of fixed term contracts that have been used.

Over the past three years, only two members of academic staff (both male Central Academic lecturers) have been on fixed-term contracts. All other academic staff (including all the women) are on permanent contracts.

All research associates are on fixed-term contracts. In the past three years, there has been only one female research associate (in line with the national average).

b) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.

(i) ***Representation on decision-making committees*** *– comment on evidence of gender equality in the mechanism for selecting representatives. What evidence is there that women are encouraged to sit on a range of influential committees inside and outside the department? How is the issue of 'committee overload' addressed where there are small numbers of female staff?*

The data on the gender balance of these committees has only recently been collected and has proved enlightening (see (a)(i) above). It shows that women are represented on all the important Department and Faculty committees and, on some of these, the proportion of women is higher than might be expected. It is particularly striking that 44% of the members of the Faculty Chairs Working Group are currently women even though this is the only committee for which all members must be professors.

Although the proportions of women on the REF and Research Committees are relatively low, active steps were taken to ensure that the REF Committee contained at least one woman and there is now an awareness that the gender balance of these committees needs to be kept under careful review.

Despite the relatively large proportion of women within the Department, only a small number of women hold senior roles and so their time is used carefully. In addition, two of the senior women in the Department hold leading roles at a national level in organisations such as the London Mathematical Society. This work is encouraged by the Department and allowed for in their workload planning.

The Department also encourages more junior members to become members of committees where appropriate. This enables a good gender balance to be achieved whilst reducing the risk of committee overload for senior women and provides opportunities for others to develop their skills so that they are eligible for more senior roles in the future.

Action Plan 1.6: Obtain annual report on gender breakdown of committees and address any imbalances.

(ii) ***Workload model*** *– describe the systems in place to ensure that workload allocations, including pastoral and administrative responsibilities (including the responsibility for work on women and science) are taken into account at appraisal and in promotion criteria. Comment on the rotation of responsibilities e.g. responsibilities with a heavy workload and those that are seen as good for an individual's career.*

As described on p.22, the Faculty has an annual cycle for workload planning and appraisal that is linked to the promotions cycle.

Following a discussion at appraisal, members of the Department complete an electronic workload planning form giving the number of days they expect to spend on identified activities

in the following year. There is a wide variety of activities against which days can be recorded, including work on Athena SWAN. Work on such activities is recognised under the administrative criteria for promotion; indeed the leading role carried out by the chair of the SAT at a national level to advance the careers of women in mathematics made a significant contribution to her successful case for promotion to professor.

The University criteria for promotion from lecturer to senior lecturer require evidence of leadership and one of the important parts of the annual review process described earlier is to identify individuals who have yet to show evidence of this in their work and provide them with opportunities to develop.

Roles such as HoD, Research Director and Programme Director are all time-limited (usually for three or four years with some limited extension possible) and, although potentially career enhancing, are recognised as coming at a substantial cost to an individual's ability to maintain a successful research profile.

Although there is some guidance available on the expected amount of time to be spent on various tasks, it is not sufficiently detailed or well publicised and so staff are sometimes unsure whether their workload allocation is fair and when to accept or decline suggestions that they take on new tasks.

Action Plan 5.1: Publicise guidance on workload expectations.

(iii) ***Timing of departmental meetings and social gatherings*** *– provide evidence of consideration for those with family responsibilities, for example what the department considers to be core hours and whether there is a more flexible system in place.*

The main departmental meetings are scheduled between 10.30 and 4.00 and it is very unusual for other meetings to start before 10.00 or to finish after 5.00. Many meetings involve Staff Tutors who have to travel long distances and are therefore planned well in advance in order to allow staff to make appropriate arrangements. It is very common for staff to join in by conference phone or by a system which allows staff to join in remotely via the web. This allows remote participants to see slides, hear presentations and to type contributions to the discussion. It has been particularly appreciated by Staff Tutors who have been able to use the system to access some seminars.

Seminars are arranged to fit in with the caring responsibilities of group members and there are opportunities to socialise in various ways before and after such events. Timings are changed periodically to adjust to the changing needs of group members.

The statisticians gather in the common room for coffee each morning at 10.00. Groups of both statisticians and mathematicians lunch together in the refectory. Occasional social activities are organised to which families are invited.

Action Plan 5.3: Annual consultation on timing of seminars.

(iv) ***Culture*** *–demonstrate how the department is female-friendly and inclusive. 'Culture' refers to the language, behaviours and other informal interactions that characterise the atmosphere of the department, and includes all staff and students.*

A survey in 2011 confirmed that the Department is seen to be very friendly and welcoming. The lunch groups mentioned above include staff at all levels including PhD students and are often joined by partners and small children (including the HoD's daughter).

There are many senior members of staff with "open doors" whom others know that they can approach and discuss issues with if necessary. In particular, this includes the HoD who is very approachable and regularly joins staff at lunch.

(v) ***Outreach activities*** *– comment on the level of participation by female and male staff in outreach activities with schools and colleges and other centres. Describe who the programmes are aimed at, and how this activity is formally recognised as part of the workload model and in appraisal and promotion processes.*

Many academic staff and PhD students are actively involved in a variety of outreach activities. The work of three members of the SAT is described here in some detail but there are many other members of the department (including several men) who are involved in similar activities.

Several members of staff have run Masterclasses for bright school pupils through a scheme organised by the Royal Institution. Dr Katie Chicot (a Staff Tutor at the OU Regional Centre in Leeds) is particularly involved in this work and was asked to initiate a new Masterclass series in Bradford. She is also a director of the UK Mathematics Trust (UKMT) which organises national mathematics competitions and other mathematical enrichment activities for secondary age children and is responsible for training the UK Mathematical Olympiad Team. UKMT has recently established a new Olympiad for Girls (UK MOG), for which uptake has been very encouraging: in 2013 it attracted 1201 entries, an increase from 247 entries in 2012.

Rosie Cretney (a full-time research student at the central Milton Keynes campus) is active as a volunteer for the UKMT. In particular, she is a member of the development group for the UKMT Team Maths Challenges, and has assisted with the running of mathematics summer schools (including one for girls only) and Mathematical Olympiad training camps.

Dr June Barrow-Green (a Senior Lecturer at the central Milton Keynes campus) is also involved in outreach activities. She has given talks in girls' schools about the history of women in maths, and is participating in planning meetings for the next annual Women of the World festival organised by the Southbank Centre, which is to include maths for the first time. She recently took part in a related one day event at the London Eye to provide speed mentoring for schoolgirls.

More widely, the OU has strong links with the media and several members of the Department have acted as contributors or academic consultants to programmes such as "The Story of Maths", "In Our Time" and "More or Less" which aim to make mathematics accessible to the general public.

The Department organises an annual Christmas Lecture to which local sixth formers are invited. The SAT was surprised to discover that, in the past 14 years, only one of these lectures has been given by a woman, and it will ensure that gender is taken into account when inviting future speakers.

The workload planning form allows days to be entered against external activities and these are discussed in appraisal and used in promotion cases.

Action Plan 5.4: Improve gender balance of speakers for Christmas Lecture.

Flexibility and managing career breaks

a) *Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.*

(i) ***Maternity return rate*** *– comment on whether maternity return rate in the department has improved or deteriorated and any plans for further improvement. If the department is unable to provide a maternity return rate, please explain why.*

Table 15 shows that all members of staff who have taken maternity leave in the last three years have returned to work. The Department provides great flexibility on return with many women returning part-time.

	2010		2011		2012	
	Number	%return	Number	%return	Number	%return
Central academic	-	-	-	-	1	100
Staff tutor	2	100	-	-	-	-

Table 15: Women in the Department taking and returning from maternity leave

(ii) ***Paternity, adoption and parental leave uptake*** *– comment on the uptake of paternity leave by grade and parental and adoption leave by gender and grade. Has this improved or deteriorated and what plans are there to improve further.*

Table 16 shows that all members of staff who were eligible for paternity leave in the last three years have taken their full entitlement. The HoD took full paternity leave when his daughter was born in 2009 and has encouraged any member of the Department who is entitled to paternity leave to take their full allowance. There have been no cases where parental or adoption leave would have been applicable.

	2010		2011		2012	
	Number	%uptake	Number	%uptake	Number	%uptake
Central academic	-	-	-	-	2	100
Staff tutor	-	-	-	-	-	-

Table 16: Men in the Department eligible for and taking full paternity leave

(iii) ***Numbers of applications and success rates for flexible working by gender and grade*** *– comment on any disparities. Where the number of women in the department is small applicants may wish to comment on specific examples.*

In the three years under consideration, there was only one formal request for flexible working. This was from a female Central Academic lecturer who wished to reduce her hours to allow her to take on extra consultancy work. This request was turned down. Previously, there have been many requests for flexible working made for personal reasons and these have all been granted. Of the three women returning from maternity leave in the three years under consideration, two were already working part-time and the third has very recently requested a reduction in hours which has been granted.

b) *For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.*

(i) ***Flexible working*** *– comment on the numbers of staff working flexibly and their grades and gender, whether there is a formal or informal system, the support and training provided for managers in promoting and managing flexible working arrangements, and how the department raises awareness of the options available.*

This is an area in which the Department scored particularly highly in the LMS survey and the nature of work at the OU is highly conducive to flexible working.

Over the years, many members of staff have formally requested a reduction in their working hours following a return from maternity leave. This has always been granted and the Department has been very supportive in allowing staff to gradually increase their working hours over a number of years as the children have grown older and circumstances have changed. Some part-time Staff Tutors have also requested temporary adjustments to their working hours to take account of increased workload and these requests have also been granted.

Those working part-time have included both Staff Tutors and Central Academics at the level of lecturer, senior lecturer and professor with promotions being awarded at all levels during periods of part-time working. There is complete openness about these arrangements with timings of meetings and seminars being adjusted to take these into

account. Properly funded cover is put in place to deal with any reductions in the working hours of Staff Tutors.

There is also a wide range of informal arrangements used by staff to work flexibly. Because most of the teaching commitment involves the creation and delivery of distance learning material rather than face to face teaching, it is possible for staff to work at home and many do this one or two days a week.

Arrangements are made for staff to join in meetings remotely where needed. Staff are sometimes involved in running evening online tutorial sessions and the system enables these to be run from home as easily as from the office.

(ii) ***Cover for maternity and adoption leave and support on return*** *– explain what the department does, beyond the university maternity policy package, to support female staff before they go on maternity leave, arrangements for covering work during absence, and to help them achieve a suitable work-life balance on their return.*

The consultation process leading to the preparation of this document has revealed a surprising difference between the levels of support provided to Staff Tutors and to Central Academics.

The maternity leave arrangements of all Staff Tutors in the Faculty are now the responsibility of the Associate Dean (Regions and Nations). She meets with employees before they go on leave and discusses appropriate cover, how to keep in touch during leave, and arrangements for return. Employees are encouraged to make full use of Keeping in Touch (KIT) days to enable them to keep up to date, by phone, e-mail and face to face discussions, with changes occurring during their absence (which have been considerable over the last few years). Discussions are also held to plan workloads and to construct a scholarship/ research plan before the return to work.

During the period of leave, properly funded cover is provided for the employee's regional duties and, if possible, some period of overlap is provided to facilitate a smooth return. Their teaching duties, however, are covered by other members of the Department.

This contrasts with the situation for Central Academics, where discussions are held with the head of the group before and after leave to discuss workload but there is no attempt to keep in touch during the leave itself and no discussion of the use of KIT days. There is also no cover provided for the maternity leave with workload being shared around other members of the Department.

Both types of staff are encouraged to use accrued leave to enable a flexible return to work and many staff request reduced working hours when they return. This is always granted but, again, cover is more likely to be provided for Staff Tutors.

The OU does provide funding for childcare costs incurred as a result of working extra hours or attending conferences but these are not well advertised. Members of the Department of Physical Sciences have set up a networking group for parents of small children and have recently widened their remit to welcome relevant members of the M&S Department.

The Department has been aware for some time that the level of support provided around maternity leave required serious attention and this was confirmed by the LMS report. This forms a key part of the Action Plan. The SAT will use the LMS Good Practice Scheme to obtain exemplars of good practice in this area and will work closely with the University SAT as this item also forms a substantial part of the University Action Plan.

Action Plan Section 6: Develop support and guidance for women and line managers around maternity leave.

(5167 words used in this section – using 167 of extra allowance of 1000 words)

5. **Any other comments: maximum 500 words**

Please comment here on any other elements which are relevant to the application, e.g. other SET-specific initiatives of special interest that have not been covered in the previous sections. Include any other relevant data (e.g. results from staff surveys), provide a commentary on it and indicate how it is planned to address any gender disparities identified.

As described in Section 1, the Department was one of the first departments in the country to become a Supporter of the LMS Good Practice Scheme and, in April 2013, the departmental Good Practice Group was enlarged to form the SAT. The Good Practice Group carried out a departmental survey in 2011 and this enabled the Department to provide a well-evidenced response to the national LMS Benchmarking Survey in 2012. This detailed survey which contained 90 questions was filled in by 30 mathematics departments from a range of institutions across the UK. In April 2013, the Department received an individual feedback report from the LMS, enabling the SAT to identify key areas for action. Table 17 gives a summary of the good practice scores that the Department obtained. It also gives scores for the quality of the evidence supplied by the Department to support their answers to the questions in the survey, and shows how both types of score compare with the national average.

It should be noted that, in each area, the maximum possible score for good practice was 18 and for evidence was 9. In each of the ten areas surveyed, the Department obtained scores that were at least equal to the national average and, in many cases, were well above.

The SAT has concentrated its attention on those areas receiving the lowest scores: Sections 2, 6 and 10. The relatively low score for Section 2 has been addressed by the work of the SAT in preparing this application. This is the first time that much of this data has been collected and in many cases, it has not been straightforward to obtain. The appropriate parts of the University are now aware of the different types of data required for effective gender monitoring and are working hard to ensure that, in future, this can be routinely supplied on an annual basis. The student data has identified issues of which the Department was previously unaware.

The questions in Section 6 mainly concerned networking and mentoring activities for women. The Department had not previously established any such activities specifically aimed at women, partly because of the relatively large proportion of women in the Department. Consultation has shown that such activities would be welcomed, especially by female PhD students, and this is addressed in Section 4 of the Action Plan.

Section		Good Practice			Evidence		
		OU score	Mean UK score	Standard deviation	OU score	Mean UK score	Standard deviation
1	Organisation for action	10.5	8.0	4.0	9	5.6	2.9
2	Evidence base for action	8	5.8	3.4	9	5.1	2.9
3	Appointments and promotion processes	10	9.2	3.5	8	5.6	2.7
4	Levelling appointment & promotion playing fields	15.5	10.0	3.9	9	5.5	2.6
5	Career development provision	15.5	9.5	4.0	8	5.2	2.9
6	Career development activities	8	7.9	3.1	9	4.5	2.8
7	Effective management	10.5	9.8	3.3	9	5.5	2.7
8	Culture and ethos	14.5	11.2	3.0	8	5.3	3.0
9	Flexibility and sustainable careers	16.5	10.2	3.4	9	4.6	2.6
10	Career breaks and interrupted careers	8.5	8.5	3.6	8	4.8	3.0

Table 17: Summary of scores obtained in LMS survey

Filling in the answers to the questions in Section 10 confirmed the feeling that, although the Department was exceptionally good at enabling flexible working after maternity leave, it did not provide much support in terms of career development at this point and it was agreed that this needed serious attention. This is addressed in Section 6 of the Action Plan.

(449 words used in this section)

6. Action plan

Provide an action plan as an appendix. An action plan template is available on the Athena SWAN website.

The Action Plan should be a table or a spreadsheet comprising actions to address the priorities identified by the analysis of relevant data presented in this application, success/outcome measures, the post holder responsible for each action and a timeline for completion. The plan should cover current initiatives and your aspirations **for the next three years**.

The action plan does not need to cover all areas at Bronze; however the expectation is that the department will have the organisational structure to move forward, including collecting the necessary data.

Open University Department of Mathematics and Statistics
Athena SWAN Bronze Award Submission
Action Plan

Action	Description of Action	Time scale	Lead Responsibility	Success Measure	Links to other institutional plans and strategies
Evidence base for action					
1.1	Obtain national benchmarking data for proportions of women UG mathematics students studying part-time.	2014	Chair of SAT	Data obtained and passed on to the Programme Director for comparison with OU figures.	
1.2	Monitor gender breakdown of numbers of UG students registering for, progressing through and graduating from mathematics based qualifications.	2014 onwards	Programme Director in consultation with IET	Programme Committee reads report and compares with national averages identified in 1.1. Discuss implications and potential actions.	
1.3	Monitor applications and success rates for postgraduate students (MSc and PhDs) broken down by gender, and compare with national figures.	2014 onwards	Director of MSc Programme, Programme Director, Research Director	Applications reported annually to Programme Committee and Research Committee. Discuss implications and potential actions.	
1.4	Carry out a survey of Level 3 UG students to understand gender differences in intention to progress to MSc.	2014 – 2015	Programme Director	Survey produces useful data and further actions are developed in the light of survey findings.	
1.5	Obtain annual report on staff data by gender	2014 onwards	SAT to work with HR on developing systematic reporting	Correct data automatically produced each year so that trends can be monitored and any concerns raised at an early stage.	OU SAT team and HR currently working to develop systematic reporting of data.

1.6	Obtain annual report on gender breakdown of committee membership.	2014 onwards	SAT to review and report to SMT	Committees aware of any issues concerning gender breakdown of membership and appropriate action taken.	
1.7	Organisers of seminars/e-colloquia to provide an annual report on gender breakdown of invited speakers.	2014 onwards	Research Director/ MSc Programme Director	Proportion of women speakers is at least 20%.	
1.8	Associate Lecturers and Staff Tutors surveyed to obtain a better understanding of their background and career aspirations.	2014 – 2015	Deputy HoD/Staff Tutor Group	Good practice (regarding career development) and success stories identified e.g. of ALs who have progressed to become Staff Tutors. Better understanding of career development support required for Staff Tutors.	
Students					
2.1	Liaise with marketing and website group to increase the visibility of women in the student prospectus and on the website.	2014	SAT and Programme Director	Student prospectus and website includes more images and success stories of women.	
2.2	Review advertising of the MSc and PhD programmes to traditional universities. Ensure advertising is appropriately targeted to attract both men and women.	2014 onwards	MSc Programme Director and Research Director	Increased applications to MSc and PhD programmes from students at other universities.	
2.3	Review findings of survey in 1.4 regarding progression to MSc and take appropriate actions.	2015 - 2016	MSc Programme Director	Increased registrations for MSc programme from female students.	
2.4	Ensure that female PhD applicants meet female role models (staff and students) when they visit the Department.	2014 onwards	Research Director	Female PhD applicants routinely meet female role models.	

2.5	Prepare case studies of a diverse group of PhD students to add to the departmental website.	2014	SAT/ Postgraduate Tutor/Website developer	Website features case studies of PhD students.	
2.6	Ensure that all female PhD students have a female supervisor or third party monitor.	2014 onwards	Postgraduate Tutor	All female PhD students have a link with a female member of staff.	
2.7	Encourage female PhD students and postdocs to attend networking events at departmental, university and national level and provide funding to facilitate this.	2014 onwards	Postgraduate Tutor/ SAT	Female PhD students and postdocs participating in networking events for women.	
Appointments					
3.1	Ensure job adverts promote Department as supportive for women and mention flexible working.	2014	SAT/HoD	Increase in number of excellent female applicants applying for posts as Central Academics and research associates.	
3.2	Develop section of departmental website devoted to women in mathematics and showcase the Department's commitment and success in advancing the careers of women.	2014/2015	SAT/Website developer	Increase in number of excellent female applicants applying for posts as Central Academics and research associates.	
3.3	Use women in maths networks to advertise jobs and actively encourage suitable women to apply.	2014 onwards	SAT/SMT	Increase in number of excellent female applicants applying for posts as Central Academics and research associates.	

Career development and promotions					
4.1	Formalise the expectations of mentoring for early career staff.	2014	SMT	Greater consistency in level of mentoring received by early career staff.	Liaise with Science Faculty
4.2	Encourage appropriate senior female members of the Department to participate in the new University mentoring scheme.	2014 (following launch of scheme)	SMT	Senior female academics accessing the programme and responding positively to it.	University mentoring scheme - see Staff Strategy Committee February 2012
4.3	Monitor the teaching load of female members of the Department to ensure they have adequate research time.	2014 onwards	SMT	Female members of staff feel supported in their research careers.	
4.4	Work with Faculty and University to provide appropriate teaching cover for those on research grants.	2014 onwards	SMT	Research time of other Department members is not adversely affected when Department staff are successful in obtaining research grants.	
4.5	Ensure that women are given appropriate leadership roles to assist with promotion.	2014 onwards	SMT	Female members of staff have the appropriate experience to apply for promotion.	
4.6	Share expertise and best practice between groups in preparation of cases for promotion.	2013 onwards	SMT	Women from the Statistics Group are promoted to senior lecturer.	
4.7	Use findings from 1.8 to improve the Staff Development of Associate Lecturers.	2015 - 2016	Staff Tutor Group	Associate Lecturers more aware of possible career opportunities and of success stories of previous ALs.	
4.8	Use findings from 1.8 to improve career development of Staff Tutors.	2015 - 2016	Staff Tutor Group	Staff Tutors feel better supported and in control of their careers.	

Organisation and culture					
5.1	Increase transparency of workload planning by publicising the time expectations of particular tasks.	2014	SMT	Workload planning is seen as fair and transparent.	
5.2	Develop a more transparent process of allocating senior roles and women actively encouraged to apply.	2014	SMT	Increase in number of women taking on senior roles within the Department.	
5.3	Annual consultation on timings of research seminars to accommodate family and other caring commitments.	2014 onwards	Research Committee	All members of Department able to attend seminars.	
5.4	Ensure that all organisers of seminars are aware of need for gender balance in who they invite to speak.	2014 onwards	SAT/Research Committee	At least 20% of invited speakers are women.	
5.5	Establish departmental networking events for female members of staff and PhD students. Timings of some events chosen to allow Staff Tutors to participate. Advertise University networking events and LMS women in maths events.	2013 onwards	SAT	Majority of women participating in departmental networking events. Some women in Department participating in University and national networking events.	University networking events for women established as part of the University Athena SWAN Action Plan.
5.6	Establish annual cycle of reporting between committees on Athena SWAN issues.	2014 onwards	SAT/SMT/Research Committee/ Programme Committee	Department is involved in and owns the Athena SWAN initiative. Issues of equality and diversity routinely considered as part of all decisions.	

Flexibility and career breaks					
6.1	Work with the University SAT to establish an informed picture of current practices around maternity leave for both Staff Tutors and Central Academics by consulting women in STEM departments who have recent experience of maternity leave.	2013 - 2014	SAT	Both Department and University SAT have an informed picture of current arrangements around maternity leave including good practice and areas for improvement.	University Athena SWAN Action Plan includes section on improving support following maternity leave.
6.2	Work with the University SAT and HR to develop a formal checklist and guidelines for managing maternity leave for Staff Tutors and Central Academics.	2014 - 2015	SAT/SMT	New University checklist and guidelines for managing maternity leave in place and well understood by all line managers. Women fully aware of their entitlements and the support available.	University Athena SWAN action plan includes section on improving support following maternity leave.
6.3	Work with the University SAT and HR to develop funded cover of teaching duties to be provided during maternity leave and for a period after maternity leave to support a return to research. Consider the introduction of a research mentor for women returning from maternity leave.	2014 onwards	SAT	Women returning from maternity leave are able to get back up to speed with their research. This does not lead to teaching overload for other members of the group.	University Athena SWAN Action Plan includes section on improving support following maternity leave.

Glossary:

SAT = Self Assessment Team

SMT = Department's Senior Management Team

HoD = Head of Department,

IET = Institute of Educational Technology