



**Athena
SWAN**
Silver Award

Athena SWAN Silver department award application

Name of university: Queen Mary, University of London (QMUL)

Department: School of Engineering and Materials Science (SEMS)

Date of application: 30th November 2012

Date of university Bronze and/or Silver Athena SWAN award: 2010

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1. **Letter of endorsement from the head of department: 495 words**

2. The self-assessment process: 1104 words

- 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) consists of 11 members from SEMS who were selected to represent different levels of seniority and personal experience. To avoid imposing new demands on part-time staff and those who were working flexibly, the SAT was divided between a core group, which was responsible for the submission document, and an advisory group who contributed to the data analysis and made recommendations for future strategies to support the success of women in SEMS and to monitor their impact. The chair of the SAT is Dr Steffi Krause who is also the School's Athena SWAN Champion at College level.

Pen portraits of all members and their roles on the SAT are provided below.

[Please note personal information has been removed for publication]

Core working group

- **Dr Steffi Krause** (chair) is a Reader in Electroanalytical Systems. She joined Queen Mary in 2004 as an EPSRC Advanced Fellow.
- **Jonathon Hills** (secretary) was appointed Research Administrator in October 2007. He is responsible for matters relating to research students, research activity and administration.
- **Prof David Lee** (*Head of School*) was appointed as the head of SEMS in May 2011 and has been a member of the SEMS management team since the school was formed in 2007. **Elena di Mascio** (*responsible for outreach*) has been the SEMS Outreach Officer since 2000. In this role she has implemented various initiatives to encourage female students into Engineering and Materials.
- **Dr Salzitsa Anastasova-Ivanova** (WISE representative) is a Postdoctoral Researcher in Pervasive Sensing. She joined Queen Mary in 2010 on an EU Project. She is the secretary of Women in Science and Engineering (WISE) at the college.
- **Prof Julia Shelton** (senior female academic) is Professor of Biomechanical Engineering and Dean for Taught Programmes in the Faculty of Science and Engineering. **Advisory group:**
- **Dr Tina Chowdhury** was appointed Lecturer in musculoskeletal science in 2008 and has just been promoted to senior lecturer. She received awards from the prestigious Arthritis Research UK and AO Foundation and leads a multi-disciplinary research team involving clinicians, biologists and engineers. She has won the Drapers prize in teaching innovations.
- **Dr Karin Hing** is a senior lecturer in Biomedical Materials. She joined QMUL as a PhD student in 1992, was then subsequently employed as a PDRA in 1995. She was the first woman to be awarded the Royal Academy of Engineering's Silver Medal in 2011 for her personal contribution to the success of ApaTech.
- **Paula Ruiz Hincapie** is a third year research student in mechanical engineering. She was awarded the Westfield bursary in 2008 to support her studies. Her research has successfully supported feasibility studies of cardiac assist devices.
- **Prof Martin Knight** is a professor of mechanobiology. He started at QMUL as a PhD student in 1993 and was awarded an EPSRC Advanced Research Fellowship. He is the programme director for the undergraduate Medical Engineering degree. He has played an active role in student admissions. He is also actively involved in public engagement and outreach work.

- **Dr James Busfield** is a Reader in Materials. He joined QMUL as a lecturer in 1994. He was awarded a National Teaching Fellowship for his pioneering teaching using Problem Based Learning and industrial Based Case Studies. He has published 40 journal papers since 2008 and supervised 16 PhD students since 2000.

b) An account of the self-assessment process:

Following the successful renewal of the college's Bronze award in 2010, QMUL's Athena SWAN committee encouraged a school level silver application. The SAT was formed in early 2012. Reporting to the College committee and to the School, it has met regularly - a total of 4 meetings of the entire SAT and 7 more focused meetings to consider specific issues and actions, to reflect on the progress achieved by the School, to identify weaknesses and to propose actions and mechanisms for monitoring successful outcomes. Feedback was sought electronically and through one-to-one discussions with members of the advisory group. Issues raised by the self-evaluation process and the submission document were discussed at School meetings and draft versions circulated to all members of staff for comment.

c) Plans for the future of the self-assessment team

The SAT, which reports to the College Athena SWAN committee and to the School, will continue to meet three times a year to update and monitor progress of the action plan. The minutes are posted on an internal webpage. Athena SWAN is now a regular part of the agenda of the school's regular staff meetings, raising awareness of the actions that are being implemented and ensuring that the whole School, not simply a sub-set of members, is involved.

3. A picture of the department: 2134 words

a) Pen-picture of the department

The School is part of the Faculty of Science and Engineering. It was founded through the merger of the Engineering and Materials Science Departments in 2007. Over the last four years, the undergraduate and postgraduate courses have been restructured and programmes are now jointly taught by both former Engineering and Materials staff.

Three research groups have been formed in the areas of Biomedical Engineering and Materials, Modelling and Simulation in Engineering Systems and Functional Nanomaterials. Each of these groups is populated by former Engineering and Materials members of staff, promoting close interaction and collaboration.

The school currently has 52 academic members of staff, 7 of whom are female and 25 postdoctoral researchers (PDRAs), 7 of whom are female. The school runs 19 undergraduate Engineering programmes and 18 undergraduate Materials programmes. We also run 11 postgraduate taught masters programmes. Nine of the undergraduate programmes within the Engineering suite of programmes lie in the broad area of Medical Engineering. These traditionally attract a larger proportion of women and will be considered separately.

b) Data for the past three years

Student data

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

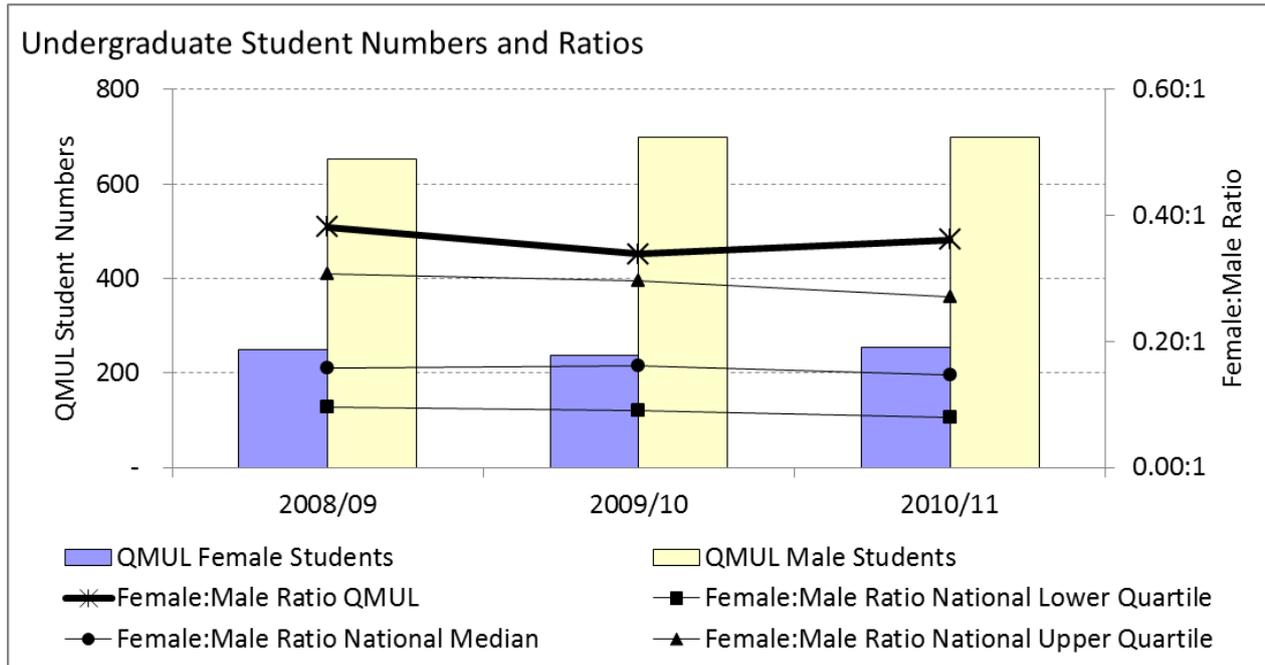
Year	Female Students	Male Students	Female to male ratio
2008/09	28	65	0.426:1
2009/10	30	65	0.458:1
2010/11	31	55	0.562:1

The school runs 4 foundation programmes that lead straight into one of our 3 or 4 year undergraduate programmes. Applicants for our undergraduate courses, who have not studied appropriate subjects at A-level, are encouraged to apply through these entry points. Over the last three years, there has been a steady increase in the female to male ratio on foundation programmes. We attribute this to a greater emphasis on promoting female role models in our publicity and during open days and to the range of distinctive programmes that are attractive to female applicants.

(ii) **Undergraduate male and female numbers**

Overall student population:

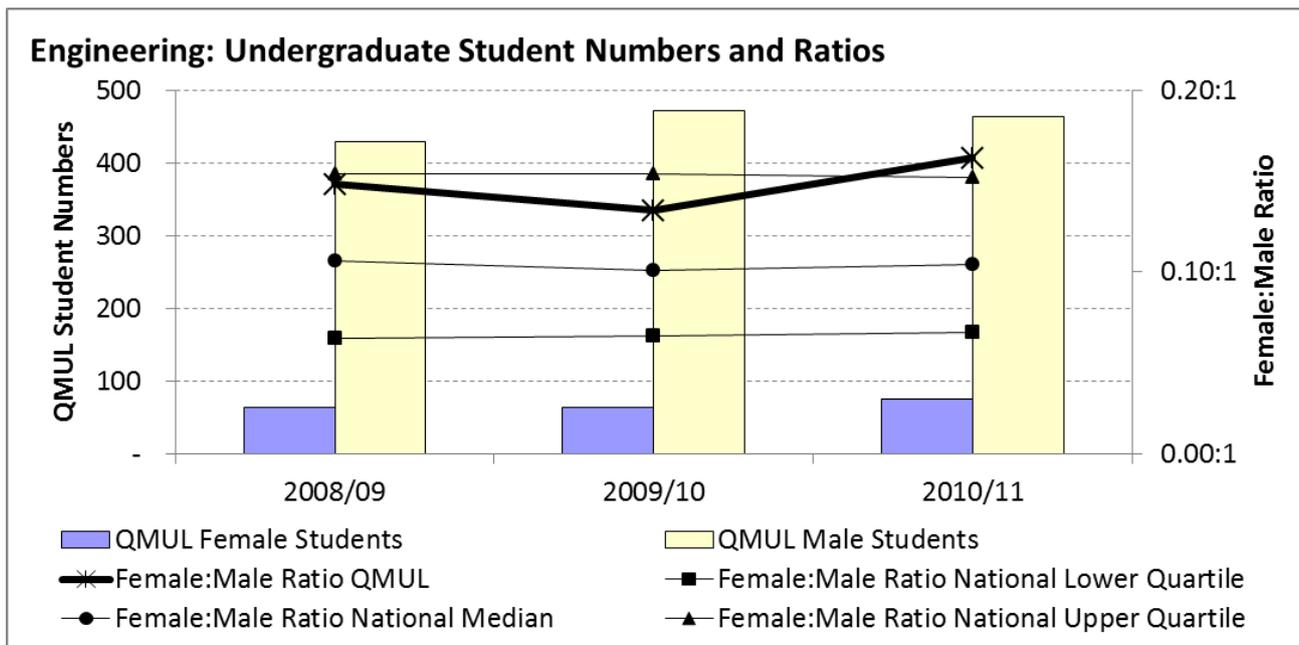
Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	249	652	0.38:1	0.10:1	0.16:1	0.31:1
2009/10	237	699	0.34:1	0.09:1	0.16:1	0.30:1
2010/11	253	699	0.36:1	0.08:1	0.15:1	0.27:1



26% of our undergraduate students across all Engineering and Materials disciplines are female. This has been fairly consistent over the last three years. Compared to a national average of 13% of women, this makes QM one of the most gender balanced institutions for Engineering and Materials in the UK. The large percentage of female students is supported by a strong recruitment onto Medical Engineering programmes, which are generally more popular with women than traditional engineering and materials programmes. To get a more complete picture, student numbers were split into three disciplines: Engineering, Medical Engineering and Materials:

(a) Engineering

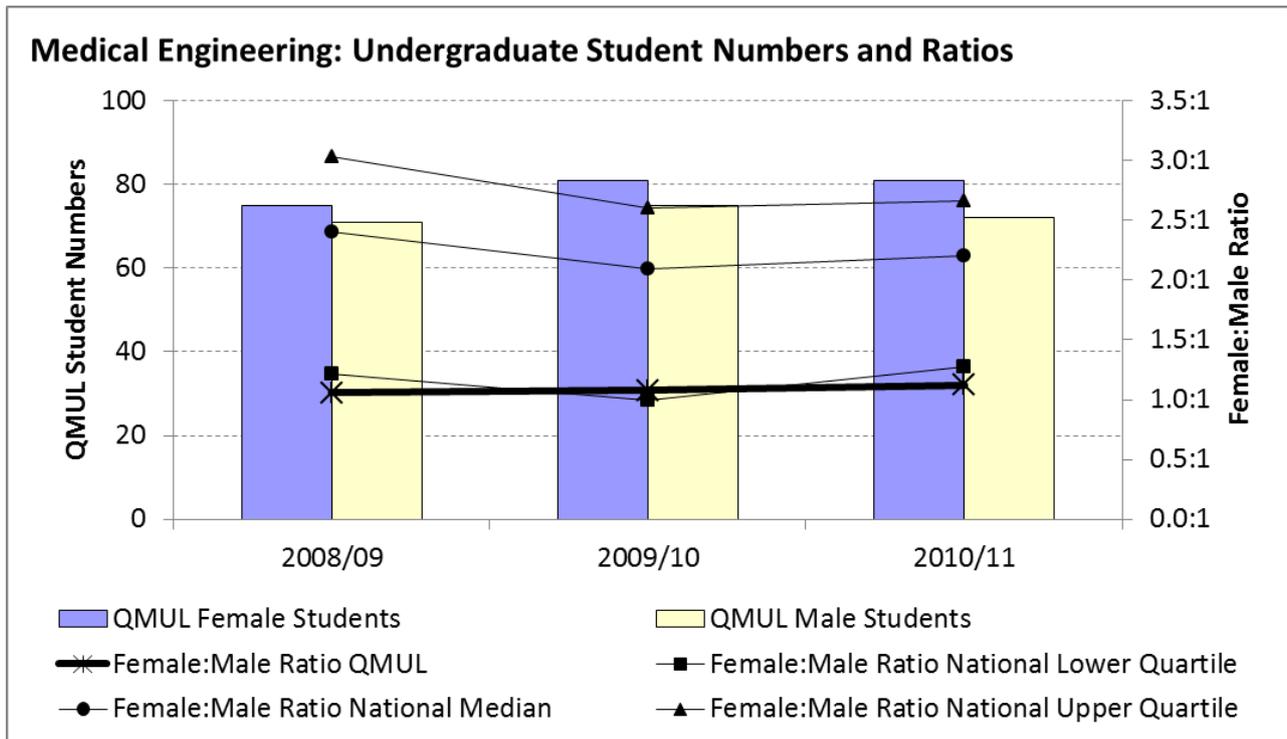
Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	64	430	0.148:1	0.063:1	0.106:1	0.154:1
2009/10	63	471	0.134:1	0.065:1	0.101:1	0.154:1
2010/11	76	464	0.163:1	0.067:1	0.104:1	0.152:1



With 14% female students on traditional engineering courses, the female to male ratio is significantly above the national average of 9.4%. There has been a small rise in female student numbers over the last three year. The data show that the outreach and recruitment strategies run by the school have not only resulted in the recruitment of female students to Medical Engineering courses, but also contributed to the recruitment of female student into more traditional engineering subjects such as Mechanical and Aerospace Engineering. This is a significant finding on which not only we, but also other Engineering departments may wish to build.

(b) Medical Engineering

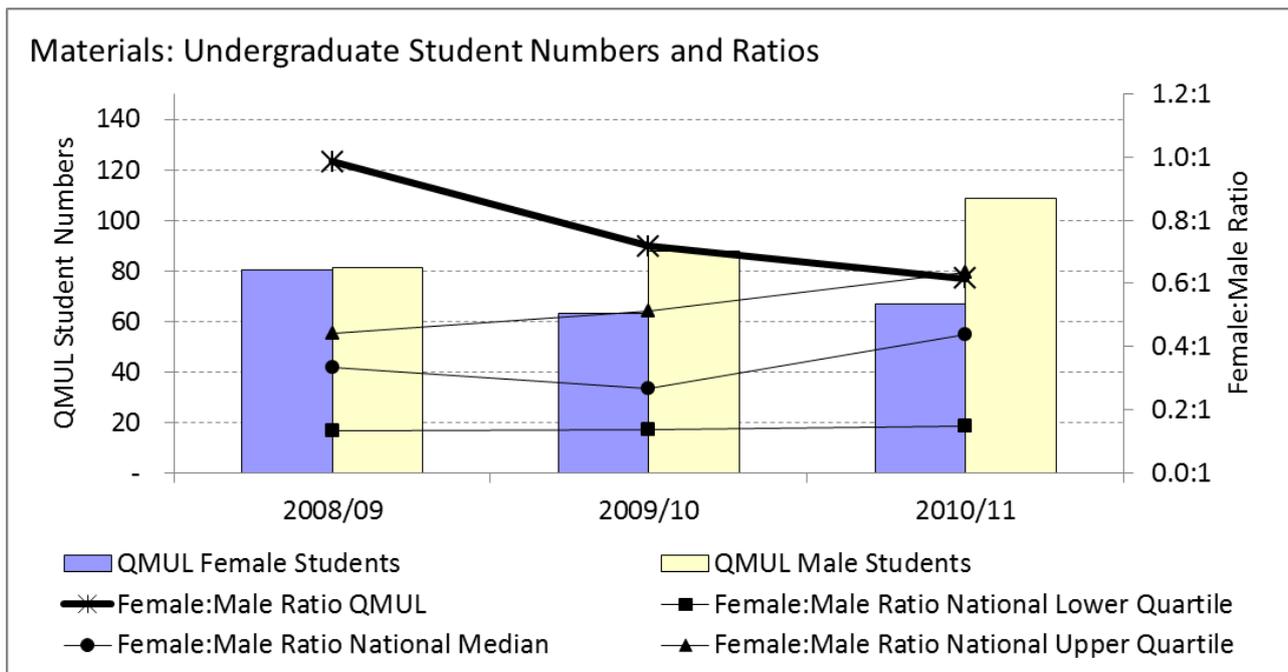
Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	75	71	1.06:1	1.21:1	2.40:1	3.03:1
2009/10	81	75	1.08:1	1.00:1	2.09:1	2.60:1
2010/11	81	72	1.13:1	1.27:1	2.21:1	2.67:1



The female to male ratio on our Medical Engineering courses has been consistently 1.1:1 over the last three years. This shows that these programmes are equally attractive to women and men. The national average for medical technology related courses is considerably higher with a ratio of 2.1:1. This range of programmes includes subjects that are not necessarily delivered within a School of Engineering, but may include those based in Biology or Science Schools and Departments. Following careful discussion, the school is not aiming to increase the female to male ratio above 1:1. We are aiming for a fair, inclusive environment where engineering and science programmes are seen as neither male nor female dominated. We have decided, therefore, to focus our gender outreach activities on achieving an increase in the number of women studying more traditional engineering and materials subjects. We can see that simply having a programme that is attractive to women in one part of the curriculum helps to attract women to other programmes within the School. This is, in part, because we treat them as a single cohort, ensuring that our female students get a strong sense of feeling part of the whole School, not simply part of their individual programme.

(c) Materials

Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	80	81	0.99:1	0.13:1	0.33:1	0.44:1
2009/10	63	88	0.72:1	0.14:1	0.27:1	0.51:1
2010/11	67	109	0.62:1	0.15:1	0.44:1	0.63:1

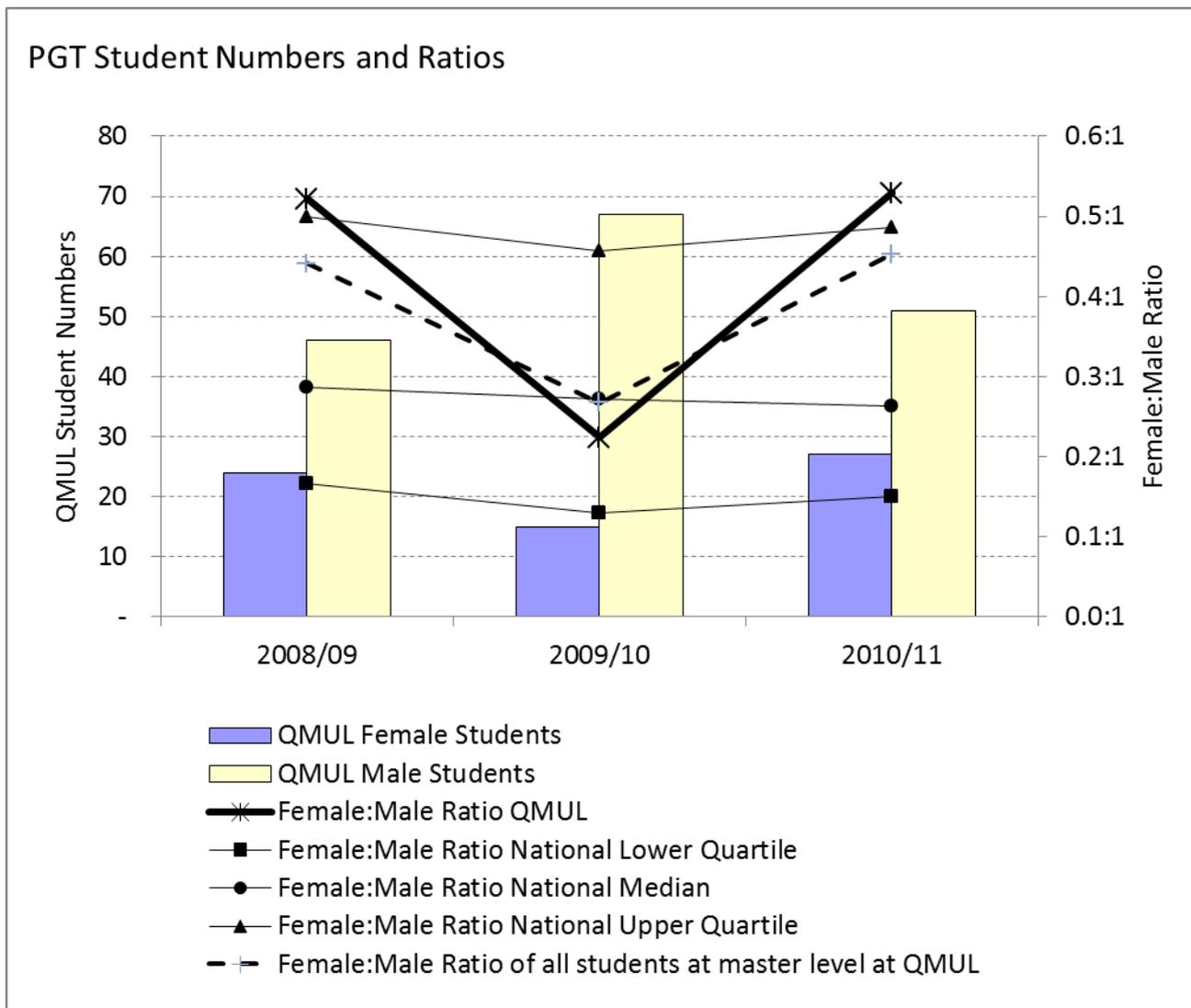


With 38% female students, the percentage of women in materials science at QM is considerably higher than the national average of 31%. As with medical engineering, this is partially due to our medical and dental materials programmes. Separate national data for pure and medical materials programmes are not available making a comparison with other universities difficult. Similar to the medical engineering programmes, medical and dental materials programmes attracted a student population with a consistent female to male ratio of 1.1:1 over the last three years. The female to male ratio in materials programmes dropped from 1:1 to 0.6:1 over the last three years. A closer analysis of the results shows that the number of students recruited onto traditional materials programmes increased, while the number of students on medical and dental materials programmes remained roughly constant. As the percentage of female students on traditional materials programmes is relatively small (11% in 2010/11), this accounts for the overall drop in the female to male ratio. This trend will be monitored and targeted by female specific outreach and recruitment activities (**actions 1.1 and 1.2**).

(iii) **Postgraduate male and female numbers completing taught courses (PGT)**

Postgraduate numbers were not split into different subject areas as the numbers are too small to show any statistically meaningful trends.

Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	24	46	0.52:1	0.17:1	0.29:1	0.50:1
2009/10	15	67	0.22:1	0.13:1	0.27:1	0.46:1
2010/11	27	51	0.53:1	0.15:1	0.26:1	0.49:1

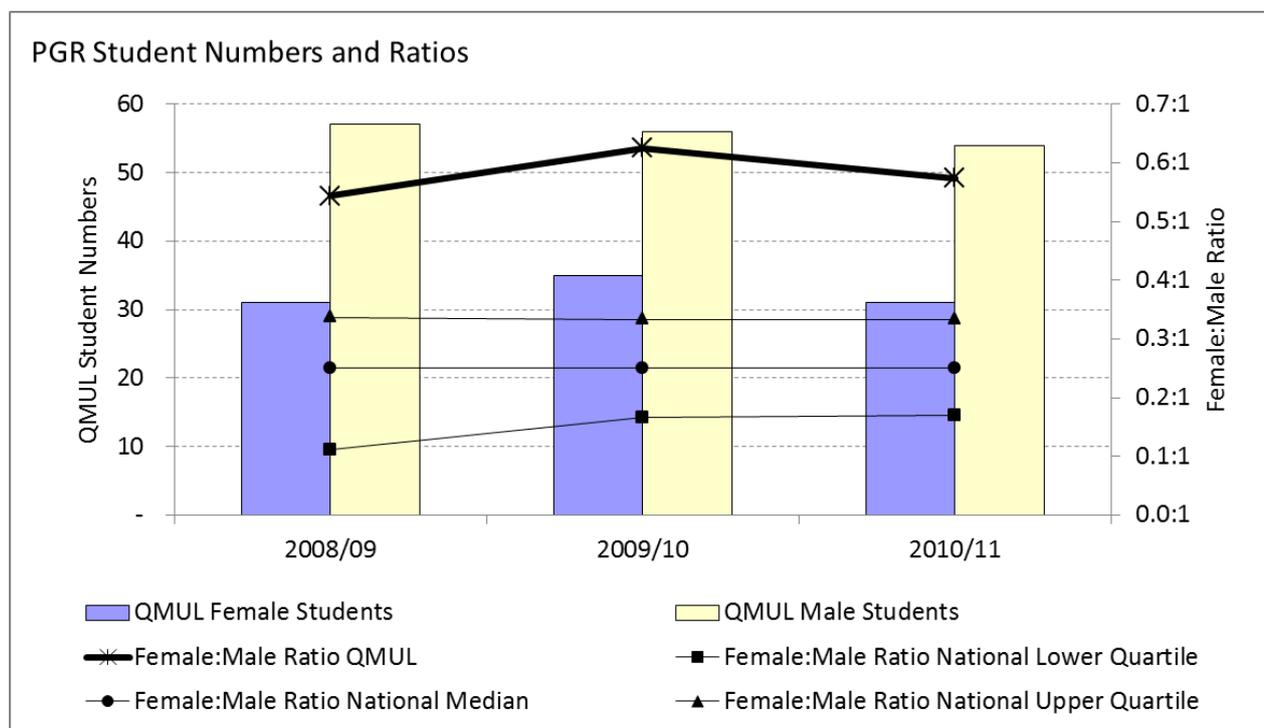


Female numbers have increased slightly over the three years from 24 (2008/09) to 27 (2010/11). In 2010/11, QM had a female to male ratio of 0.5:1 compared to the national average of 0.26:1. There was an unusual decrease in female ratio and increase in male numbers in 2009/10. This had the effect of reducing the female to male ratio to 1 female for every 5 males. While this drop is not positive it brought QM in line with the national average and was only a one-off instance that may not be statistically significant. In 2010/11 the numbers returned to similar levels of that in 2008/09. As the school is offering a large number of MEng courses, only very few of our graduates join our MSc programmes. When we consider all students at master level, including students in the 4th year of our undergraduate courses (see dotted line), the dip in the female to male ratio in 2009/10 becomes less pronounced. Nevertheless, we will monitor the numbers to catch any negative trends at an early stage and continue to make sure that we have strong female role models in our publications (**actions 1.2, 1.3 and 1.4**).

The female to male ratio among postgraduate students is higher than that of our undergraduate student population. The main reason for that is the different distribution of undergraduate and postgraduate students across the subject areas taught in the school. Only 33% of our undergraduate students study medical engineering or medical or dental materials, while 46% of our postgraduate students are on programmes with a medical component.

(iv) **Postgraduate male and female numbers on research degrees (PGR)**

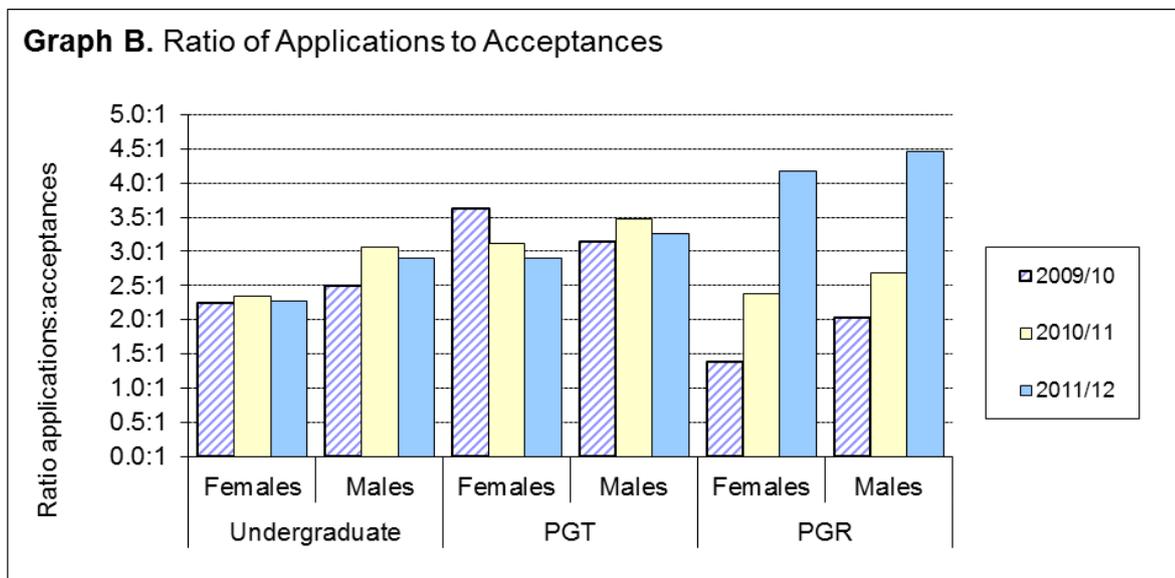
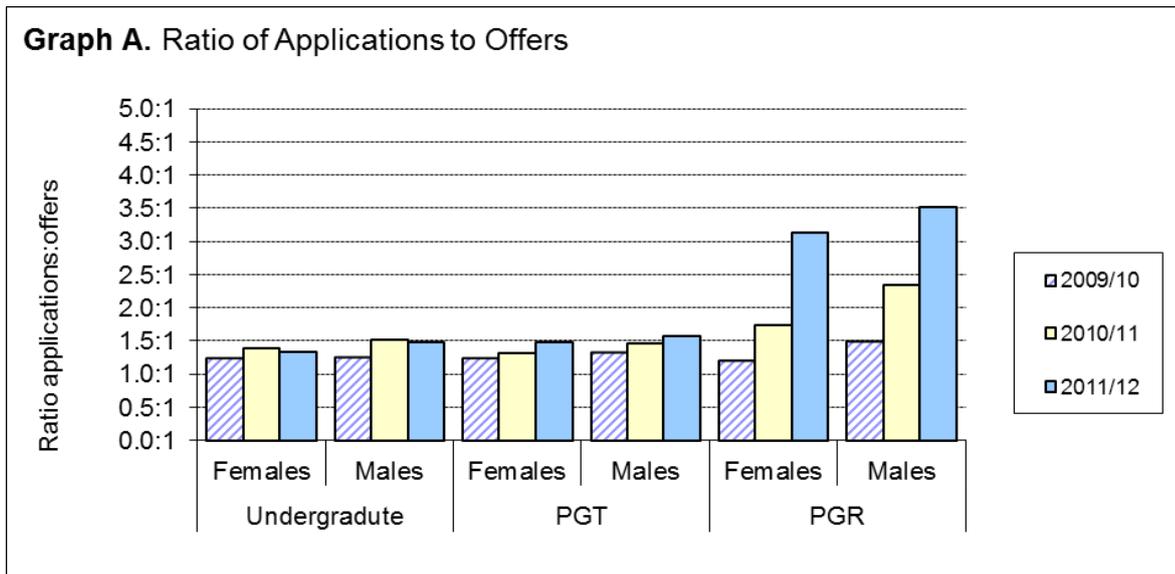
Year	QMUL		Female:Male Ratio			
	Female Students	Male Students	QMUL	National Lower Quartile	National Median	National Upper Quartile
2008/09	31	57	0.54:1	0.11:1	0.25:1	0.34:1
2009/10	35	56	0.63:1	0.17:1	0.25:1	0.33:1
2010/11	31	54	0.57:1	0.17:1	0.25:1	0.33:1



SEMS has had a consistently high percentage of female PGR students (36% in 2010/11). Our school offers a large number of projects with a medical or biological component, which reflects the research profile of the academic staff and attracts a large number of high quality female engineers and scientists to the school.

Every effort is made to retain excellent female graduates from our undergraduate degree programmes. A large number of our female graduates decide to stay for a PhD as they appreciate the support they received at undergraduate level as evidenced by our national student satisfaction ratings over the last few years (see support for female students). In addition, our high numbers of female PGR students and PDRAs encourages more women to stay for a postgraduate degree as there is a strong PGR community. The PGR community is also strengthened by the School's engagement in the Women in Science and Engineering (WISE) initiative (see support for female students).

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



For undergraduate and PGT, the numbers of applications per offer between males and females over the three years are similar. Women generally have slightly less applications per offer. The ratio of applications to acceptances has a slightly greater gap with more females accepting offers per application than males in each of the three years for undergraduate programmes. There is no clear trend when comparing applications to acceptances for taught postgraduate programmes.

For PGR students, the trend for applications to offers for both genders shows the greatest movement over the years due to an increase in applications but not offers. As with other levels of study females tend to have fewer applications per offer. The trend is consistent with applications per acceptance.

No allowance is made for gender in making offers, and the high ratio of female offers is due to the quality of the candidates that our programmes attract, which is also reflected in the increasingly strong academic performance of women in our undergraduate and postgraduate programmes.

(vi) Degree classification by gender

Degree Classifications		2008/09	2009/10	2010/11
First class honours	Female	11 (15%)	8 (17%)	13 (19%)
	Male	21 (15%)	32 (19%)	22 (13%)
	Total	32 (15%)	40 (19%)	35 (15%)
Upper second class honours	Female	25 (34%)	23 (50%)	31 (45%)
	Male	53 (37%)	43 (26%)	53 (32%)
	Total	78 (36%)	66 (31%)	84 (36%)
First class or upper second class honours	Female	36 (49%)	31 (67%)	44 (64%)
	Male	74 (51%)	75 (45%)	75 (45%)
	Total	110 (51%)	106 (50%)	119 (51%)
Lower second class honours	Female	30 (41%)	11 (24%)	18 (26%)
	Male	48 (33%)	53 (32%)	58 (35%)
	Total	78 (36%)	64 (30%)	76 (32%)
Third class honours/Pass	Female	7 (10%)	4 (9%)	7 (10%)
	Male	22 (15%)	40 (24%)	32 (19%)
	Total	29 (13%)	44 (21%)	39 (17%)

Degree classification shows a positive trend for females. From 2008/09 to 2010/11, the proportion of female students receiving a 1st class honours increased from 15% to 19%. In 2008/09 females and males were equally likely to get a first, while in 2010/11 females were more likely to get a first than males. The same trend is visible when looking at the numbers of students getting first or upper second class honours degrees. In 2010/11, 64% of female students but only 45% of male students received first or upper second class degrees.

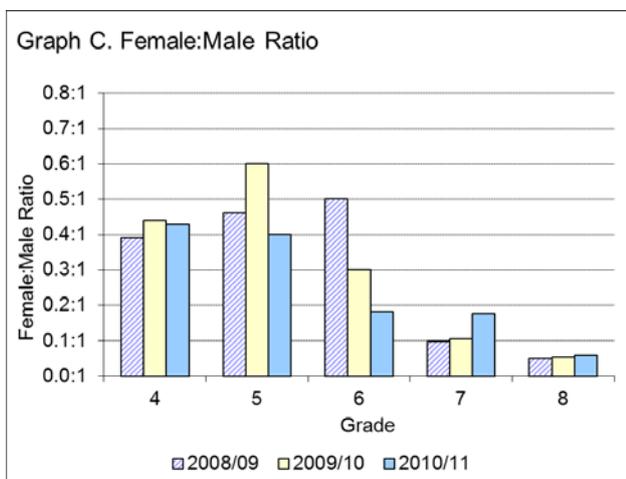
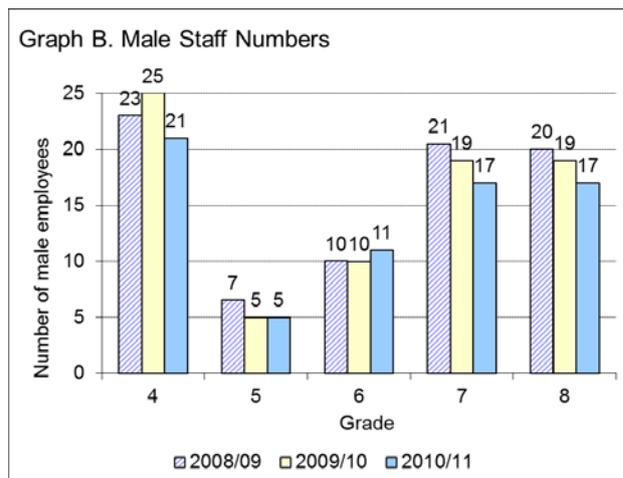
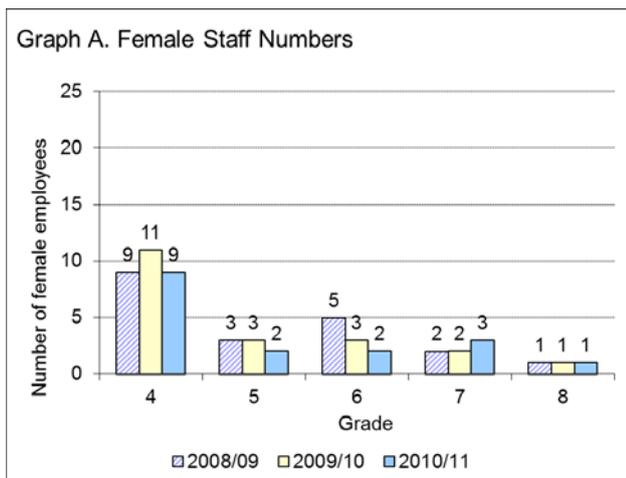
Staff data

Staff data will not be analysed separately for Engineering and Materials as benchmark data are only available for the combined subjects, and the demarcations between subject areas are blurred.

Notes about grades:

Grades	Job levels within grades
Grade 4	Research Assistants, Research Associates, Post Doctoral Research Assistants
Grade 5	Research Assistants, Post Doctoral Research Assistants, Academic Fellow, Lecturer
Grade 6	Research Fellow, Academic Fellow, Lecturer
Grade 7	Senior Lecturer, Reader
Grade 8	Professor

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



There was an overall female to male staff ratio of 1:4 in each of the three years under consideration. Benchmark data (see tables below) indicate that this corresponds to the national average. With regards to female to male staff ratio, QM is in 10th position out of 20 institutions that offer Materials and Engineering subjects. Female staff members are most strongly represented on grades 4 and 5 where there is 1 female for every 2 to 3 males. This is consistent with the analysis of postgraduate student numbers and indicates a balance of female engineers continuing on at post doc level. The drop in female numbers really only becomes apparent at grade 7 where there is approximately 1 female member of staff per 10 males for 2008/09 and 2009/10. This partly reflects the lower proportions of woman studying engineering subjects in the past. This ratio improved in 2010/11 to 1 in 5, albeit mainly due to a decrease in male staff numbers. The imbalance is most notable at grade 8 where QM has 1 female professor compared to around 20 male professors in each of the three years. This is relatively typical for UK institutions where out of 20 institutions, only 6 have 2 female professors, 6 universities have one female professor and 8 have none in Materials and Engineering. Nonetheless we have been sensitive to this and following some of the measures we have put in place to support the promotion process, the balance has shifted this year. The data for 2012-13 will show a marked improvement as two women have been promoted internally to Senior Lecturer and Reader respectively. With increasing numbers at grade 7, their promotion to professorial posts is being monitored carefully with roles being assigned that ensure that their internal and external profiles are developed and recognised and their leadership skills are supported. The issue of low numbers of senior female staff will also be addressed through participation in the recently introduced Queen Mary Women into Leadership programme and a college wide mentoring programme, which were both launched in November 2012.

Benchmark data (source HESA 2009-10):

Materials Science and Engineering Staff and Professors (Full Time Equivalent)

All staff						
	Institution	Female	Male	Female (%)	Male (%)	Total
1	0134 King's College London	2.0	5.5	27.0%	73.0%	7.5
2	0114 The University of Cambridge	22.7	64.9	25.9%	74.1%	87.7
3	0204 The University of Manchester	43.7	156.3	21.9%	78.1%	200.0
4	0156 The University of Oxford	17.5	66.9	20.8%	79.2%	84.4
5	0132 Imperial College of Science, Technology and Medicine	54.9	214.4	20.4%	79.6%	269.3
6	0124 The University of Leeds	24.4	96.3	20.2%	79.8%	120.7
7	0155 The University of Nottingham	27.0	109.7	19.7%	80.3%	136.6
8	0184 The Queen's University of Belfast	12.1	50.1	19.5%	80.5%	62.2
9	0160 The University of Southampton	44.9	207.0	17.8%	82.2%	251.9
10	0139 Queen Mary and Westfield College	13.5	65.7	17.0%	83.0%	79.1
11	0110 The University of Birmingham	16.4	82.0	16.7%	83.3%	98.5
12	0119 The University of Exeter	3.9	22.6	14.8%	85.2%	26.6
13	0159 The University of Sheffield	28.9	173.0	14.3%	85.7%	202.0
14	0167 The University of Edinburgh	3.8	23.1	14.2%	85.8%	26.9
15	0168 The University of Glasgow	5.0	37.5	11.8%	88.2%	42.5
16	0149 University College London	3.6	31.2	10.3%	89.7%	34.7
17	0179 Cardiff University	7.1	67.9	9.5%	90.5%	75.1
18	0126 The University of Liverpool	6.5	61.8	9.5%	90.5%	68.3
19	0154 The University of Newcastle-upon-Tyne	7.7	81.4	8.7%	91.3%	89.1
20	0112 The University of Bristol	5.5	85.2	6.0%	94.0%	90.6
	Total	351.2	1702.5	17.1%	82.9%	2054

Professors						
	Institution	Female	Male	Female (%)	Male (%)	Total
1	0168 The University of Glasgow	2.0	3.2	38.5%	61.5%	5.2
2	0114 The University of Cambridge	2.3	7.2	24.6%	75.4%	9.5
3	0110 The University of Birmingham	1.8	10.4	14.7%	85.3%	12.2
4	0124 The University of Leeds	2.0	14.2	12.3%	87.7%	16.2
5	0155 The University of Nottingham	2.0	16.5	10.8%	89.2%	18.5
6	0184 The Queen's University of Belfast	0.6	6.0	9.1%	90.9%	6.6
7	0139 Queen Mary and Westfield College	1.0	10.5	8.7%	91.3%	11.5
8	0179 Cardiff University	1.0	10.8	8.4%	91.6%	11.8
9	0160 The University of Southampton	2.0	37.8	5.0%	95.0%	39.8
10	0159 The University of Sheffield	1.0	19.5	4.9%	95.1%	20.5
11	0204 The University of Manchester	1.0	26.8	3.6%	96.4%	27.8
12	0132 Imperial College of Science, Technology and Medicine	1.0	42.6	2.3%	97.7%	43.6
=13	0134 King's College London	0.0	0.0	0.0%	0.0%	0.0
=13	0112 The University of Bristol	0.0	11.9	0.0%	100.0%	11.9
=13	0167 The University of Edinburgh	0.0	5.0	0.0%	100.0%	5.0
=13	0119 The University of Exeter	0.0	2.0	0.0%	100.0%	2.0
=13	0126 The University of Liverpool	0.0	12.9	0.0%	100.0%	12.9
=13	0154 The University of Newcastle-upon-Tyne	0.0	15.1	0.0%	100.0%	15.1
=13	0156 The University of Oxford	0.0	3.7	0.0%	100.0%	3.7
=13	0149 University College London	0.0	5.0	0.0%	100.0%	5.0
	Total	17.7	261.0	6.4%	93.6%	279

(viii) Turnover by grade and gender

Table A1: Staff Turnover						
2008/09						
	Female			Male		
Grade	Population	Leavers	Turnover %	Population	Leavers	%
4	9	4	44%	23	10	43%
5	3	-	0%	7	1	14%
6	5	3	60%	10	2	20%
7	2	-	0%	21	3	14%
8	1	-	0%	20	1	5%
Total	20	7	35%	80	17	21%
2009/10						
	Female			Male		
Grade	Population	Leavers	Turnover %	Population	Leavers	%
4	11	2	18%	25	6	24%
5	3	1	33%	5	2	40%
6	3	-	0%	10	2	20%
7	2	-	0%	19	-	0%
8	1	-	0%	19	1	5%
Total	20	3	15%	78	11	14%
2010/11						
	Female			Male		
Grade	Population	Leavers	Turnover %	Population	Leavers	%
4	9	4	44%	21	3	14%
5	2	2	100%	5	1	20%
6	2	-	0%	11	1	9%
7	3	-	0%	17	1	6%
8	1	-	0%	17	1	6%
Total	17	6	35%	71	7	10%
Grand Total	57	16	28%	229	35	15%

PDRAs (Grade 4) had a significantly higher turnover for both women and men due to fixed term research contracts. The turnover rates for the higher grades are quite erratic as there is a relatively low female population at the different grades, and there seems to be no discernible pattern. Overall a higher percentage of women (28%) than men (15%) left over the last three years. A closer analysis of the female leavers revealed predominantly positive career moves. Two women took on permanent academic posts at Imperial College and Manchester University, one obtained a research fellowship position in Beihang university in Beijing, one took a permanent position in the R&D department of a diagnostics company in Glasgow and another a joint position with Rolls-Royce in Derby. From 2012-13, the School will carry out exit interviews with staff, to obtain a more complete picture of staff destinations and enable an analysis of the reasons for leaving (**action 1.5**).

4. Supporting and advancing women's careers: 5144 words

Key career transition points

a) Data for the past three years

(i) Job application and success rates by gender and grade.

2008/09		Number of applications for jobs		Number of applications which were successful		Success Rate	
Level of position	Female	Male	Female	Male	Female	Male	
Grade 4	59	190	3	9	5%	5%	
Grade 5	3	3		1	0%	33%	
Grade 6	22	112		2	0%	2%	
Total	84	305	3	12	4%	4%	
2009/10		Number of applications for jobs		Number of applications which were successful		Success Rate	
Level of position	Female	Male	Female	Male	Female	Male	
Grade 4	54	96	2	5	4%	5%	
Total	54	96	2	5	4%	5%	
2010/11		Number of applications for jobs		Number of applications which were successful		Success Rate	
Level of position	Female	Male	Female	Male	Female	Male	
Grade 4	15	38	1	2	7%	5%	
Grade 5	25	106		3	0%	3%	
Grade 6	15	65		2	0%	3%	
Total	55	209	1	7	2%	3%	

Please note that the College is currently addressing the issue of the data quality for job applications and success rates by introducing an online recruitment system that will ensure full data capture by 2013. This means that the data currently available and shown above may not be fully representative. It is also too small to draw any statistical significance.

Overall success rates between females and males are similar although all appointments above a grade 4 have been male from 2008-11. Recent recruitment activities have sought to attract women to the School. We have recently appointed an additional female Reader and are in the process of interviewing more female candidates. Out of 5 candidates that were interviewed for professorships, 2 were women. In the latest round of interviews two women were offered lecturer and senior lecturer positions in Bioengineering from a shortlist which included 5 women out of 8 short-listed candidates. This suggests that the data will look different in 2013-14.

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

[data has been removed not to compromise individual information]

The table above shows very low overall application rates by both men and women for promotion.

It is a common problem that women do not tend to put themselves forward for promotion. This is a trend across the Faculty of Science and Engineering and nationally. The College has started to hold 'pathways to promotion' workshops and is pro-actively targeting and encouraging women to attend. For example, in May 2012, the Executive Dean for Science and Engineering held a session that explained the promotions process and criteria, discussed how to prepare for promotion through annual appraisals and encouraged questions. All female staff in the faculty were specifically invited to attend and there was a high level of participation from SEMs. Similar sessions will run twice a year from 2012-13 onwards. The College has also conducted an equal pay review and found there are no significant differences between genders or ethnicities in average basic pay for staff in grades 1-7.

In addition, in 2011-12 the College as a whole, has reviewed its promotions process to make it more transparent, to include further elements for promotion such as outreach activities and to create better career pathway for staff who are on teaching-only contracts. This has already been partially implemented in the 2012 academic promotion round that was launched in February 2012, where outreach activities and administrative responsibilities are clearly acknowledged and rewarded.

- 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

To ensure a high level of female applicants for posts, SEMs actively promotes women on its website and in its brochures. The Athena SWAN member logo is displayed on the school's main website, on the SEMs vacancies website and on job adverts. The Head of School incorporates the logo in all e-mails. All staff who sit on interview panel have to undertake a recruitment and interview skills training that covers extensively equality and diversity (legislation and best practice) and have to attend a refresher course every 3 years that also covers equality legislation and discrimination cases. The School ensures that there is relevant female representation on all interview panels. We are working with the Equality and Diversity team in HR to ensure that all of our recruitment materials are gender neutral and encourage a diverse range of applicants (**action 1.6**).

(ii) Support for staff at key career transition points

Key areas of attrition that have been identified by the college are the transition of female postdoctoral researchers into permanent posts and the promotion of female staff beyond the senior lecturer/reader level.

The college's learning institute provides a dedicated programme to postdoctoral researchers that allow them to take part in personal effectiveness training, media training and public engagement exercises that equip them for future careers. The College has a Postdoctoral Researchers' (PDRAs) support officer and a dedicated Researchers' careers officer who are responsible for working with PDRAs to ensure that they are able to move onto fulfilling careers either inside academia or in industry. For PDRAs who want to progress into academia, annual coaching sessions about how to apply for early career fellowships are provided. QM was recently awarded the European Union HR Badge of Excellence in Research in recognition of its implementation of the Concordat to support the Career Development of Researchers.

The School has a relatively good track record for allowing PDRAs to progress into permanent academic posts. Of the current academic staff, four were previously employed as PDRAs (two

women and two men). However, the school recognises that more can be done, and from January 2013 we will implement a school wide mentoring scheme for PDRAs (**action 2.1**). This will build on existing dedicated networking opportunities which are provided at two annual events organised by the school, the Graduate Road Show in autumn and the Industrial Liaison Forum in spring (see culture for details). Further networking opportunities exist within the research groupings, each of which organises its own seminar programme.

In terms of staff development, the school provides a mentoring programme for probationary staff. The School nominates both men and women to attend leadership training sessions run by the College's Learning Institute. Dedicated support for women is provided by the College's 'Women into Leadership programme' launched in November 2012, which will support women who hold Professorial positions and ensure that they, in turn, help women who are at earlier stages in their careers develop their potential for leadership. The Head of School will promote these programmes to relevant female staff to ensure good participation.

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

The Queen Mary Performance Appraisal Scheme (QMPAS) has been implemented throughout the College and involves all staff. All appraisers are trained and there are good practice guidelines available for both the appraiser and appraisee. In 2010, the College published a new Strategic Plan which moved beyond the traditional divisions of teaching and research to group the primary roles of academic staff into the creation and dissemination of knowledge, through activities in teaching, research and knowledge transfer. Staff are also required to contribute to the effective management and coordination of these activities and support the enabling strategies of the College. This ensures that there are three categories for assessing the contribution of academic staff in SEMS: knowledge creation e.g. research publications, grants awarded; knowledge dissemination e.g. teaching and scholarship, public/business engagement; Enabling activities are those activities (at group, School, Faculty or College level), which facilitate and support knowledge creation and dissemination. There are routes to promotion with clear criteria through both research-focused and teaching and scholarship focused roles.

The college is currently developing a Contribution and Development Review (CADRe) Scheme to replace QMPAS. The Head of School agreed to pilot CADRe in our School as it is intended to provide greater clarity for individuals on how they are progressing in their career, how they may progress in the future and what support is necessary from the School or Faculty to achieve this (**action 2.3**). It is also intended to allow recognition of contributions across all aspects of an individual's job. Thus the CADRe is designed to concentrate on four aspects of working in S&E that help to integrate the interests of the individual member of staff and the School or Faculty:

- Focus: Creating future objectives that match the reviewee's ambitions and, are appropriately aligned to the strategy of the School
- Assessment: A shared review of what the reviewee has achieved to date
- Future: Plans for the reviewee's future career
- Development: What development will support the reviewee in their current and future roles?

(ii) Induction and training

Both the College and the School provide formal inductions for new staff at all levels. All probationary staff members are mentored by a senior academic in the department. Networking is encouraged from the onset through the research group meeting and the two industrial networking events organised by the school (see culture). To cope with a large number of new academic staff, a new induction programme for staff has been developed by the School. It consists of a series of informal meetings that inform new staff members about the various processes at school and

university levels. Themes include teaching, research support, careers and the vision for the School. As part of our action plan, we have now included an Athena SWAN session that raises awareness of the school's commitment to gender equality and the actions we are undertaking (**action 2.2**). This session will also be used to ensure a broad awareness of the flexible and part time working policies of the School.

The College inductions (which take place three times a year) include a session on equality and diversity which includes information on gender equality. During induction, staff are informed about flexible working, child-care vouchers and the centrally organised staff development programmes that they can attend at the Learning Institute. Human Resources also have a stall at the induction, to answer any questions and also give information about their services.

(iii) **Support for female students**

The school is engaged in the faculty based WISE (Women in Science and Engineering) initiative. WISE@QMUL (<http://wiseqmul.wordpress.com>) started up in 2008 as an informal group for discussion & networking for QMUL students interested in the role of female participation in science and engineering. WISE@QMUL aims to provide a networking platform for female undergraduates, postgraduates and academic staff in Science and Engineering seeking encouragement and advice on managing their careers within and beyond academia and tackling life important questions such as work-home balance. WISE brings together women at early stages in their career for discussion groups, seminars with prominent and interesting women (and men) in the field, workshops and social events. Recent activities include a symposium on 'Women in Entrepreneurship' and a seminar on 'The benefits of becoming a member of a professional organisation'.

WES (The Women's Engineering Society) organised a student conference on 16-17 November 2012 in association with Aston University following on from three previous successful conferences. The programme is a balance of personal development sessions and technology hot topics, with plenty of time for networking and connecting with employers. SEMS sent 4 students from our second and third year cohorts for the first time this year. We are planning to send up to 10 female students every year (**action 2.4**).

There are Materials and Engineering Societies in SEMS, which are both currently run by students and mainly organise social events. It has recently been decided at school level to provide academic support for these societies, which will help the student organisers to raise awareness and interest in these societies among both students and staff and to organise seminars and events that can aid career development (**action 2.5**). In the longer term, we are aiming to form a single Engineering and Materials society, which will provide a forum for social and professional interaction for students and academics. The society will have a clear statement in their constitution that they will only organise events that are attractive to all students regardless of their gender or ethnicity.

All undergraduate and postgraduate taught students are assigned a personal tutor and have the right to request a change of tutor, for example if they wish to request a female tutor – a request that is always granted. Tutors provide mostly pastoral support and mentoring. A more structured tutorial system is being trialled this academic year to ease the transition from school to university. For example, a report writing exercise was carried out over the first 4 weeks of year 1 under the guidance of personal tutors to introduce students to the requirements of problem based learning at the university (**action 2.6**).

The school also employs 3-4 teaching assistants who run subject specific tutorial sessions, are always available to answer questions and have very close interactions with our students. In the past 3 years at least one of the teaching assistants has been a woman. The school has introduced a mentoring scheme, where students from the second year provide support from students in the first year. The strong support provided to our students by the school is reflected by the results of the National Student Survey where Materials ranked as the number one department nationwide for overall satisfaction levels for the second year running; Aerospace Engineering's was in sixth position out of 19 departments.

Organisation and culture

a) Data for the past three years

(i) Male and female representation on committees

School committee membership

Committee	2009/10	2010/2011	2011-2012
		Female	Female
School Executive Team (4)*	N/A	1 (25%)	1 (25%)
School Management Team (9&10)	2(22%)	2 (20%)	2 (20%)
Research Committee (6)	0(0%)	0 (0%)	0 (0%)
Health and Safety Committee (13)	3(39%)	3 (39%)	3 (39%)
Education and Learning Committee (8)	2(25%)	2 (25%)	2 (25%)
U/G Staff/Student Liaison Committee (17)	5(26%)	5 (26%)	5 (26%)
P/G Staff/Student Liaison Committee (11)	4(44%)	4 (44%)	4 (44%)
Total	16(25%)	17 (25%)	17 (25%)

*School Executive Team: No such group for 2009/2010

Women are well represented on most decision making committees of the school, commonly corresponding to or exceeding the proportion of female academic staff with an average representation of 25% women. The notable exception has been the Research Committee where there has been no female representation over the last three years. This was flagged up an important deficit by the Athena SWAN SAT and discussed at length by the School. Committee membership is determined by an academic's specific administrative duties, for example the heads of research groups are required to join the research committee. To improve fairness in the selection of committee members and involve academics of all grades in the decision making processes, the Head of School has introduced a new policy that allows the heads of committees to co-opt two additional members onto the committee (with the exception of the School Executive Team) to allow appropriate representation of different career stages and gender (**action 3.1**). For example the imbalance in the research committee of both lower grades and gender has now been addressed by asking a female senior lecturer to join the committee from 2013.

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

	Fixed Term Contracts			Permanent Contracts		
	Female	Male	Female:male Ratio	Female	Male	Female:male Ratio
2008/09	13	37	0.3:1	7	43	0.2:1
2009/10	14	35	0.4:1	6	43	0.1:1
2010/11	11	33	0.3:1	6	38	0.2:1

The female:male ratio is higher for fixed term contracts than permanent ones, meaning more females are on fixed term contracts than permanent contracts whereas more males are on permanent contracts than fixed term. Female staff are more strongly represented on the lower grades 4 and 5 which tend to be fixed term research contracts funded by research councils, charities or industry. The mentoring scheme that will be introduced for PDRAs at school level will aid postdocs in their professional development and ease their transition into permanent posts in academia and industry (**see action 2.1**). Over the three years, the number of fixed term contracts for both women and men has slightly decreased, while only the number male permanent contracts decreased. These effects are, however, not statistically significant.

- 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**

The structure of the school has been designed to keep the number of decision making committees small, thereby allowing female representation on most committees without overburdening the relatively small number of female staff. As the data above suggests, most committees have a good gender balance, Prof Julia Shelton, also a member of the SAT, is the Dean for Taught Programmes in the Faculty of Science and Engineering and is a member of the Faculty Executives.

(ii) **Workload model**

The faculty of Sciences and Engineering is currently introducing a new workload model which will ensure that the wide range of activities and administrative responsibilities that are currently added to the typical day are better taken into account and acknowledged. The workload allocation system is designed to achieve:

- An equitable and transparent spread of workloads across all academic staff, through consistent practice.
- Effective and sustainable management of staff time.
- Better alignment of staff resources with the strategic business plans of the Faculty.

The system involves the broad quantification and division of activities carried out within Schools, requiring ongoing attention to:

- Equity. Through an assessment of the broad balance of all work elements, it links the overall load of each individual to the Faculty median.
- Transparency. To be achieved in both the method used to distribute work and in the outcomes of the process.
- Consistency. To be achieved through Schools balancing loads and using a common unit of measure and reconciling their information with the Faculty database. Based on School allocations, feedback information will be provided from Faculty level on the normal ranges for given roles to inform local School practice.

The new workload model is currently being piloted in our school, and its efficiency will be assessed over the next academic year (**action 3.2**).

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

Staff meetings are always held during working hours (10-5) to allow staff members with family commitments to attend. Most of the staff meetings are organised on Wednesday afternoons, when there is no teaching and all our part time (>50%) members of staff are able to attend. It has been recognised that staff members with caring responsibilities may have to leave early. As of this academic year, the School has therefore started to record the staff meetings. From 2013, staff meeting will be organised within the core working hours of 10-4 (**action 3.3**).

Social gatherings in the summer and before Christmas are always held during core hours not only to accommodate staff with caring responsibilities, but also to encourage administrative and technical staff to join in and promote a good working relationship between the different staff groups in the School.

(ii) **Culture**

As the composition of SAT indicates, SEMS has a long history of supporting flexible working and family-friendly policies as well as celebrating the teaching and research success of its students and staff. The School has a friendly atmosphere and offers staff a space with free tea and coffee where staff members can socialise with one another or meet and greet visitors. We have one teaching away day that is generally held on or near the university campus to ensure that staff can attend. The school has five discipline teaching groups and three research groups, which frequently meet over lunch. The research groups also organise the seminar programme. From 2009 to 2011 the proportion of female speakers was very low, although the numbers are not statistically significant due to the small overall numbers of speakers. Since the formation of the SAT, and our regular analysis of the gender balance in seminar speakers, heads of research groups have been encouraged to make an effort in order to increase the number of distinguished female seminar speakers who are invited (**action 3.4**). The total number of seminar speakers as well as the proportion of female speakers is now on the rise although more needs to be done to provide an adequate number of role models for our female PhD students and staff.

Acad Year	Number of Female Speakers	Number of Male Speakers	Proportion of Female Speakers %
2008/09	3	10	23.08%
2009/10	1	8	11.11%
2010/11	2	16	11.11%
2011/12	6	31	16.22%

There are two big annual social events in the school that celebrate the achievements of female and male undergraduate students and PhD students. Our annual Graduate Research Show in autumn coincides with an Industrial Liaison open day and provides students and PDRAs with the opportunity to showcase their research posters to the School and the industrial visitors attending. This is a valuable opportunity for our graduate students and postdocs to get feedback on their work, network with industrial visitors, other students and academics. Many of the companies attending this event sponsor prizes for our undergraduate and taught postgraduate students, which are awarded at this event. The School is currently planning to sponsor a new prize, which will be named after a famous female lecturer or graduate from the School (**action 3.5**). Suitable candidates will be discussed over the next few months and the prize will be awarded at the Graduate Research Show in 2013 for the first time.

The second event is an Industrial Liaison Forum (ILF) in spring where undergraduates from the School display and discuss their projects in detail with the industrial visitors and academics. Academics and postdocs get a chance to discuss with companies possible collaborations, work placements and project titles that individual companies might be interested in. One of the aims of this event is to increase the number of work placements that are available to our students. The event also includes a networking lunch for academics and industrial visitors and gives students a chance to talk to the visitors about industrial placements. Every year, a large number of alumni from our courses are invited to attend the ILF in spring. Traditionally, this also includes a significant number of female alumni. This provides our students with a chance to talk to female and male role models and get positive feedback for their own career choices.

The school is holding two social gatherings per year, a summer party and a Christmas party, which are open to PhD students and all academic, clerical and technical staff. To date, these events have been limited to PhD students and staff. However, there are plans to turn the summer party into a family friendly gathering (**action 3.6**).

(iii) Outreach activities

The School has developed a number of 'outreach' and widening access activities, which seek to encourage a flow of well-qualified candidates into SEMS and raise the general profile of engineering with young people. This work has included developing summer schools, teaching on AS modules in schools and preparing a CD, 'What is Engineering?' aimed at 16 to 18 year olds.



Students doing experiments at a taster course

SEMS does a minimum of 70 outreach events in schools per year. This is a high number of activities meaning that we speak to in the region of 4,000 students a year, giving us a large audience to promote our subject area to. In general when running school visits, we ask schools to ensure that they send a certain proportion of female students if possible. We also focus a significant number of outreach activities on the Bio – areas of our courses which traditionally attract more female students, but use these as an opportunity to highlight the other subject areas.

Since 2004 we have been running a one-day Taster course specifically aimed at female students interested in Engineering to open up the possibility of engineering to those who may believe it to be an exclusively male profession, or who would not wish to attend a predominantly male activity. This event has run successfully, with a very engaged and enthusiastic group of girls attending each year.

It started with 30 students, but has grown to be

for 60+. We have found that this provides them with an environment where they feel comfortable asking questions. The feedback consistently shows that they enjoy being able to work in female only groups when making these important decisions about their future.

In 2012, we ran our first female only three-day Headstart course for 30 year 11 students. The Engineering Development Trust (EDT, <http://www.etrust.org.uk/>) approached us with the idea as they recognise the importance of encouraging young female students to choose STEM subjects for their A-level choices and felt that our Outreach experience put us in a strong position to run the course. It was successful and we plan to run similar courses in the future (**action 1.1.**).

SEMS ensures that female academic staff and students are present at outreach and recruitment events. In fact our Student Ambassadors team attracts a high proportion of female students so the representation of female students at these events is consistently high. The School similarly prioritises female student representation in recruitment literature and on the School website. We have created a 'Student voices' page on the website (<http://www.sems.qmul.ac.uk/ugadmissions/studentvoices/>), which provides testimonials from current students, to showcase female positive role models (from both students and staff) for potential applicants.

SEMS is fully committed to Public Engagement – having recently created the new post of Director of Public Engagement. The Director of Public Engagement will work closely with our Communications office and Queen Mary's newly established Centre for Public Engagement, on wider interdisciplinary Science and Technology outreach activities and dedicated SEMS initiatives. The Outreach team is committed to bring SEMS subjects to audiences that may not have been traditionally interested in the subjects; for Engineering and Materials this of course includes female students. As part of our action plan, we will be incorporating recruitment and outreach activities

that are specifically targeting female students into the School action plan for outreach and admission at UG and PG level (**action 1.1**).

For our outreach activities aimed at school students we plan to refine our practical activities this academic year; create handout templates with learning objectives and ensuring that those learning objectives and learning methods are accessible and appealing to both genders. The new activities will be run in Easter and Summer 2014 (**action 1.1**)

(<http://www.sems.qmul.ac.uk/ugadmissions/events/tastercourses/>).

Our objective for the next two years is to raise the profile of SEMS research and teaching subject areas, particularly amongst those groups currently under-represented in our staff and student body (**action 1.4**). We plan to achieve this by creating a media campaign with 1 news story per month in publications other than those where our research currently appears, broadening our appeal to different groups. We will ensure that images and voices of female staff and students are well-represented in the articles.

The School encourages both male and female staff to take part in these activities and their participation is now taken into account in the promotions process and will be included in the new workload model developed in the Faculty of Science and Engineering.

Flexibility and managing career breaks

a) Data for the past three years

(i) Maternity return rate

The maternity return rate for researchers and academic staff has been 100% for many years, although this only affected a relatively small number of women. In the last three years, one grade 6 academic staff member took maternity leave in 2009/10 and returned. She has recently been promoted to Senior Lecturer.

(ii) Paternity, adoption and parental leave uptake

Over the last three years, 5 members of staff have taken paternity leave. There is not statistically relevant trend over that period. No staff members took adoption leave, and there is no official mechanism for monitoring parental leave.

Numbers of staff members taking paternity leave

	2008/09	2009/10	2010/11
Grade 4	-	-	-
Grade 5	-	-	2
Grade 6	-	-	1
Grade 7	1	1	-
Grade 8	-	-	-
Total	1	1	3

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

Flexible working can be defined as staff working full-time non-standard hours; working from home; or staff working part time. Based on current data, no staff in SEMS work full-time non-standard hours. The following staff members are working part time:

	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Total
Female	1		1	2		4
Male	1	3	1	2	5	12

The School introduced a part time working guarantee in 2012. Staff members who decide to reduce their FTE for flexible working needs will be guaranteed that they can return to their previous maximum load. (This excludes people who reduce their load to take on jobs in different institutions.) The scheme was introduced at an academic staff meeting (**action 4.1**).

- 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**

There are 16 members of staff, including research assistants and academics, who are working part time. This includes 3 academics, 2 females and 1 male, who are working part time to support their families. Other academics are working part time because they have commitments in a second work place, sometimes at a different university, sometimes in a company.

Part time work has not excluded academics from promotion. Both female and the one male part time academic with child caring responsibilities have been promoted to senior lecturer, reader and professor, respectively.

The School provides staff members with a remote desktop that allows them to work efficiently from home. Academic staff members are also given the chance to carry out their marking at home and submit marks electronically when they are not able to be at the College.

Queen Mary offers generous flexible working arrangements that are open to all staff. Flexible work arrangements can be made formally by applying to Human Resources or informally within the school. Only one female academic on a part time contract has a formal flexible work arrangement that allows her to work from home two half days a week. However, many academics with caring responsibilities for children or elderly relatives have informal flexible work arrangements within the school that allow them to arrive late or leave early and make up time by working from home. Some examples are given in the pen portraits of the SAT and the case studies.

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

The school recognises that staff members returning from maternity leave or long-term illness frequently lose momentum in their research activities. In order to counteract this, the school has implemented a new policy that will give returning staff members a significantly reduced administration and teaching load during the first full semester of their return to allow them to get their research back on track (**action 4.2**). The school realises that research cover during maternity leave is problematic and that there is no single solution that will suit everybody. The needs of each staff member concerned will be discussed on an individual basis. Cover for PhD students will be provided by their second supervisors who are required to give support to PhD students without changing the strategic direction for their research projects. The school will bring in additional staff to cover teaching or administration during the extended absence and for a sufficient period after. Although the additional staff may not cover the specific teaching of the absentee, as a re-shuffle of duties may be more advantageous, this will guarantee that none of the existing staff members experiences an increase in their load during this period. In cases where groups concerned have a senior PDRA, it may be advantageous to extend their contract to help with the running of the research group and take on some additional duties such as lecturing.

Women are encouraged to keep in touch with the School while on leave via remote access (see remote desktop above) and occasional visits. Changes in caring responsibility has often led to informal agreements for flexible hours while others (both male and female) have chosen to change from full time to part time contracts (typically between 50 and 80%). In the cases concerned, the school management has been very supportive when changes in percentage FTE or flexible working were requested. The recently implemented part time working guarantee makes the decision to temporarily change the FTE much easier.

A college wide scheme will be rolled out in December 2012 that allows academic staff with caring responsibilities to receive up to £150 to contribute to the additional care costs associated with attending conferences that involve being away from home.

5. Any other comments: maximum 500 words

None

6. Action plan

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
1	Recruitment and outreach activities						
1.1	Incorporate recruitment and outreach activities that are specifically targeting female students into the School action plan for outreach and admissions at UG and PG level	Continued interest of female students in the taster courses targeting women Move towards a female:male ratio of 1:1 in traditional engineering and materials subjects	Taster course "Women in Engineering" has been running successfully since 2004 Female only Headstart course ran in 2012	The practicals of the taster courses are currently updated and modernised The Headstart course will continue to run on an annual basis	Recruitment team (Steve Dunn)	Academic year 2013/14	2004
1.2	Monitor UG and PG student data by gender Annual report to - Executive Team - Staff meeting	Provide feedback to recruitment process on a regular basis. When positive trend is observed analyse reasons to build on it. If negative trend is seen form an action group to remedy	Data collected for the past three years with the help of the planning office	Data will be provided by Planning to the school and reviewed every year	Recruitment team (Elena di Mascio)	2012 onwards	February 2013
1.3	Develop webpage advertising women's achievements and non-standard career paths	Good gender balance in student and staff applications	News items already show achievements of women in the school	Webpage development	Director of Outreach (Martin Knight)	October 2013	May 2013

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
1.4	Raise the profile of the School's research and teaching subject areas	Broaden the School's appeal to different groups, particularly those currently under-represented in our staff and student body including women	News items appear on the School's webpage on a regular basis. 'Student voices' page on the website A minimum of 70 outreach events per year such as school visits and taster courses School publications sent to schools and handout at open days, taster course etc	Media campaign with one news story per month	Director of Outreach (Martin Knight)	July 2014	2004
1.5	Monitor staff destinations Annual report to - Executive Team - Staff meeting	Provide complete information about reasons for leaving to catch any gender biased trends and feed them back to the Executive Team for analysis and action if required	Destinations of leavers over the last three years were recorded with the help of the School's personnel manager	Carry out exit interviews	School Manager (Jayne Hawkins)	An annual report will be given to the SAT in October	November 2012
1.6	Encourage women to apply for fixed term and permanent posts	Improve the gender balance in applications	Appropriate women were invited to apply for academic posts. Athena SWAN logo displayed on School webpage and the School's vacancy webpage	Display Athena SWAN logo on adverts, Revise advertisement text used for advertising research and academic posts	HoS, School manager	March 2013	October 2012

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
2	Career Development						
2.1	Support the career development of PDRAs	Help PDRAs with their transition to permanent posts in academia and industry	2 annual networking events organised by the school; Events organised by the Learning Institute and the college's researchers' career officer have been advertised to PDRAs	Introduction of a school wide mentoring scheme for PDRAs	Executive team	From April 2014	January 2013
2.2	Improve staff induction	Raise awareness of Athena SWAN action plan and flexible and part time working policies of the school	Development of a new induction programme for staff in 2011/12	Develop an Athena SWAN session as part of the induction process	Chair of the self-assessment team	March 2013	July 2012
2.3	Support academics to develop their profiles for promotion	Encouragement of staff to apply for promotion at the right time of their career development	Piloting of the new appraisal system CADRe in the School	Assess the success of CADRe and suggest improvements of scheme to College	HoS	Academic Year 2013/14	May 2012
2.4	Raise awareness of Women's Engineering Society (WES) among female students	Raised awareness of issues affecting the career development of females in a male dominated subject area.	Four students were sent to the WES student conference in 2012	Sponsor up to ten students to attend the WES student conference every year	Director of taught programmes	November 2013	November 2012

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
2.5	Providing support to Engineering and Materials student society at the School	Raised interest in student society. New forum for social and professional interaction for students and academics	Communication with student societies has been established. Events (seminars, workshops) have been planned for 2012/13	Continue providing support to student societies in the organisation of useful events and establish a constitution	Russell Binions	November 2015	Spring 2012
2.6	Improved tutorial support	Improved study skills for all students leading to better academic performance in the first year cohort and reduced drop-out rates	A structured tutorial system is currently implemented to ease the transition from school to university	Continue to implement new tutorial system.	Deputy Director of Taught Programmes (Hazel Screen)	April 2013	Sept. 2012

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
3	Organisation and Culture						
3.1	Improve representation of different genders and grades on different committees	Good balance of genders and grades on all decision making committees to improve fairness of decision making processes	The balance of gender and grades on the Research committee has been improved by co-opting a female senior lecturer onto the committee	Review committee membership on an annual basis and co-opt up to two additional members onto committees when an improvement in the balance of genders and grades is required	HoS	Review every year in May	Sept. 2012
3.2	Improve the distribution of workload across the School	A fair distribution of the workload among all academic staff including teaching, administration, outreach and college activities	A new workload model is currently being piloted in the school	Assess efficiency of workload model and suggest improvements to the college	HoS	Academic Year 2013/14	May 2012
3.3	Improve involvement of staff who are working flexibly in the School	Participation of all staff in academic staff meetings and their involvement in the decision making processes of the school	Staff meetings are held during working hours (10-5) and are now recorded	Continue to record staff meetings Improve timing of staff meeting by organising them in core working hours (10-4)	School Manager (Jayne Hawkins)	May 2013	November 2012

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
3.4	Increase the number of female speakers	Improved gender balance among speakers to provide a larger number of female role models	Gender balance of speakers over the last three years has been recorded Heads or research groups have been asked to address the gender balance of the speaker invited by their groups	Record gender balance of speakers twice a year. Alert heads of research groups if the female to male ratio falls below an acceptable level	Research Manager (Jonathon Hills)	ongoing	August 2012
3.5	Develop female named prize	Encouragement for female students and promotion of positive role models	A substantial number of industry funded prizes is awarded annually to female and male undergraduate and postgraduate students at all levels at the Graduate Road Show thereby encouraging all students to do well in their courses	Decide on a name of the female named price and agree on level of sponsorship and target group of students	HoS	October 2013	October 2012
3.6	Improve social aspect of School	Event organised in Summer 2013 and every year if successful Family friendly culture is promoted	Summer party and Christmas party for all PhD students and staff are seen as positive to working culture	Turn summer party into a family friendly gathering such as a picnic in a park close to the college	School manager	Summer 2013	October 2012

Action	Description of action	Success Measure	Action taken already and outcome at November 2012	Further action planned at November 2012	Action owner	Timescale	Start date
4	Career breaks/flexible working						
4.1	Improved flexibility for academics	Improved image of part-time working staff, greater flexibility for all academics	A part time working guarantee was introduced by which a member of staff who decides to work part-time can come back to her/his previous maximum full time equivalent at any time A remote desktop for working from home is available	Publicise part time working guarantee to all staff	HoS	December 2012 Ongoing	October 2012 2005
4.2	Improved support for staff members returning from maternity leave or long-term illness	Enable returning academics to maintain a high career trajectory (e.g. re-energise research)	A policy that guarantees a reduced teaching and administration load in the first full semester after returning has been introduced.	Publicise the scheme to all staff Monitor efficiency of the new policy	HoS	November 2015	October 2012

7. Case study: impacting on individuals: 975 words

[Case studies have been removed to not compromise personal information]