Department Application

Bronze and Silver Award

ATHENA SWAN BRONZE DEPARTMENT AWARDS

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

ATHENA SWAN SILVER DEPARTMENT AWARDS

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

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

COMPLETING THE FORM

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

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

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

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

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

WORD COUNT

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

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

We have provided the following recommendations as a guide.

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

Name of institution	University of Liverpool	
Department	School of Physical Sciences	
Focus of department	**STEMM**	
Date of application	Nov. 2016	
Award Level		**Silver**
Institution Athena SWAN award	**Date: 2013**	**Level: Bronze**
Contact for application Must be based in the department	Prof. Ronan McGrath	
Email	mcgrath@liv.ac.uk	
Telephone	0151 7958142	
Departmental website	https://www.liverpool.ac.uk/physical-sciences/	

1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

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

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

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

Prof. Ronan McGrath,
Head of the School of Physical Sciences.

Dear Athena SWAN panel,
As Head of School I am delighted to present our Athena SWAN silver award application. I fully endorse the principles of equity and fairness of opportunity championed by Athena SWAN, and in demonstration of my commitment I have chaired the group which has developed this application and the accompanying action plan. Our shared vision is to create an environment where the choice of a career as an academic woman scientist or academic administrator comes without the need to compromise on other aspects of work-life balance or wellbeing. We also aspire to be sector-leading in this area of our activity.

The School's Equality and Diversity Committee has been responsible for ensuring that the Athena SWAN Bronze actions were implemented. We believe we have made very substantial progress, and the evidence to justify this statement is to be found throughout the document. Some representative impacts arising from our action plan activities are:

- Since our Bronze award the proportion of permanent female Teaching and Research appointments in the School has more than doubled from 14.5% to 35%; 7 out of 20 appointments have been female compared 2 out of 20 in the two previous years.
- Successful promotions of female academic staff in 2014 and 2015 (45% of total, compared to 15% of the total in the two prior years);
- Establishment of a School Researcher forum, represented on our Leadership team, and a development programme for PDRAs;
- E&D activities to encourage girls into science; such as our sponsored trip to the European Synchrotron Radiation Source in Grenoble;
- Higher proportions of women speakers in our seminar programmes;
- Women colleagues nominated for internal and external awards, including two short-listed for the "Women of the Future Awards" in 2015 and 2016;
- Female representation on all selection and interview panels and on senior school and departmental committees.

We have also noted some areas where progress has been slow, and have identified new challenges to be faced. For example several of the actions proposed focus on improving the working environment of post-doctoral staff. These are documented in our application and accompanying action plan, along with our updated previous action plan. I have allocated a dedicated budget to Equality and Diversity committee (£10k per year). Resource is also available through other channels – for example the budgets of seminar organisers have been extended to help with gender balance, and a proportion of our HR lead Ian Bamber's time (10%) will continue to be allocated to help co-ordinate our programme.

In summary, we are proud of the substantial progress made in the past two and a half years. We have put in place a new action plan which will take us forwards towards our ambition of being a beacon School for this University, and to be a sector leader and a Gold Award holder in due course. Finally, I verify that the information included in this application is an honest, accurate and true representation of the School.

Yours sincerely,

(501/500 words)

2. DESCRIPTION OF THE DEPARTMENT

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

Please provide a brief description of the department including any relevant contextual information. Present data on the total number of academic staff, professional and support staff and students by gender.

Note:
This application is being made under the post-May 2015 guidelines. We include completed Bronze action plan as it is referenced throughout the text.

Acronyms, Benchmarks and Highlights:

Surveys	An overview of our survey methodology is presented in **Section 3**. Survey results are referenced throughout the text; improvements over 2014 responses are shown in green while adverse changes are shown in red.
Benchmarks	Benchmarks are sourced from HESA data and are quoted for the latest available year.
PDR	Professional development and review, the University's annual appraisal process
T&R	Teaching and Research career path – traditional "lecturer" route
T&S	Teaching and Scholarship career path – parallel "lecturer" route since 2010
Academic staff	T&R and T&S staff
R	Researcher career path, including PDRAs
PDRA	Post-doctoral research assistant
Action point	Refers to a completed Action from the Bronze Award action plan and is also highlighted by A in the right-hand margin
Impacts	Some major impact and good practice narratives are highlighted in boxes. Other impacts are denoted by the symbol I
Challenges	Challenge points which we assess as needing action are denoted by a warning symbol.
Action	Refers to a new Action for the Silver action plan.
Colour coding	Tables – F:yellow, M:blue; Figures – F:red, M:blue.

Description of the School:

The University of Liverpool has three Faculties: Health and Life Sciences, Science and Engineering, and Humanities and Social Sciences. The School of Physical Sciences is one of four constituent Schools of the Faculty of Science and Engineering. The School was formed from the three departments of Chemistry, Mathematical Sciences and Physics in 2010. It is the largest School in the Faculty (134 academic staff, ~40% of Faculty academic staff) and is the second-largest in the University in terms of staff numbers and research income (e.g. 22% of University research spend in 2013-14). We have 358 staff members in total, and over 2200 students.

Heads of Department have line management responsibility for academic and research staff. Each department has research and teaching sub-structures. Head of Department posts are held for 5 years (renewable) in external competition.

Following the establishment of the Schools in 2010, professional services are organised at School level rather than by department. The lead for School professional services (the School Manager) is Mrs. Louise Hobson. 4 of the 6 professional services team leaders are also female.

Figure 2.1 shows a schematic of the School structure. The main committee is the Physical Sciences leadership team, and the diagram indicates the formal and informal subgroups. Female colleagues with lead roles at School level are highlighted in yellow.

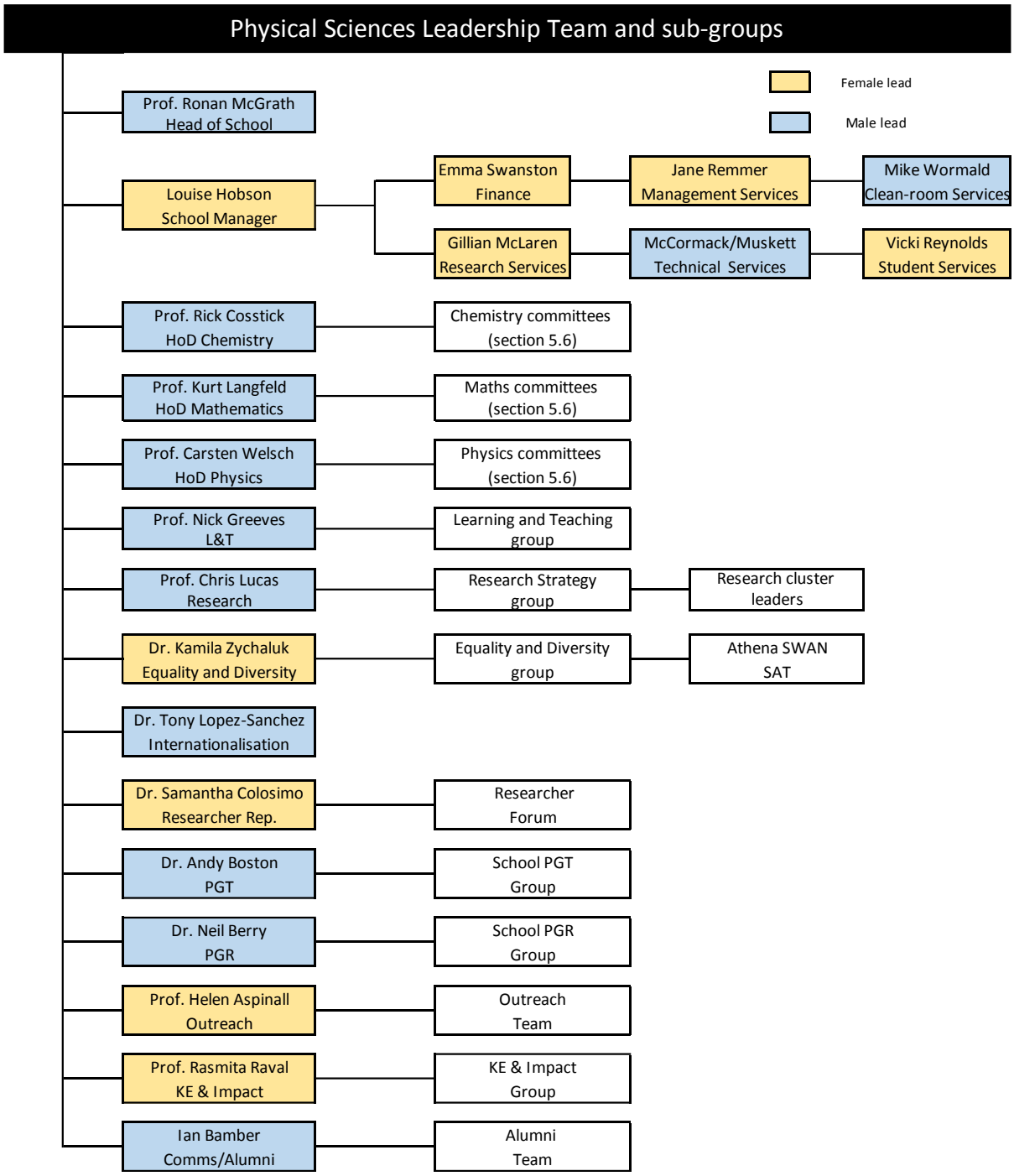


Figure 2.1: The School organisational structure.

There are two academic pathways, Teaching and Research, and Teaching and Scholarship. **Table 2.2** gives some overview data on the numbers of academic and professional services staff and students in the School at the time of submission.

		Male	Female	%Female			Male	Female	%Female
School	UG	1149	717	38%	**Chem**	UG	257	178	41%
	PGT	74	44	37%		PGT	3	0	0%
	PGR	172	70	29%		PGR	76	29	28%
	Research	98	31	24%		Research	69	25	27%
	T&R staff	109	18	14%		T&R staff	34	5	13%
	T&S staff	4	3	43%		T&S staff	3	2	40%
	Professional Services	39	36	48%					
Maths	UG	633	484	43%	**Phys**	UG	259	55	18%
	PGT	18	12	40%		PGT	53	32	38%
	PGR	38	17	31%		PGR	58	24	29%
	Research	10	2	17%		Research	61	11	15%
	T&R staff	38	8	17%		T&R staff	37	6	14%
	T&S staff	1	0	0%		T&S staff	0	0	-

Table 2.2: Summary data for student and staff numbers.

In **Fig. 2.2** we plot these data for the School – this gives a preview of the gender pipeline. We will comment further on these numbers and associated trends in Section 4 below.

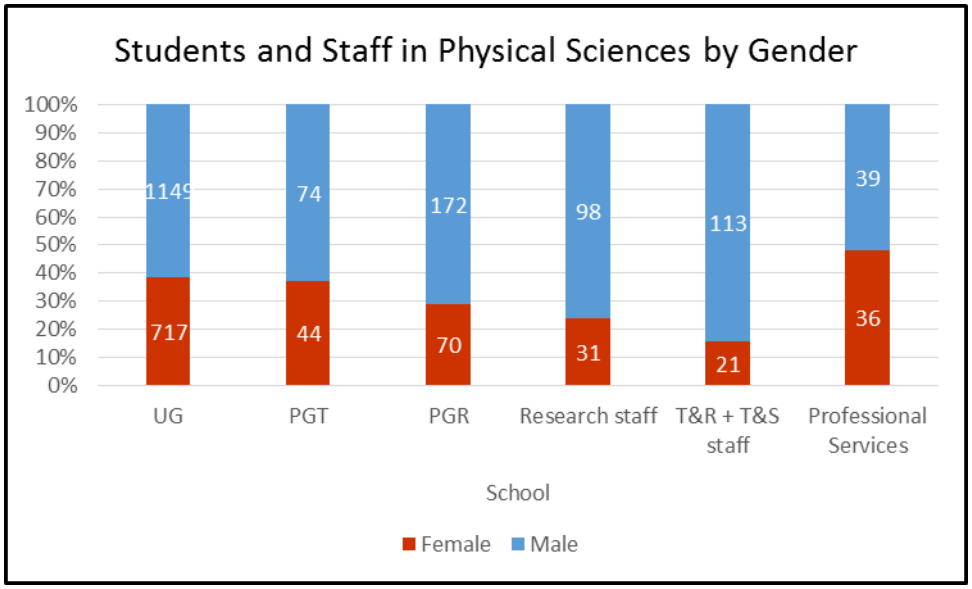


Figure 2.2: Student and staff numbers by gender (July 2016 snapshot).

(518/500 words)

3. THE SELF-ASSESSMENT PROCESS

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

Describe the self-assessment process. This should include:

(i) a description of the self-assessment team

(ii) an account of the self-assessment process

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

(i) The Self-Assessment Team

In assembling the SAT, attention was paid to a number of factors: representation of diverse groups in the School, balance of early career and senior colleagues, line management is engagement and gender balance.

Mr Ian Bamber is the School's Human Resources contact. He oversees School communications. He conducted the Professional Services survey and associated analysis. Ian has 2 children.

SAT (A-M): Ian Bamber, Corina Constantinescu, Rick Cosstick, Yvonne Gründer, Laura Harkness-Brennan, Louise Hobson, Kurt Langfeld, Kostas Mavrokoridis, Ronan McGrath

Dr Corina Constantinescu is Director of our Institute for Financial and Actuarial Mathematics and is an elected member of the University Senate. She co-developed the action plans for Bronze and Silver.

Professor Rick Cosstick is Head of the Department of Chemistry. He is responsible for implementation of E&D in Chemistry.

Dr Yvonne Gründer is a Royal Society Research Fellow in Physics. She is the chair of the Department's Juno committee (see Section 7).

Dr Laura Harkness-Brennan is a lecturer in nuclear Physics. She has participated in the Aurora Women in Leadership programme and promotes gender-balanced outreach and recruitment activities.

Mrs Louise Hobson is the School Manager with responsibility for professional services and has had oversight of these elements of the application. She has two children.

Professor Kurt Langfeld is the Head of the Department of Mathematical Sciences. He is married with two children. He joined the University in July 2016.

Professor Ronan McGrath is the Head of the School. He chairs the Equality and Diversity Team and the SAT. He is married with four children.

The SAT at work.

SAT (O-Z): Mona Omir, Jane O'Neil, Gita Sedghi, Ozgur Selsil, Anna Slater, Helen Vaughan, Carsten Welsch, Kamila Zychaluk

Dr Kostas Mavrokoridis is a lecturer in Physics and a European Research Council fellow. He coordinates the Equality and Diversity group within the Physics.

Ms. Mona Omir is a PhD student in Chemistry, and represents the views of PhD students.

Ms. Jane O'Neill is a PhD student in Applied Maths, and represents the views of Maths PhD students.

Dr Gita Sedghi is a T&S senior lecturer in Chemistry. She is a member of the University Wellbeing Project Group. She conducts research into internationalisation and peer-assisted learning. She coordinated case studies for the SAT.

Dr. Özgür Selsil is a lecturer in Mathematical Sciences. He has four children. He co-developed the action plans for Bronze and Silver.

Dr Anna Slater is a PDRA in Chemistry. She will shortly begin an independent Research Fellowship. She led the development of a School Postdoctoral Forum, and has designed the surveys for the Athena SWAN application. She has one daughter and is the subject of one of our Case Studies.

Dr Helen Vaughan is a T&S Physics lecturer. Helen has organised large-scale widening participation outreach and recruitment activities on behalf of the School.

Prof. Carsten Welsch is Head of the Physics Department. He coordinates several EU Network projects. He has been responsible for developing innovative PGR training in the School. He has 2 children.

Dr Kamila Zychaluk is a Lecturer in the Statistics. She has one daughter and is working part-time (0.8 FTE). Kamila is the School lead and represents us on Faculty and University Equality and Diversity committees.

(ii) The self-assessment process

The School established an Equality and Diversity Committee in 2012. The Athena SWAN SAT was formed in March 2013 as a sub-group. The SAT developed the application for our Bronze award which was submitted in April 2014. Since then, the group has met on 14 occasions, and also been represented at 6 Faculty and 8 University Athena SWAN meetings.

Two innovative elements of the work of the SAT are:

- The establishment of an Athena SWAN supporters group in the School. This group is called upon to mobilise staff and students to support events and to help with survey and compulsory training completion. The group is shown in **Table 3.1**.
- Our Athena SWAN Diary, located in a shared on-line space which allowed all members of the team to continuously provide updates on actions and impacts.

Dr. Sue Barlow	Academic	Chemistry
Dr. Rachel Bearon	Academic	Maths
Dr. Marielle Chartier	Academic	Physics
Prof. Andy Cooper	Academic	Chemistry
Dr. Cate Cropper	Academic	Central Teaching Lab
Prof. Tim Greenshaw	Academic	Physics
Dr. Helen Hayward	Postdoc	Physics
Shu Huo	UG student	Maths
Ewan Johnstone	PGR student	Maths
Dr Konstantin Luzyanin	Professional Services	School
Annette Pressman	PGR student	Physics
Prof. Rasmita Raval	Academic	Chemistry
Jane Remmer	Professional Services	School
Prof. Lasse Rempe-Gillen	Academic	Maths
Prof. Peter Weightman	Academic	Physics

Table 3.1: Athena SWAN supporters group.

Surveys: In June 2016 we received the results of our second School-wide survey. This was sent to PGR students, PDRA staff, Academic staff, and, for the first time, Professional Services staff, with the questions adapted for each staff grouping. This enabled us to make comparisons against our 2014 survey. **Table 3.1** shows the participation rates. Though the response rates are not as high as we would like, for each grouping there are at least 40 responses.

	Chem		Maths		Physics		Total	% of eligible population
	F	M	F	M	F	M		
PGR	4	13	9	8	8	12	57	24%
PDRA	12	16	1	2	7	7	47	34%
Academic	6	15	5	5	3	13	52	39%
Professional Services	9	4	4	0	9	0	43	57%

Table 3.1: 2016 surveys: responses in each staff category by department and gender. Respondents who did not provide their gender are counted in the 'total' column.

The surveys in general show positive improvement in satisfaction and attitudes, particularly for academic staff. For research staff and PGR students, the results are mixed, and actions to improve the working lives of post-doctoral researchers and PGR students form a major theme of the Silver Action Plan.

As an example of the survey analysis, and to highlight our approach throughout the document of evidencing the impact of our actions, we focus on awareness of Athena SWAN and E&D in the School. The SAT organised several awareness-raising activities including:

A

- November 2014 "Celebration of Women in the Physical Sciences"
- May 2015: Research Leadership – Prof Andy Cooper
- December 2015 – Undergraduate student event – "Becoming a PhD research student"
- May 2016 – Prof. D. Vvedensky –Imperial Physics – "Achieving a Silver award".
- Staff in the School are kept informed of progress via the School's newsletter, through the School's Researcher Forum and in drop-in consultation events. We also have a dedicated Athena SWAN page on our website.

These events are generally very well appreciated. For example, after the "Celebration" event, 20 attendees signed up to a mailing list for future events. Following these actions, the percentage of staff who completed the University's Equality and Diversity on-line training went up from 13.5% in June 2014 to 85% in Oct. 2016

Our surveys provide further evidence of impact**: Figs. 3.1** and **3.2** illustrate responses and analysis on this issue:

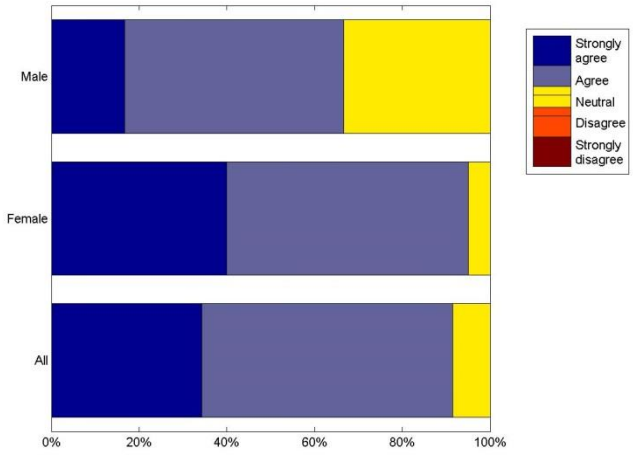


Figure 3.1: Professional services staff responses to "I am aware of the School's Athena SWAN application".

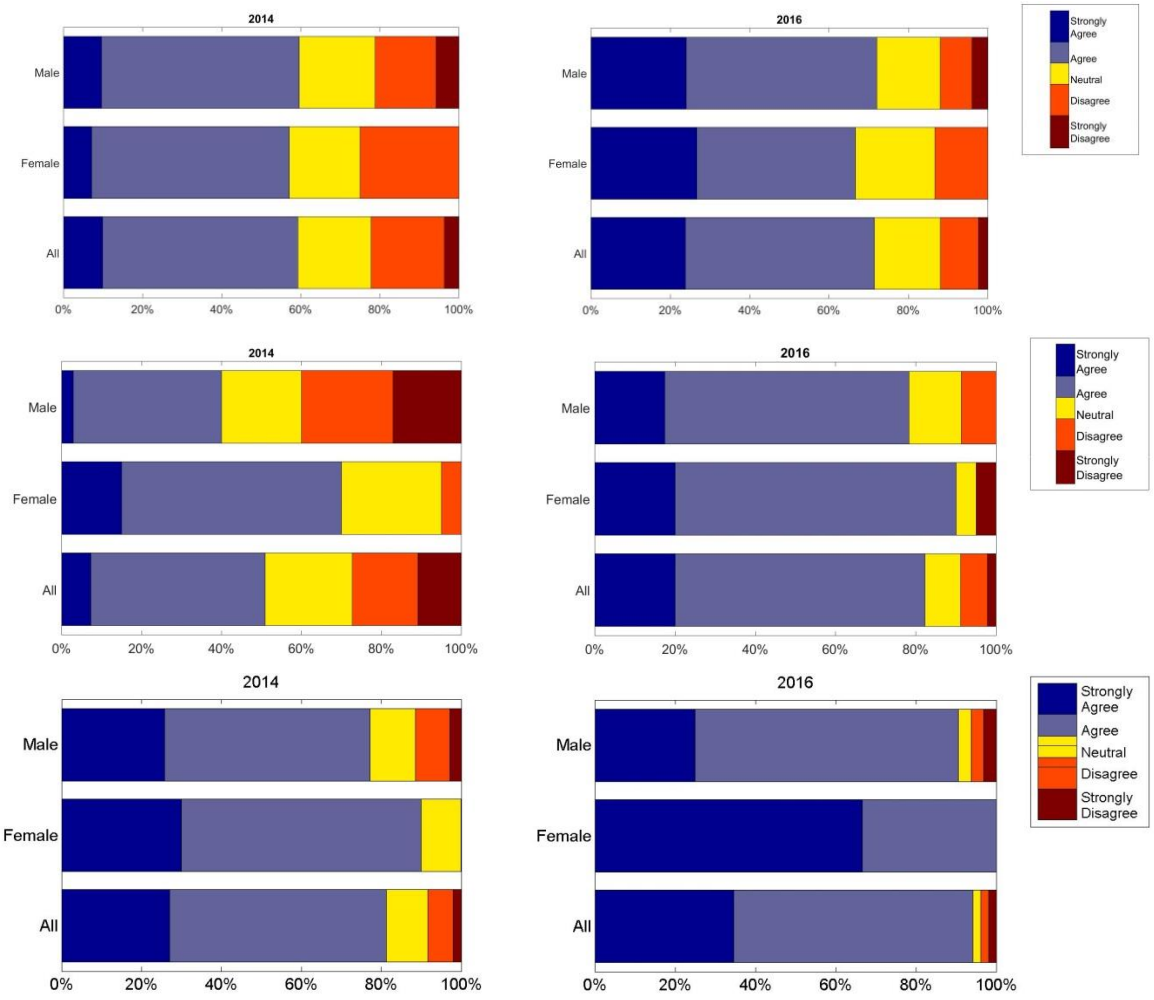


Figure 3.2: PGR (top) PDRA (middle) and academic staff (bottom) responses to 'I am aware of the School's Athena SWAN application". Left side: Jan. 2014 responses, Right side: May 2016.

We conclude that our actions have been very successful in impacting on awareness of Diversity and Equality and Athena SWAN issues.

Dmitri Vvedensky (Imperial) "Achieving a Silver Award" lecture, May 2016

The team has developed its competences. Ozgur Selsil and Jane O'Neill attended a London Mathematical Society workshop on "Applying for Athena SWAN: beyond Bronze" in Nov. 2015. Yvonne Gründer and Kostas Mavrokorides attend a workshop on "Unconscious Bias" at the University of Loughborough in Nov. 2015. Team members have undertaken University training on unconscious Bias. They have subsequently helped raise awareness of the critical importance of this phenomenon in the School – for example it was employed in evaluating the winners of our PDRA Collaboration Award (see p. 52).

(iii) The future of the self-assessment team

The Equality and Diversity Committee will incorporate the SAT and will meet every two months to monitor progress. This will be reported to the School Leadership Team and any difficulties or delays will be addressed. Updates from the University and Faculty steering groups will also be reported to our School Leadership Team.

The group will continue to organise events which raise the profile of Athena SWAN. For example, in February 2017, the School will host a seminar by Dame Professor Athene Donald, talking about her experiences as a woman physicist.

We also wish to be involved in supporting the Athena SWAN principles and sharing good practice more widely. We have already contributed in this way, commenting on the Bronze application of the School of Environmental Sciences, and one of us has acted as an internal reviewer of draft applications. Two of the team have served on Athena SWAN assessment panels, and a third will serve in 2017.

Action 3.1: We will increase involvement in beacon activities, supporting other areas in their Athena SWAN aspirations. The team will support the School of Law and Social Justice as they prepare their first application. The HoS is involved in a European Scientific Network and will draw on international good practice in this area.

Other issues remain on our agenda. Following the publication of the Report by the Universities UK Taskforce in October 2016 examining violence against women, harassment and hate crime affecting university students, the E&D committee will be considering a School response. The E&D group also prompted the University to organise sessions with immigration lawyers for EU staff and their families post-Brexit.

We are also ambitious to have a national profile in this area, by working with subject professional bodies and research councils. This is discussed further in later sections.

AS consultation event to mark International Women's Day 2016.

(1448/1000)

4. A PICTURE OF THE DEPARTMENT

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

4.1. Student data

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

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

The University recruits to Foundation courses through the Faculty and they are delivered by a partner organisation, Carmel College. **Table 4.1** gives numbers on Foundation courses by method of study and gender. In general, the number of part-time students is less than 5% of the total.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	FT	20	9	31	36	6	14	37	15	29	35	11	24	47	14	23
	PT	1	0	0	2	0	0	1	0	0	5	0	0	8	0	0
	Total	21	9	30	38	6	14	38	15	28	40	11	22	55	14	20
Chem	FT	6	3	33	12	1	8	10	6	38	14	3	18	12	7	37
	PT	1	0	0	0	0	0	0	0	0	1	0	0	3	0	0
	Total	7	3	30	12	1	8	10	6	38	15	3	17	15	7	32
Maths	FT	4	4	50	4	3	43	8	5	38	3	3	50	17	6	26
	PT	0	0	0	1	0	0	1	0	0	3	0	0	2	0	0
	Total	4	4	50	5	3	38	9	5	36	6	3	33	19	6	24
Phys	FT	10	2	17	20	2	9	19	4	17	18	5	22	18	1	5
	PT	0	0	0	1	0	0	0	0	0	1	0	0	3	0	0
	Total	10	2	17	21	2	9	19	4	17	19	5	21	21	1	5

Table 4.1: Foundation courses by gender for the past five years.

Therefore in **Fig. 4.1** we combine the numbers for part-time and full-time students and compare them to HESA data for 2013-14.

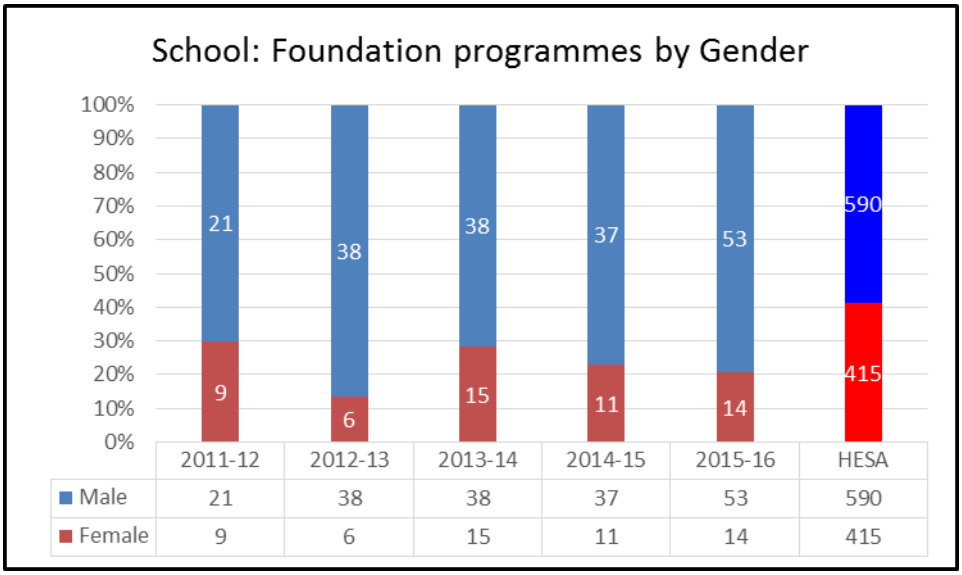


Figure 4.1: The number and percentage of Foundation (FT+PT) students by gender. Right-hand column: HESA data (2013-14).

In general we recruit a lower percentage of female Foundation students than the national benchmark. This may be related to the higher attainment of girls at A-level compared to boys in our intake (the average entry tariff for girls is higher in all three departments of the School).

Action 4.1: We will review this correlation with the Faculty recruitment team and Carmel College and act to address any short-comings in Foundation recruitment processes identified.

(ii) Numbers of undergraduate students by gender

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

A number of actions were taken with respect to our Bronze action plan (***Actions 1ii***, ***3i*** and ***3ii:*** balanced representation of staff in Applicant Visit (Discovery) days and ***Action 1v*** covering childcare costs for staff and PGR students involved in Applicant Discovery days). We have also ensured our promotional material has appropriate gender representation (***Action 1iii***), emphasises female role models. Our website and that of Liverpool Women in Science and Engineering (LivWISE, see **Section 7**, p.70) has profiles of female academic and research staff, including movies.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	FT	779	537	41	948	625	40	1063	731	41	1116	770	41	1093	686	39
	PT	34	14	29	43	20	32	59	22	27	62	19	23	56	31	36
	Total	813	551	40	991	645	39	1122	753	40	1178	789	40	1149	717	38
Chem	FT	187	135	42	188	134	42	210	127	38	225	142	39	245	170	41
	PT	10	7	41	16	9	36	18	10	36	15	8	35	12	8	40
	Total	197	142	42	204	143	41	228	137	38	240	150	38	257	178	41
Maths	FT	386	344	47	500	425	46	567	534	49	614	553	47	603	462	43
	PT	11	4	27	19	8	30	27	10	27	31	10	24	30	22	42
	Total	397	348	47	519	433	45	594	544	48	645	563	47	633	484	43
Phys	FT	206	58	22	260	66	20	286	70	20	277	75	21	245	54	18
	PT	13	3	19	8	3	27	14	2	13	16	1	6	14	1	7
	Total	219	61	22	268	69	20	300	72	19	293	76	21	259	55	18

Table 4.2: UG numbers for the past five years.

We turn to the data to assess the impact of these actions. **Table 4.2** shows numbers of undergraduate students.

In general the number of part-time students is small. We have combined both full-time and part-time numbers to compare with bench-mark data in **Fig. 4.2**. For Chemistry and Physics, the percentage of female students is close to or at the HESA benchmark data. For Mathematical Sciences, the proportion of female students is around 47%, which exceeds the HESA national benchmark of 38%. (For HEU it is 42%, and for cohorts of students coming into second year from our partner in China, Xi'an Jiaotong Liverpool University (XJTLU) it is 51%).

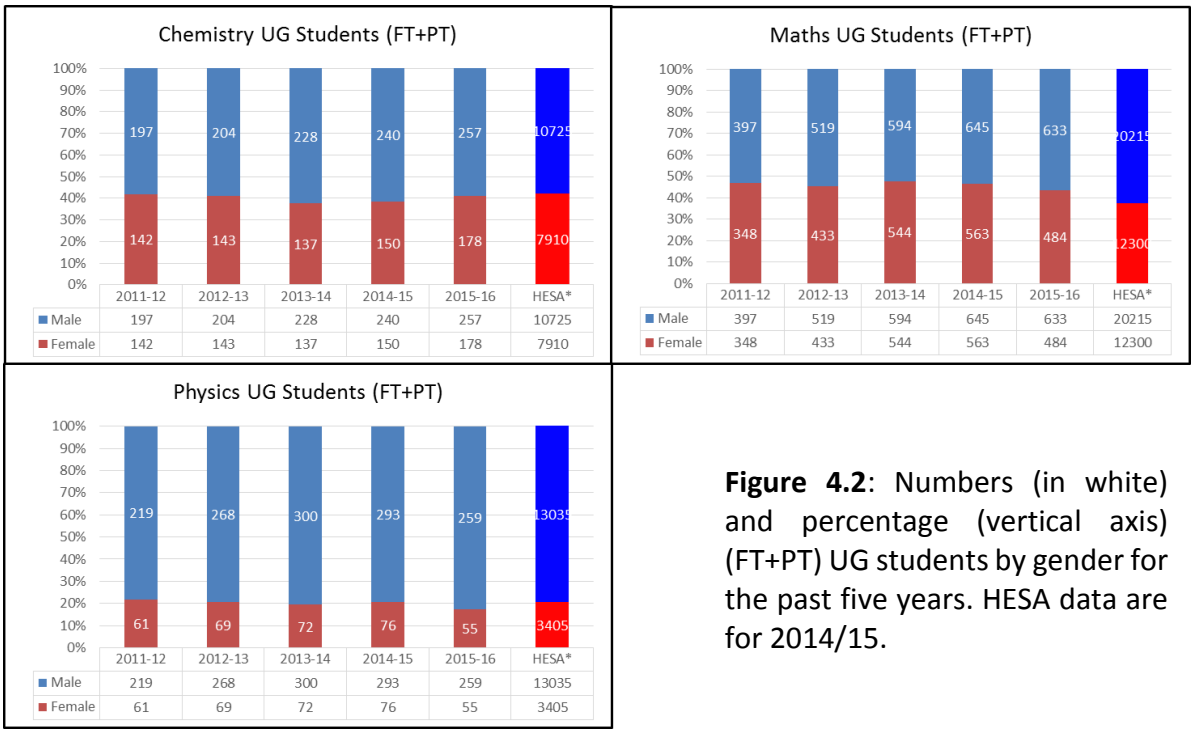


Figure 4.2: Numbers (in white) and percentage (vertical axis) (FT+PT) UG students by gender for the past five years. HESA data are for 2014/15.

Overall therefore we conclude that our actions have had some successes in terms of student numbers, but we are not seeing dramatic improvements in recruiting female students. We are recruiting at above national benchmarks in Mathematics and while we are around the benchmarks for both Chemistry and Physics our ambition is to exceed them.

Action 4.2 Work with the Professional Bodies (Institute of Physics, Royal Society of Chemistry, London Mathematical Society) to develop innovative approaches to attracting female students.

Turning to our admissions procedures themselves, **Table 4.3** shows admissions data for the past 5 years.

		2011-2012			2012-2013			2013-2014			2014/2015			2015/2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Applications	1709	1006	37	1941	1020	34	2122	1164	35	1916	1145	37	1803	1132	39
	Offers				1546	880	36	1734	1004	37	1803	1102	38	1705	1085	39
	Admissions	308	212	41	445	279	39	460	324	41	376	290	44	418	281	40
Chem	Applications	532	286	35	441	217	33	429	261	38	440	304	41	391	342	47
	Offers				348	189	35	347	211	38	412	287	41	371	322	46
	Admissions	61	34	36	78	42	35	84	50	37	75	54	42	84	71	46
Maths	Applications	744	617	45	938	648	41	989	728	42	1091	728	40	1109	688	38
	Offers				762	567	43	818	647	44	1045	710	40	1063	666	39
	Admissions	172	158	48	254	216	46	265	254	49	250	218	47	286	197	41
Phys	Applications	433	103	19	562	155	22	704	175	20	385	113	23	303	102	25
	Offers				436	124	22	569	146	20	346	105	23	271	97	26
	Admissions	75	20	21	113	21	16	111	20	15	51	18	26	48	13	21

Table 4.3: UG applications, offers and admissions by gender and by year.

In **Fig. 4.3** we plot this data. In general, although there are some fluctuations, the three categories track each other closely, indicating that there is no built-in bias in our procedures.

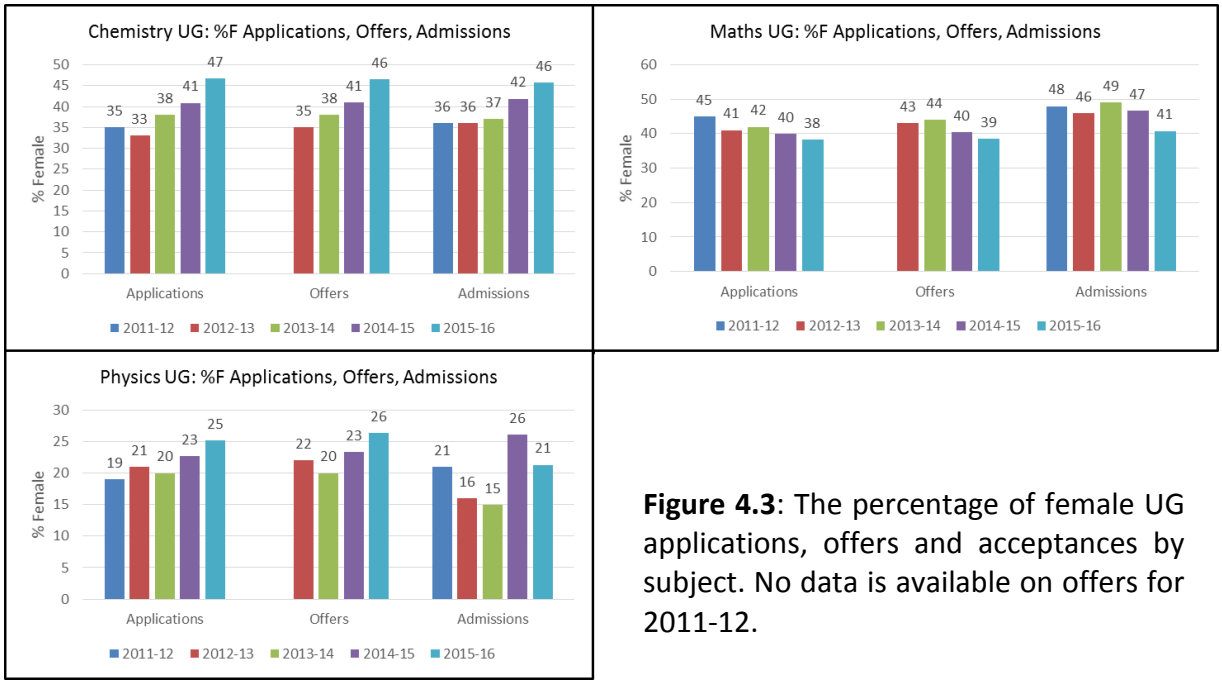


Figure 4.3: The percentage of female UG applications, offers and acceptances by subject. No data is available on offers for 2011-12.

(iii) Degree attainment by Gender

We were concerned at possible underachievement in Physics in our Bronze application and investigated this under ***Actions 2iv*** and ***4***. Helen Vaughan led engagements with students (focus groups and interviews). We concluded that these differences are not statistically significant.

A

This analysis is borne out by more recent data. Degree attainment by gender is presented in **Table 4.4** for the past five years. On the whole in the School, female students outperform their male counterparts. For example the percentages of female students achieving 1st class, and combined 1st class and 2(i) degrees is shown in **Fig. 4.5**. For each department, female students outperform male students in the % achieving 1st class degrees. When we combine 1st and 2(i) class degrees, our Chemistry and Maths female students also outperform their male counter-parts.

		1st		2i		2.ii		3rd		Pass		Total students	
		M	F	M	F	M	F	M	F	M	F	M	F
Chem	2010-11	6	24	16	11	9	5	0	1	0	0	31	41
	2011-12	9	12	15	16	14	8	8	1	0	0	46	37
	2012-13	13	20	19	14	9	7	1	1	1	0	43	42
	2013-14	11	12	25	18	15	7	1	1	3	0	55	38
	2014-15	15	14	33	17	10	6	1	0	5	0	64	37
Maths	2010-11	46	68	59	49	41	28	11	8	5	0	162	153
	2011-12	25	55	33	39	34	26	14	8	2	1	108	129
	2012-13	55	43	40	35	32	34	7	2	5	2	139	116
	2013-14	59	100	84	67	43	31	3	3	9	2	198	203
	2014-15	81	121	80	76	60	43	13	11	14	7	248	258
Phys	2010-11	11	3	10	3	9	8	2	1	3	0	35	15
	2011-12	13	5	11	3	7	2	1	1	0	0	32	11
	2012-13	23	5	18	4	14	4	4	2	0	0	59	15
	2013-14	22	8	27	5	11	3	2	1	0	0	62	17
	2014-15	26	11	27	15	8	2	3	1	5	0	69	29

Table 4.4: Data for degree attainment by gender.

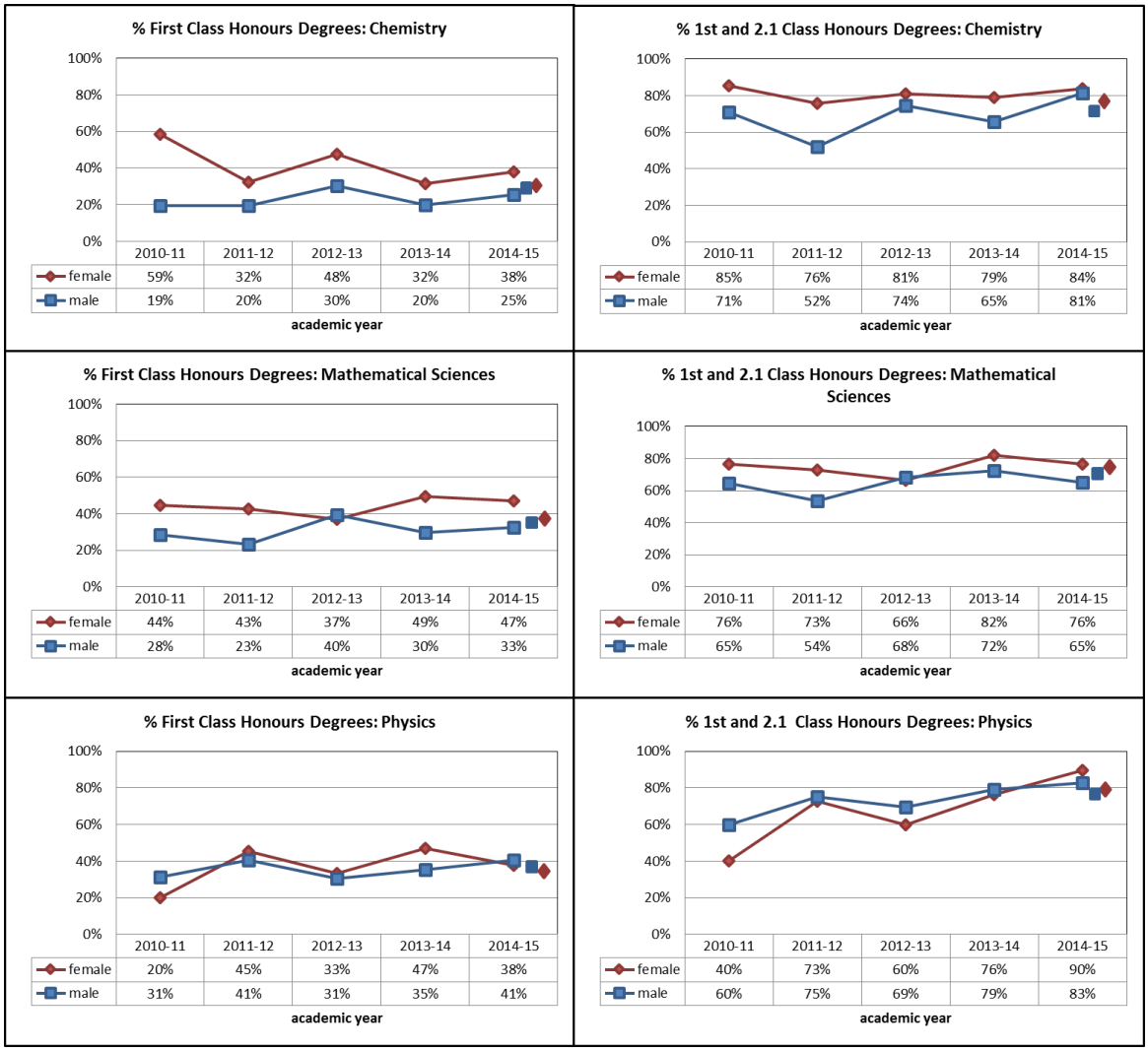


Figure 4.5: Breakdown by percentage of gender of 1st class (left) and combined 1st and 2i degree classes (right), from the data in **Table 4.4**. HESA benchmarks (2014-15) are shown to the right of each plot.

The HESA numbers are summarised in **Table 4.5**.

	% 1st		%(1st and 2.i)	
	M	F	M	F
Chem	32%	33%	73%	76%
Maths	37%	39%	70%	75%
Physics	39%	38%	77%	78%

Table 4.5: HESA benchmark data for degree attainment 2014-15.

Nevertheless there is external evidence that attainment gaps in Physics are an international issue (Miyake et al. Science 330 2010 1234). Attainment gaps are often associated with Stereotype Threat (anxiety about becoming a negative stereotype exacerbates poor exam performance).

As part of our Action Plan, Helen Vaughan will lead on a project to investigate attainment in Physics by gender, ethnicity and background and then develop methods to reduce the gap. This forms part of Helen's Scholarship role and is accounted for in workload assessment. The School will provide the resources needed and Helen will report back to the School's Equality and Diversity committee by June 2017. Helen will also organise a national meeting on behalf of the Institute of Physics on this topic.

Action 4.3: The School will undertake a project to investigate attainment by gender, ethnicity and background and then develop methods to reduce the gap, and will be nationally leading in this area. This will be part of a wider attempt to understand the effects of intersectionality in our School.

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

Full- and part-time. Provide data on course application, offers and acceptance rates and degree completion rates by gender.

Our bronze action plan did not have specific points related to PGT, as we compared well with benchmarks. This continues to be the case.

Table 4.6 shows data for students on PGT courses for the past five years. PGT in Chemistry started two years ago and the numbers are small.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	FT	44	48	52	18	10	36	22	16	42	24	17	41	25	16	39
	PT	26	17	40	43	27	39	47	31	40	45	30	40	49	28	36
	Total	70	65	48	61	37	38	69	47	41	69	47	41	74	44	37
Chem	FT										4	4	50	3	0	0
	PT										0	0	-	0	0	-
	Total										4	4	50	3	0	0
Maths	FT	36	45	56	14	10	42	12	9	43	13	11	46	15	11	42
	PT	0	1	100	0	1	100	1	0	0	0	1	100	3	1	25
	Total	36	46	56	14	11	44	13	9	41	13	12	48	18	12	40
Phys	FT	8	3	27	4	0	0	10	7	41	7	2	22	7	5	42
	PT	26	16	38	43	26	38	46	31	40	45	29	39	46	27	37
	Total	34	19	36	47	26	36	56	38	40	52	31	37	53	32	38

Table 4.6: Postgraduate taught student numbers for the past five years.

In **Fig. 4.6** we combine FT and PT student numbers and plot the data. The proportion of female Maths and Physics PGT students matches or exceeds the national benchmark figures.

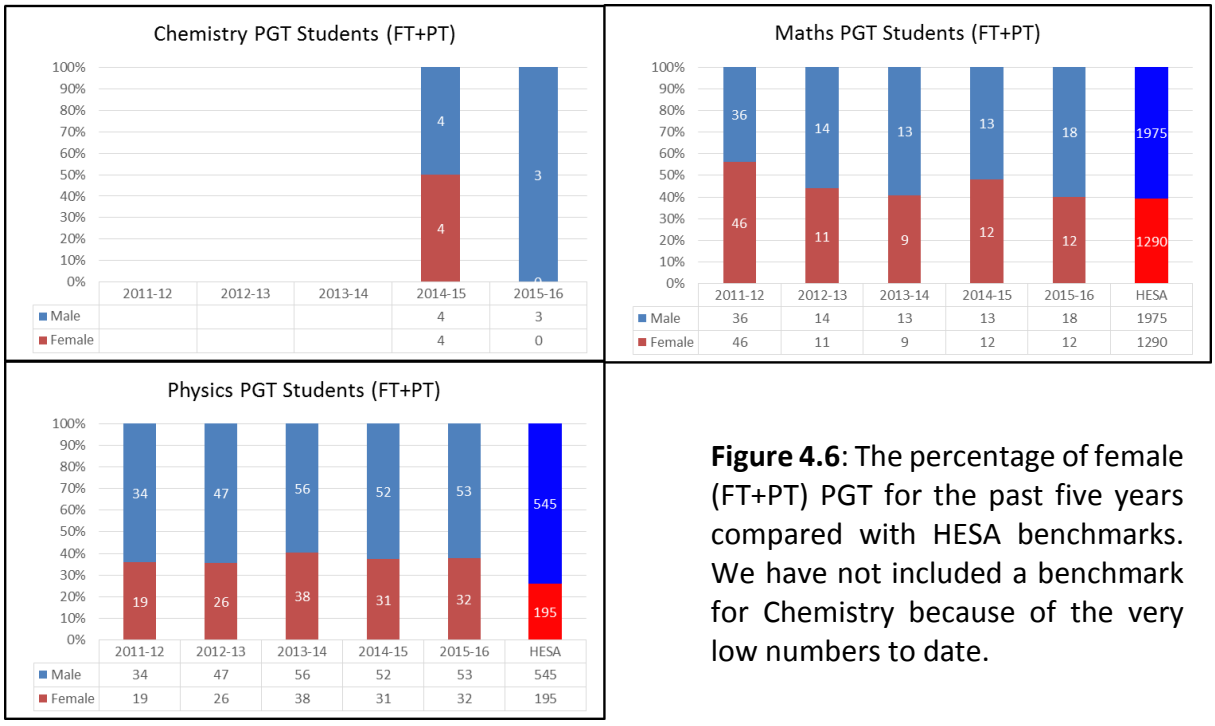


Figure 4.6: The percentage of female (FT+PT) PGT for the past five years compared with HESA benchmarks. We have not included a benchmark for Chemistry because of the very low numbers to date.

In general the number of part-time students on Mathematical Sciences PGT programmes (Financial Mathematics and Pure Mathematics) are very small. In Physics, the proportion of female students exceeds the national benchmark by about 10% in each of the years we have investigated. The main PGT programme is in Clinical Science (Medical Physics). The majority of students on this programme are part-time health professionals funded by the NHS (**Fig. 4.7**). This gender trend is consistent with national trends for women in medical physics.

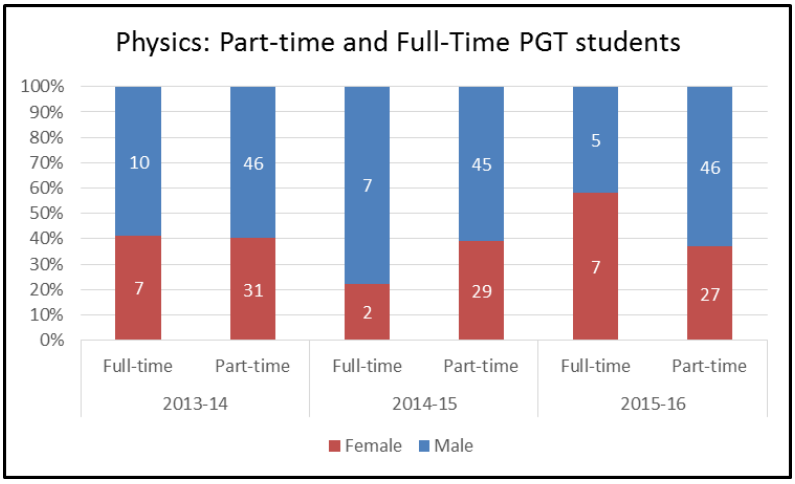


Figure 4.7: PGT students in Physics by mode of study and gender for the past three years.

We have also investigated our admissions procedures for PGT students for any evidence of bias. **Table 4.7** collates data on PGT admissions for the past five years.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Applications	312	229	42	294	193	40	280	164	37	292	188	39	238	183	43
	Offers	188	148	-	155	118	43	144	85	37	145	118	45	134	110	45
	Admissions	68	65	49	40	24	38	38	22	37	37	29	44	42	25	37
Chem	Applications										37	35	49	31	33	52
	Offers										12	16	57	14	6	30
	Admissions										4	4	50	3	0	0
Maths	Applications	239	204	46	203	144	41	165	100	38	138	94	41	130	103	44
	Offers	139	128	48	112	93	45	92	55	37	86	73	46	82	79	49
	Admissions	42	48	53	20	12	38	13	8	38	13	12	48	18	11	38
Phys	Applications	73	25	26	91	49	35	115	64	36	117	59	34	77	47	38
	Offers	49	20	29	43	25	37	52	30	37	47	29	38	38	25	40
	Admissions	26	17	40	20	12	38	25	14	36	20	13	39	21	14	40

Table 4.7: PGT applications, offers and admissions by gender.

Female percentage data are plotted in **Fig. 4.8**. These numbers are very small for Chemistry. For both Mathematical Sciences and Physics, the percentage of female offers and admissions are close to or exceed the number of applications. This suggests there is no male bias in the applications procedures.

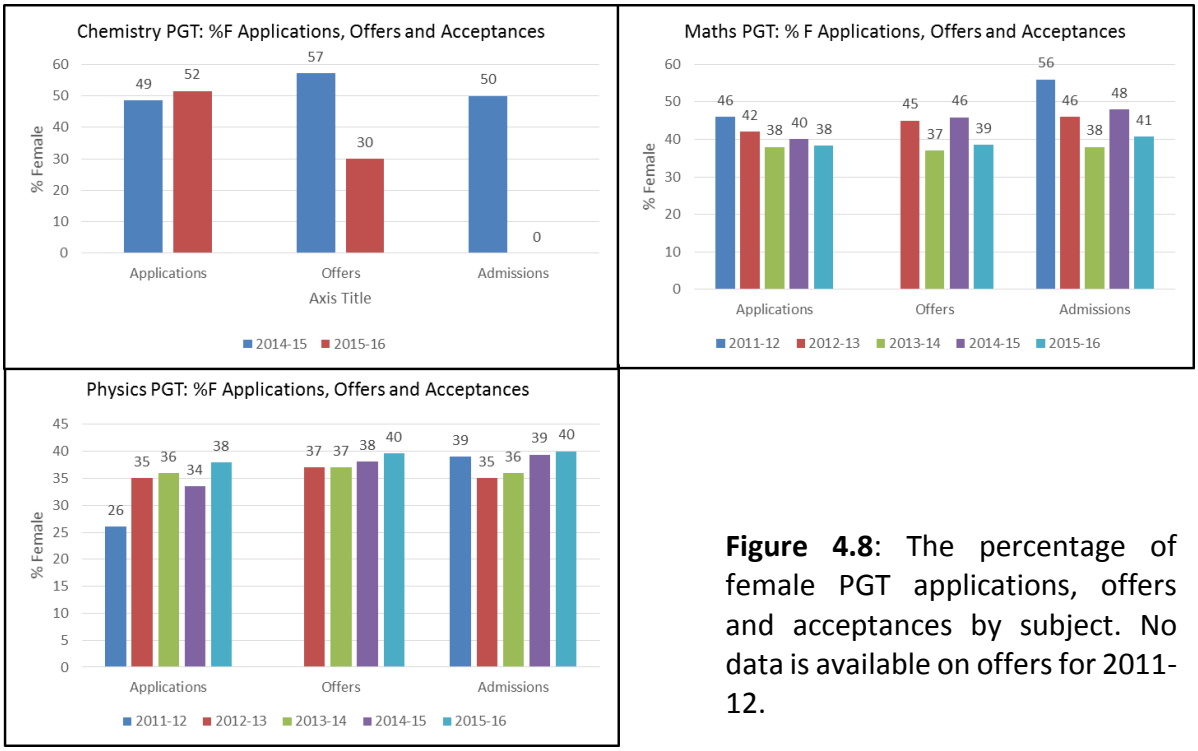


Figure 4.8: The percentage of female PGT applications, offers and acceptances by subject. No data is available on offers for 2011-12.

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

Full- and part-time. Provide data on course application, offers, acceptance and degree completion rates by gender.

We have carried out several actions related to PGR, particularly on visibility of female role models at UG level and in applications procedures (***Action 2***). A

Table 4.8 shows data for students on PGR degree programmes for the past five years.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	FT	133	48	27	139	72	34	171	80	32	177	93	34	167	68	29
	PT	6	4	40	6	3	33	6	2	25	3	2	40	5	2	29
	Total	139	52	27	145	75	34	177	82	32	180	95	35	172	70	29
Chem	FT	48	31	39	49	42	46	67	47	41	76	46	38	76	29	28
	PT	2	1	33	2	1	33	2	0	0	0	0	-	0	0	-
	Total	50	32	39	51	43	46	69	47	41	76	46	38	76	29	28
Maths	FT	37	10	21	38	20	34	42	21	33	39	25	39	38	17	31
	PT	1	1	50	1	1	50	2	1	33	0	1	100	0	0	-
	Total	38	11	22	39	21	35	44	22	33	39	26	40	38	17	31
Phys	FT	48	7	13	52	10	16	62	12	16	62	22	26	53	22	29
	PT	3	2	40	3	1	25	2	1	33	3	1	25	5	2	29
	Total	51	9	15	55	11	17	64	13	17	65	23	26	58	24	29

Table 4.8: PGR student numbers for the past five years.

The data are plotted in **Fig. 4.9**. As the number of part-time students is very small, these numbers are combined with full-time students.

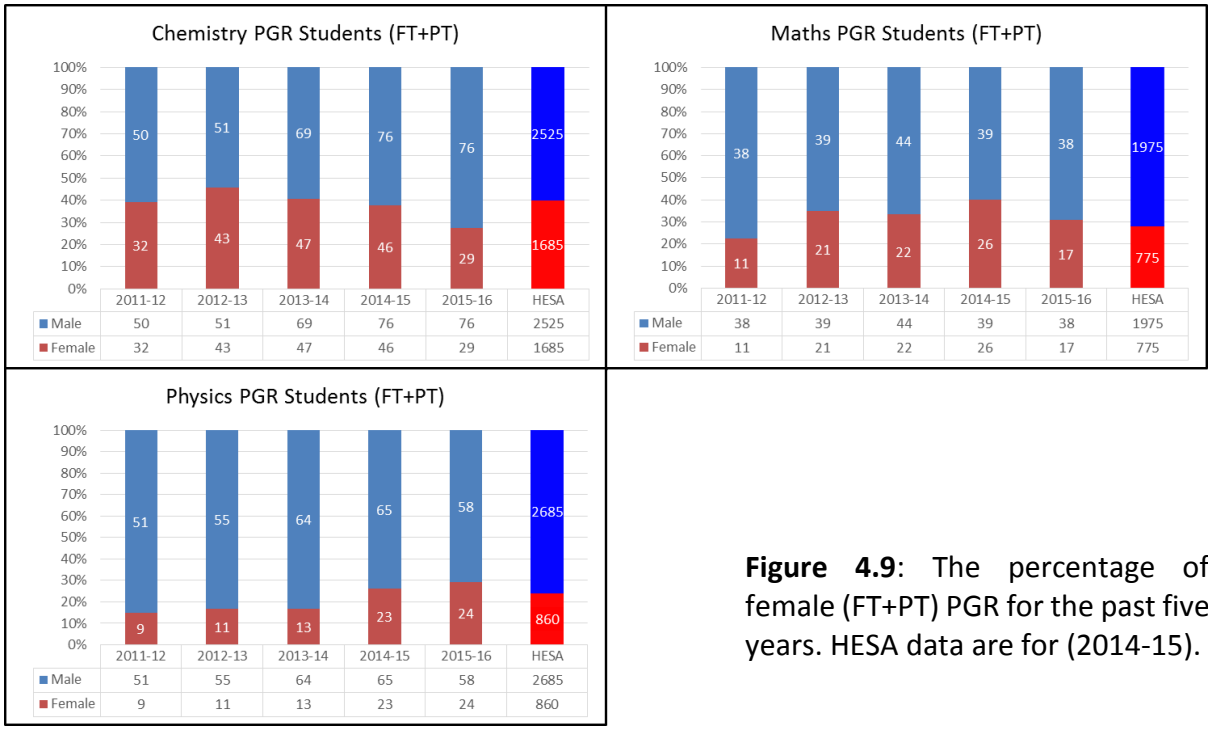


Figure 4.9: The percentage of female (FT+PT) PGR for the past five years. HESA data are for (2014-15).

In general for all areas the data compare well with national benchmark figures in each subject area, though there are fluctuations. In 2015-16 the percentage in chemistry dropped to 28% compared to the HESA benchmark of 40%.

In Physics in 2015-16 the percentage was 29% compared with the HESA percentage of 24%. There is a trend of increasing percentages of female Physics PGR students. This increase in Physics in 2015-16 can be understood by reference to the admissions data in **Table 4.9**, plotted in **Fig. 4.10**. In the past two years the conversion rate has been particularly high. We can attribute this in part to the involvement of female role models in the admissions process.

		2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Applications	266	87	25	253	93	27	217	90	29	216	93	30	176	82	32
	Offers	85	37	-	71	41	37	85	34	29	68	33	33	57	33	37
	Admissions	55	22	29	57	31	35	59	22	27	51	25	33	54	20	27
Chem	Applications	96	51	35	85	39	31	82	33	29	55	30	35	68	39	36
	Offers	27	23	46	22	21	49	36	12	25	29	11	28	31	15	33
	Admissions	19	15	44	18	16	47	29	10	26	19	7	27	31	8	21
Maths	Applications	81	19	19	63	30	32	63	30	32	60	31	34	45	18	29
	Offers	28	9	24	22	11	33	26	14	35	15	10	40	10	7	41
	Admissions	13	5	28	16	8	33	12	7	37	13	6	32	8	3	27
Phys	Applications	89	17	16	105	24	19	72	27	27	101	32	24	63	25	28
	Offers	30	5	14	27	9	25	23	8	26	24	12	33	16	11	41
	Admissions	23	2	8	23	7	23	18	5	22	19	12	39	15	9	38

Table 4.9: PGR admissions data by gender.

The dip in conversion in both Chemistry and Mathematical Sciences in 2015-16 is a cause for concern.

Action 4.4: We will redouble recruitment efforts to rectify this dip, ensuring awareness of unconscious bias and drawing on good practice in Physics.

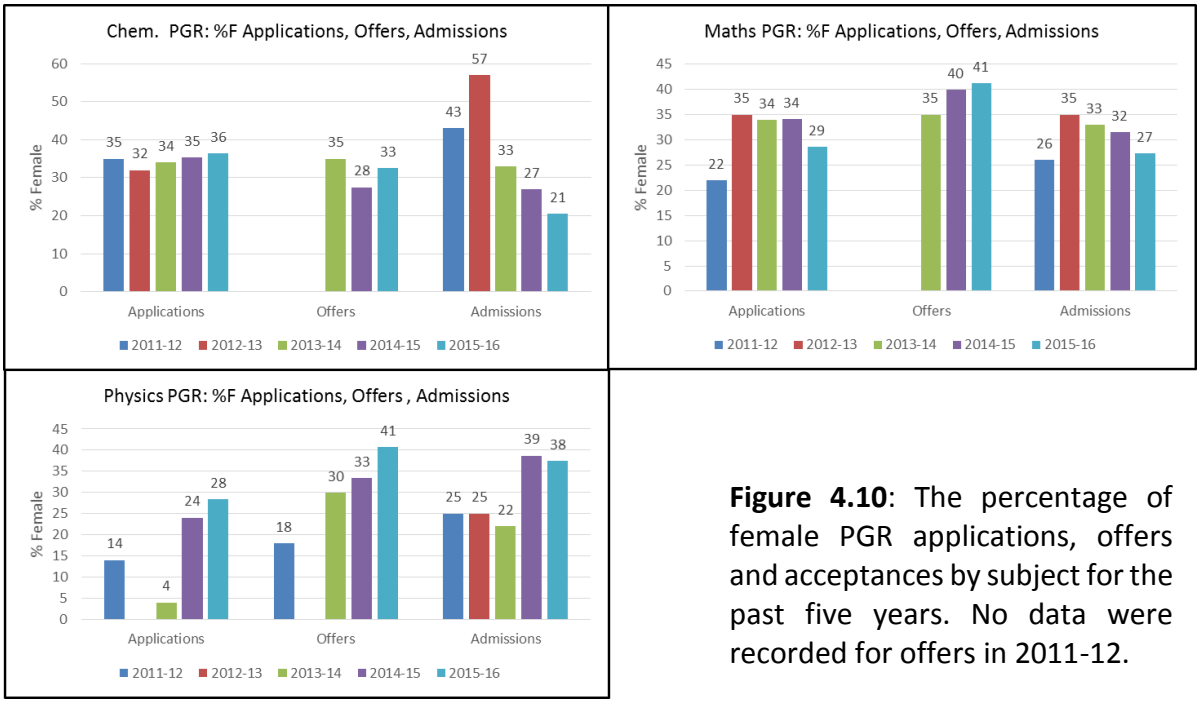


Figure 4.10: The percentage of female PGR applications, offers and acceptances by subject for the past five years. No data were recorded for offers in 2011-12.

(vi) Progression pipeline between undergraduate and postgraduate student levels

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

The School has addressed this pipeline in a number of ways. These include:

- Several staff and PGR members have been involved in outreach activities to schools and other public lectures, e.g. Café Scientifique, talking about their experiences doing a PhD.

- Three female undergraduate students were financially supported to attend the London Mathematical Society Women in Mathematics Day in April 2015.

- A trip was organised in July 2016 for 16 sixth-form female physics students to the European Synchrotron Radiation Facility in Grenoble. The aim was to change perceptions of students about scientific careers. One participant commented on Twitter "I thoroughly enjoyed my time in France on the XMAS trip. It was an enlightening and eye-opening experience".

A

Participants on the Grenoble trip.

- In December 2015 female PhD students from across the School discussed their experiences of PhD work and research careers with UG students. The event was very well received with over 60 attendees.

A

Female PGR careers event (Dec. 2015).

- We supported eight undergraduate students to attend the Oxford Women in Physics Conference (2015). Some of them have now continued with us as post-graduates.

A

Action 4.5: We will put in place resources to make the actions described above into annual events.

Below we plot percentage of females for the past five years by level of study (BSc., Masters, PhD).

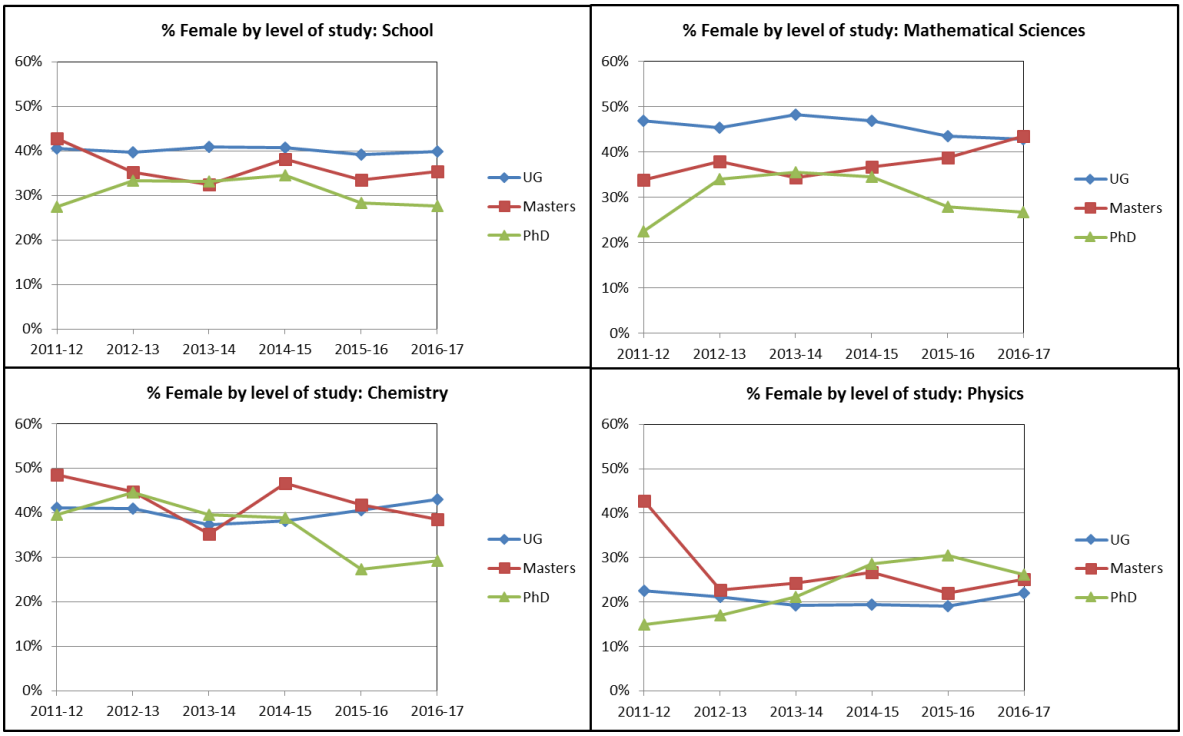


Figure 4.11: Percentage of female students at each level of study.

The data in **Fig. 4.11** show a mixed picture in terms of a pipeline of students progressing to PhD, with the % of female candidates tailing off in Chemistry and Maths. In Physics, there is definite evidence of improvement, which we believe is related to the Actions described above.

Finally, we wish to further to fully understand our student body, with reference to several E&D aspects of the student population: age profiles, ethnicity, family situation, widening participation status etc. This will position us to make future informed decisions on key focus areas.

Action 4.6: Working with University Central Services (Widening Participation and Student Recruitment), we will undertake a project to understand our student body in greater detail in terms of E&D factors and intersectionality.

4.2. Academic and research staff data

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

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

We have carried out measures under ***Action 5*** of our Bronze action plan to attract and recruit female staff including:

- Advertising all appointments through a number of women's networks, both general (e.g. LivWISE, see p.70) and subject specific (e.g. UK Women in Mathematics Network). **(*5ii*)** A
- Advertising positions with the possibility of flexible working, to attract candidates who might want to combine the role with caring responsibilities (discussion to take place after the selection process) (***5iii***) A
- Ensuring female representation on all long-listing, short-listing and interview panels (***5iv***) A

Other measures taken under ***Action 5*** are shown in our annotated Bronze action.

Tables 4.10, 4.11 and **4.12** collate data for numbers of Teaching and Scholarship, Research, and Teaching and Research staff. Data are also included for confirmed new appointments to Teaching and Research and Teaching and Scholarship roles in 2017.

The data for Teaching and Scholarship staff at Grade 6 include post-graduate demonstrators in Physics in 2016. The numbers of permanent T&S staff are small (4 male and 3 female in 2016, which is <5% of the total School academic population). The percentage of female staff is 42%, higher than for T&R, but the higher percentage of male staff does not support the notion that female staff are being employed to teach rather than to do research.

		2012			2013			2014			2015			2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Grade 6	4	1	20	3	4	57	0	0	-	1	1	50	19	6	24
	Grade 7	2	1	33	2	1	33	2	0	0	1	0	0	1	0	0
	Grade 8	0	4	100	1	3	75	2	4	67	2	3	60	2	2	50
	Grade 9	0	0	-	0	0	-	0	0	-	0	0	-	0	1	100
	Professorial	0	0	-	0	0	-	0	0	-	0	0	-	1	0	0
	Total	6	6	50	6	8	57	4	4	50	4	4	50	23	9	28
Chem	Grade 6	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Grade 7	1	1	50	1	1	50	0	0	-	0	0	-	0	0	-
	Grade 8	0	3	100	1	3	75	2	4	67	2	3	60	2	2	50
	Grade 9	0	0	-	0	0	0	0	0	-	0	0	-	0	1	100
	Professorial	0	0	-	0	0	0	0	0	-	0	0	-	1	0	0
	Total	1	4	80	2	4	67	2	4	67	2	3	60	3	3	50
Maths	Grade 6	4	1	20	2	4	67	0	0	0	0	1	100	0	0	-
	Grade 7	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
	Grade 8	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Grade 9	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Professorial	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Total	5	1	17	3	4	57	1	0	0	1	1	50	1	0	0
Phys	Grade 6	0	0	-	1	0	-	0	0	-	1	0	0	19	6	24
	Grade 7	0	0	-	0	0	-	1	0	-	0	0	-	0	0	-
	Grade 8	0	1	100	0	0	-	0	0	-	0	0	-	0	0	-
	Grade 9	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Professorial	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Total	0	1	100	1	0	-	1	0	0	1	0	0	19	6	24

Table 4.10: Numbers and %F on T&S Contracts by gender for 2012-2016.

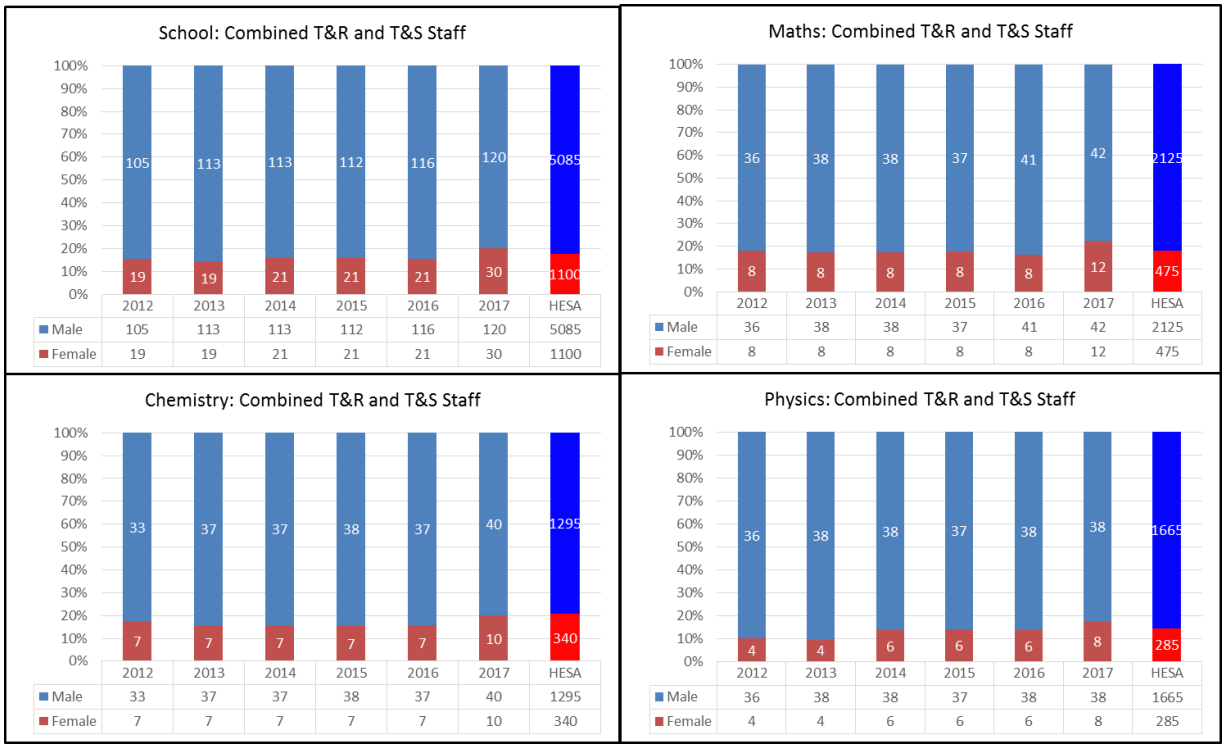
		2012			2013			2014			2015			2016		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Grade 6	14	4	22	18	3	14	13	4	24	18	4	18	6	1	14
	Grade 7	77	20	21	74	24	24	92	32	26	87	36	29	92	31	25
	Grade 8	22	3	12	27	4	13	32	4	11	30	4	12	37	4	10
	Grade 9	7	0	0	7	0	0	10	0	0	9	1	10	5	1	17
	Total	91	24	21	92	27	23	105	36	26	105	40	28	98	32	25
Chem	Grade 6	6	2	-	8	0	-	2	1	33	3	0	0	1	0	0
	Grade 7	54	14	21	54	20	27	61	26	30	58	27	32	54	23	30
	Grade 8	9	1	10	9	1	10	12	1	8	12	1	8	14	1	7
	Grade 9	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Total	69	17	20	71	21	23	75	28	27	73	28	28	69	24	26
Maths	Grade 6	4	1	20	2	0	0	1	0	0	7	1	13	0	0	-
	Grade 7	1	0	0	3	0	0	3	0	0	2	0	0	7	0	0
	Grade 8	0	0	-	2	0	-	1	1	50	0	1	100	2	1	33
	Grade 9	0	0	-	0	0	-	2	0	0	0	1	100	0	1	100
	Total	5	1	17	7	0	0	7	1	13	9	3	25	10	2	17
Phys	Grade 6	4	1	20	8	3	27	10	3	23	8	3	27	5	1	17
	Grade 7	22	6	21	17	4	19	28	6	18	27	9	25	31	8	21
	Grade 8	13	2	13	16	3	16	19	2	10	18	2	10	21	2	9
	Grade 9	7	0	0	7	0	-	8	0	0	9	0	0	5	0	0
	Total	46	9	16	48	10	17	65	11	14	62	14	18	62	11	15

Table 4.11: Numbers and %F on Research Contracts by gender for 2012-2016.

		2012			2013			2014			2015			2016			2017		
		M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
School	Grade 7	3	2	40	5	2	29	6	1	14	6	0	0	4	1	20	4	2	33
	Grade 8	23	3	12	26	4	13	21	6	22	21	4	16	22	4	15	27	10	27
	Grade 9	30	6	17	34	5	13	40	6	13	41	9	18	44	7	14	43	7	14
	Professorial	47	3	6	45	4	8	43	4	9	41	4	9	42	6	13	41	6	13
	Total	103	14	12	110	15	12	110	17	13	109	17	13	112	18	14	115	25	18
Chem	Grade 7	1	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
	Grade 8	7	1	13	9	1	10	8	1	11	8	2	20	6	2	25	8	5	36
	Grade 9	9	1	10	12	1	0	14	1	7	14	1	7	15	0	0	15	0	0
	Professorial	15	1	6	14	1	0	13	1	7	14	1	7	13	2	13	13	2	13
	Total	32	3	9	35	3	8	35	3	8	36	4	10	34	4	11	36	7	15
Maths	Grade 7	1	2	67	3	2	40	3	1	25	3	0	0	1	1	50	1	2	67
	Grade 8	9	2	18	10	2	17	8	3	27	8	1	11	12	1	8	13	3	19
	Grade 9	10	2	17	11	2	15	13	2	13	14	4	22	15	4	21	15	4	21
	Professorial	15	2	12	13	2	13	13	2	13	11	2	15	12	2	14	12	2	14
	Total	35	8	19	37	8	18	37	8	18	36	7	16	40	8	17	41	11	21
Phys	Grade 7	1	0	0	2	0	0	3	0	0	3	0	0	3	0	0	3	0	0
	Grade 8	7	0	0	7	1	13	5	2	29	5	1	17	4	1	20	6	3	29
	Grade 9	11	3	21	11	2	15	13	3	19	13	4	24	14	3	18	13	3	19
	Professorial	17	0	0	18	1	5	17	1	6	16	1	6	17	2	11	16	2	11
	Total	36	3	8	38	4	10	38	6	14	37	6	14	38	6	14	38	8	16

Table 4.12: Numbers and %F on Teaching and Research Contracts by gender for 2012-2017.

Fig. 4.12 plots the combined data for Teaching and Research staff and Teaching and Scholarship staff (to match the HESA statistics).



School	2012	2013	2014	2015	2016	2017	HESA
Male	105	113	113	112	116	120	5085
Female	19	19	21	21	21	30	1100

Maths	2012	2013	2014	2015	2016	2017	HESA
Male	36	38	38	37	41	42	2125
Female	8	8	8	8	8	12	475

Chemistry	2012	2013	2014	2015	2016	2017	HESA
Male	33	37	37	38	37	40	1295
Female	7	7	7	7	7	10	340

Physics	2012	2013	2014	2015	2016	2017	HESA
Male	36	38	38	37	38	38	1665
Female	4	4	6	6	6	8	285

Fig. 4.12: Numbers of permanent academic staff.

Figs. 4.13-4.15 show numbers of T&R staff, T&S staff and Research staff, by gender and grade. Grades 7 and 8 correspond to lectureship level, grade 9 to senior lecturer and reader and grade 10 to professor.

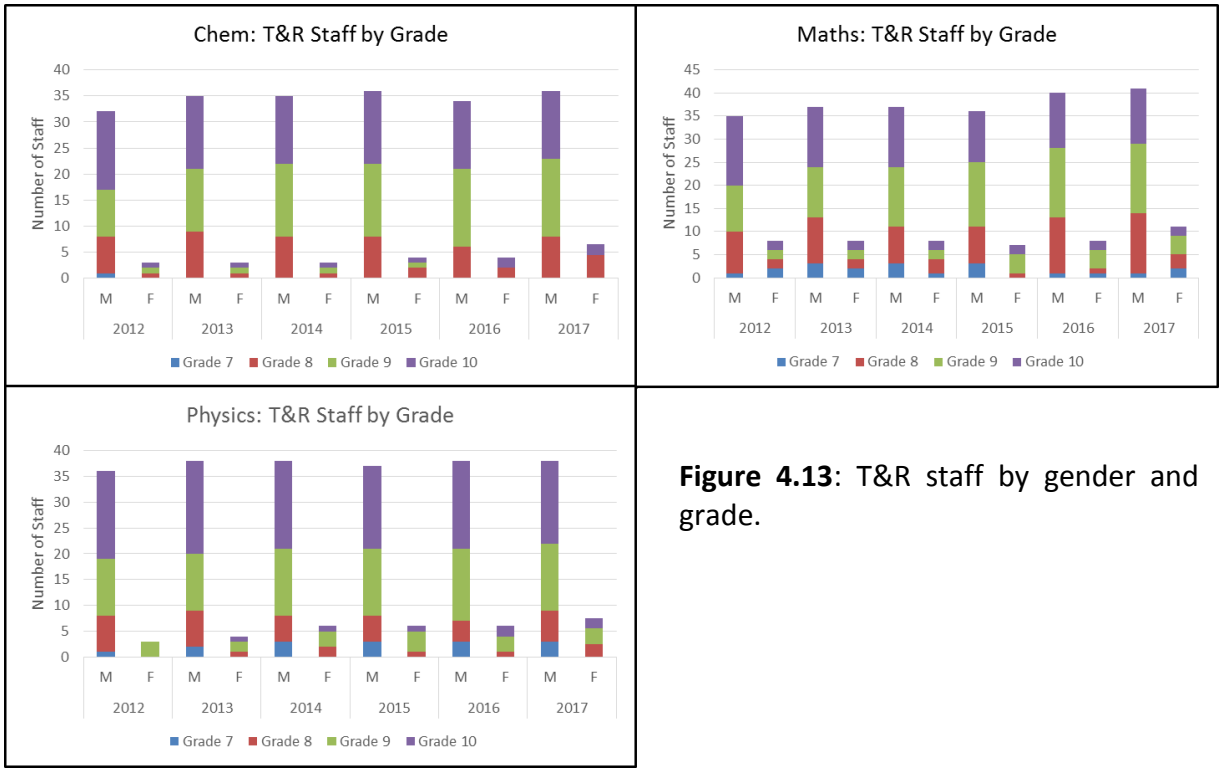


Figure 4.13: T&R staff by gender and grade.

The data for T&R Staff show a similar distribution of academic staff by grade in each department. The data show a positive trend in terms of overall numbers for each department. In Chemistry the lack of female staff at grade 9 is a consequence of a promotion to Professor in 2016.

Recruitment Success

Since our Bronze application, 35% of academic T&R staff appointed to the School have been female, compared to 10% in the preceding two years.

We now **outperform** the sector for Mathematics and Physics; the percentage for Chemistry is at the sector average. Recruitment is discussed further in **Section 5.1(i)**, p. 41.

The numbers of T&S staff are small, and they are not evenly spread across departments. This role and career path was first introduced in 2009 and therefore the majority of staff in in lecturer grades 7 or 8. Chemistry makes more extensive use of this career path.

In line with ***Action 6***, T&S Applicants for promotions have received support in the form of mentoring and advice both from within the School and elsewhere.

This has yielded successes in the first T&S promotions in the Faculty of Nick Greeves to Chair and Gita Sedghi to senior lecturer both in 2015. Promotion is commented on further in **Section 5.1 (iii).**

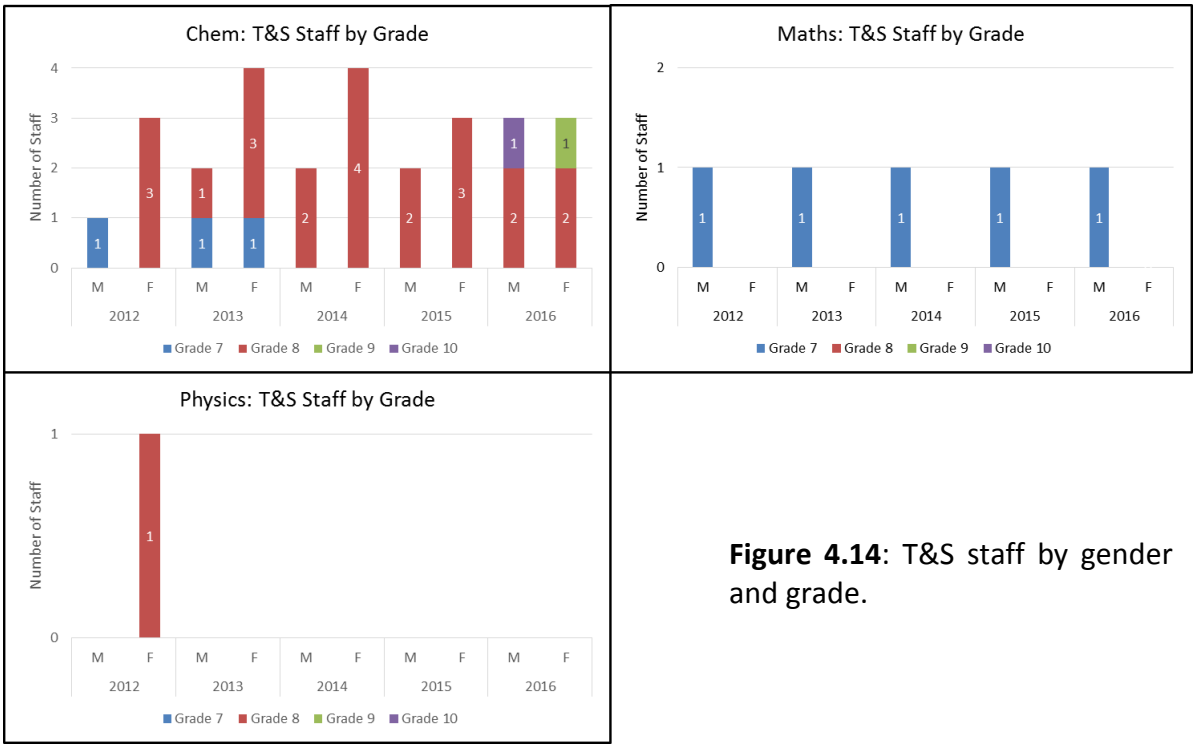


Figure 4.14: T&S staff by gender and grade.

Turning to research staff, in line with ***Action 6,*** the School has established Grade 8 research coordinator posts, which gives a career option for PDRAs who want to remain in this role over a longer time-period. They take added responsibility, in co-ordinating the activities of other PDRAs, PGR students and UG project students.

Fig. 4.15 shows numbers of research staff by grade. There is a different profile in each department. Male and female staff at grade 7 correspond to PDRAs. Staff are sometimes appointed at grade 6, and moved to grade 7 once they have passed their PhD viva. The numbers of research-only staff in Mathematics is small compared to both Physics and Chemistry, reflecting the research methodology in the subject. Finally there are more researchers at higher grades in Physics. These are generally staff on long-term grant funded projects.

The increasing numbers of grade 8 researchers indicates that this does indeed provide an attractive career path for research staff.

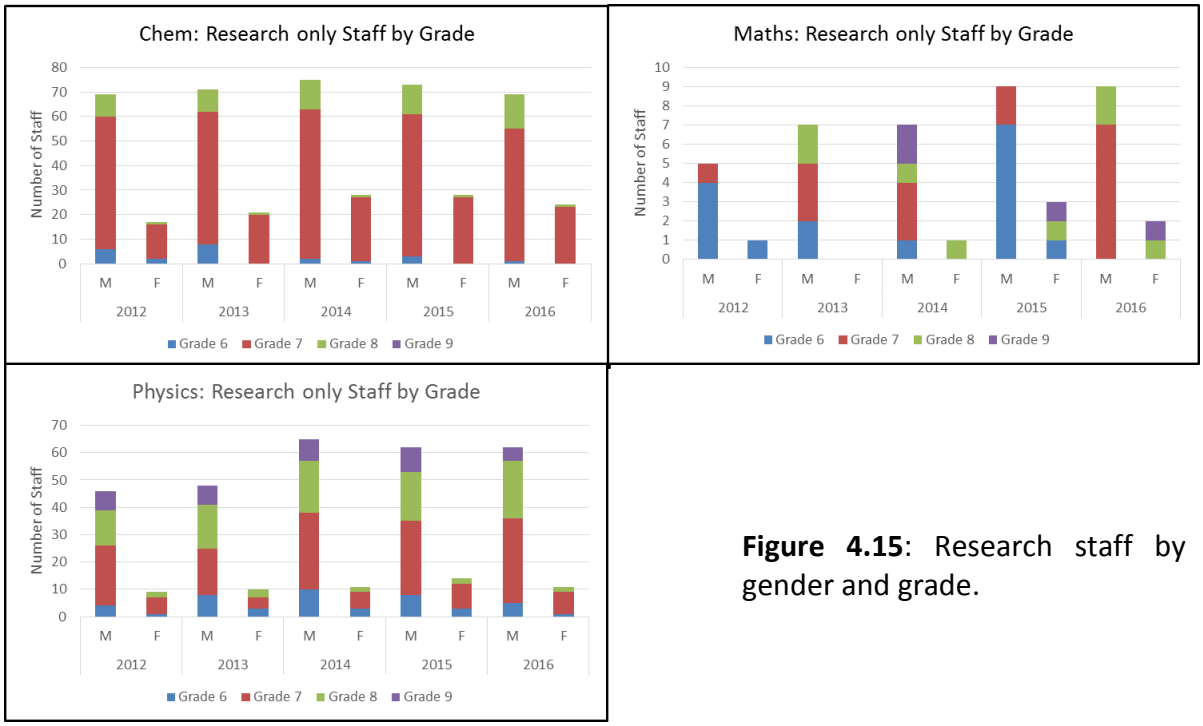


Figure 4.15: Research staff by gender and grade.

Fig. 4.16 shows academic pipelines for 2014-1017. At this scale they look somewhat similar.

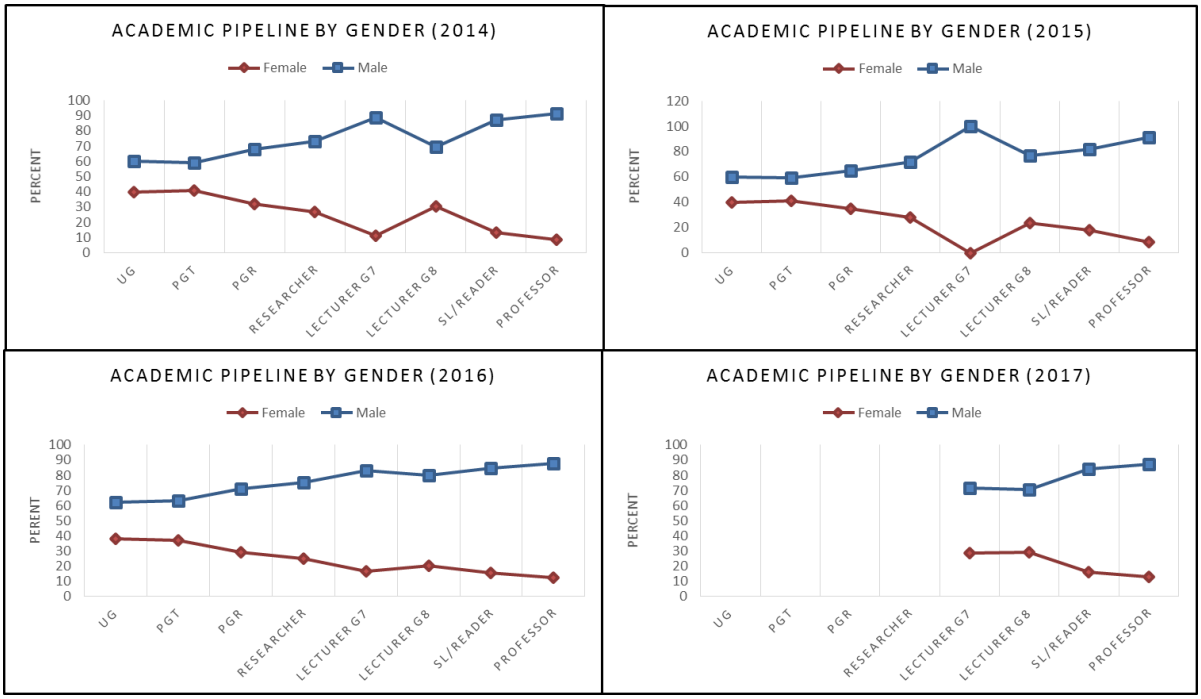


Figure 4.16: Career pipelines of academics in the School (2014-2017).

In **Fig. 4.17** we plot data from **4.16** on an expanded scale which shows that substantial progress is being made. Comparing 2014 with 2017 there are significant increases in female percentages for most grades.

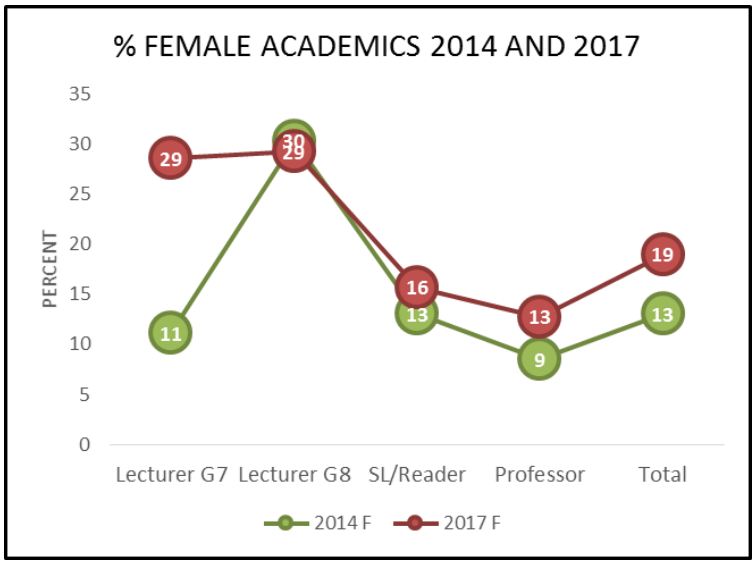


Figure 4.17: Percentage of female permanent (T&R+T&S) Academic Staff 2014 and 2017. Figures for 2017 are based on confirmed appointments (see also **Fig. 4.13**).

SILVER APPLICATIONS ONLY
Where relevant, comment on the transition of technical staff to academic roles.

In 2009, career paths were redefined at Liverpool. Previously designated "Experimental officers", who were employed to provide high-level technical/engineering support, were transferred to Researcher career paths. Technical staff are on the professional services career path. There have been two cases of senior researchers transferring to academic T&R roles since 2008. This requires a competitive interview.

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

Comment on the proportions of men and women on these contracts. Comment on what is being done to ensure continuity of employment and to address any other issues, including redeployment schemes.

Table 4.13 shows the female percentages of staff (%F/(M+F)) on fixed-term and permanent contacts for the past five years. For simplicity, the data includes both full-time and part-time staff.

Grade 6 fixed employees are PGR students on stipends who also act as demonstrators and or post-graduates giving tutorials. For this activity, they are on zero-hour contracts, as the number of hours they teach (up to a maximum of 6 hours per week) varies considerably. This is an improvement in terms of employment status, as prior to 2012 they were paid as casual workers. There are no academic or research staff on permanent grade 6 contracts.

	2012		2013		2014		2015		2016	
	Fixed	Perm.	Fixed	Perm.	Fixed	Perm.	Fixed	Perm.	Fixed	Perm.
Grade 6	24	0	5	0	32	0	22	0	32	0
Grade 7	20	27	17	25	5	16	27	10	25	13
Grade 8	15	19	2	17	1	24	6	19	14	19
Grade 9	0	14	0	12	1	11	0	16	20	15
Professorial	0	6	0	8	0	9	0	9	0	14
Total	20	15	24	14	39	15	23	14	25	15

Table 4.13: Percentage of women on fixed term and permanent academic contracts 2012-2017 (full-time and part-time numbers combined).

Fig. 4.18 compares data for the School to HESA data. For Maths and Physics, the % of female staff on permanent contracts is close to that of the sector. For Chemistry, it lags the sector, but will improve in 2017 with the new appointments discussed (see **Fig. 4.13**).

The low percentage of female fixed-term staff compared to the sector in all three disciplines could have a positive interpretation, where female staff are more likely to have permanency. However a negative interpretation is also possible; we will need to investigate this further.

Action 4.7: Investigate low % of women in fixed-term contracts compared to the sector and address the findings.

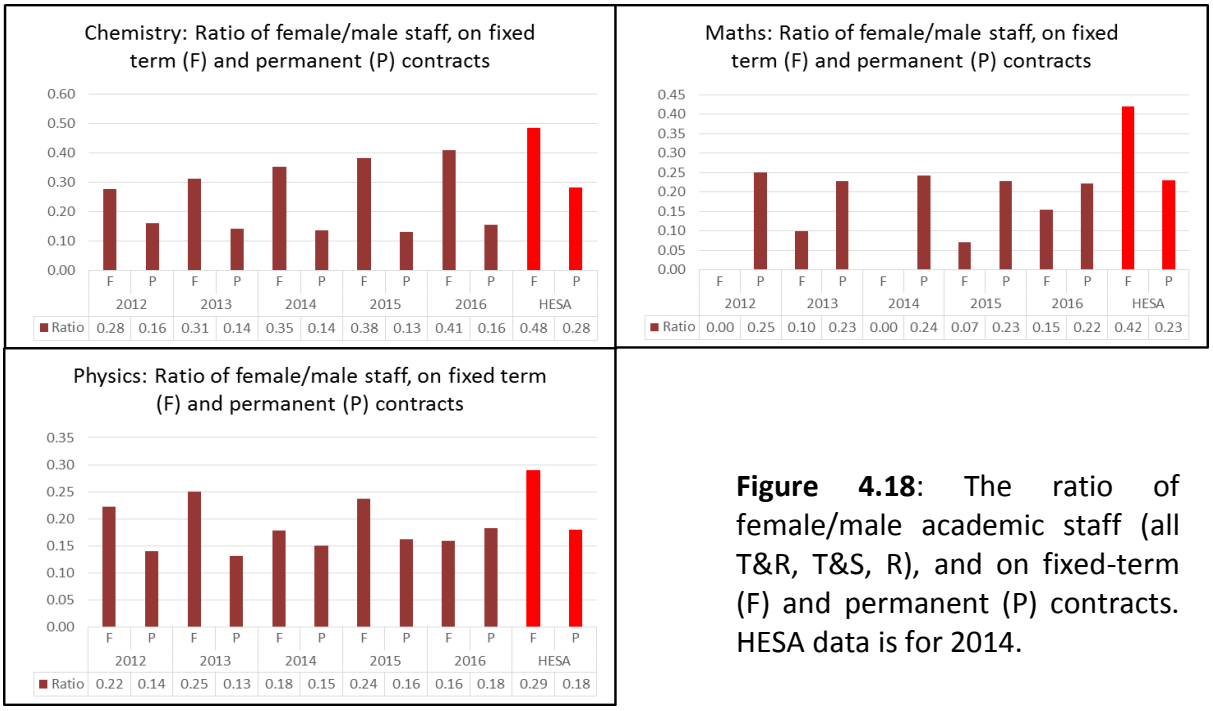


Figure 4.18: The ratio of female/male academic staff (all T&R, T&S, R), and on fixed-term (F) and permanent (P) contracts. HESA data is for 2014.

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

Comment on the reasons academic staff leave the department, any differences by gender and the mechanisms for collecting this data.

Fig. 4.19 shows academic leavers per year compared to HESA data. While the relative percentages of female leavers fluctuate, they are generally lower than the benchmarks.

The main group of leavers (typically 75%) are grade 7 research staff (PDRAs) who transition to other roles in academia or to industry. Exit interviews are held where possible to ascertain the reasons for leaving, which are commonly end of contract, career progression and retirement.

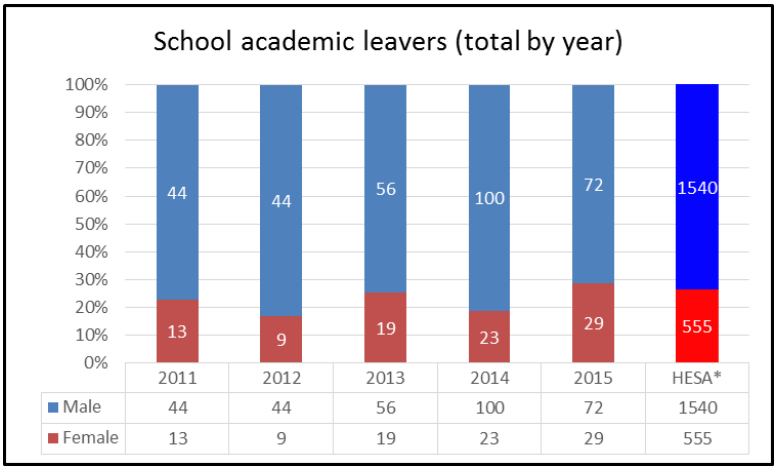


Figure 4.19: Leavers by gender (HESA data for 2013-14).

(iv) Professional Services staff by role and gender

Fig. 4.20 shows professional services staff by role and gender. As can be seen, the percentage of ratio of female to male staff is close to the benchmark figure from HESA data. Within this framework, there is evidence of a more traditional divide, with female staff occupying 85% of clerical positions and male staff occupying above 80% of technical positions.

As mentioned above, we have made many efforts to raise awareness of E&D and unconscious bias in our appointments procedures, including those in professional services. This picture is changing towards a better balance. The two latest clerical staff to be appointed in 2016 were male. In 2016 4 of 6 technical staff appointed to our Materials Innovation Factory (MIF) are female (see p. 41).

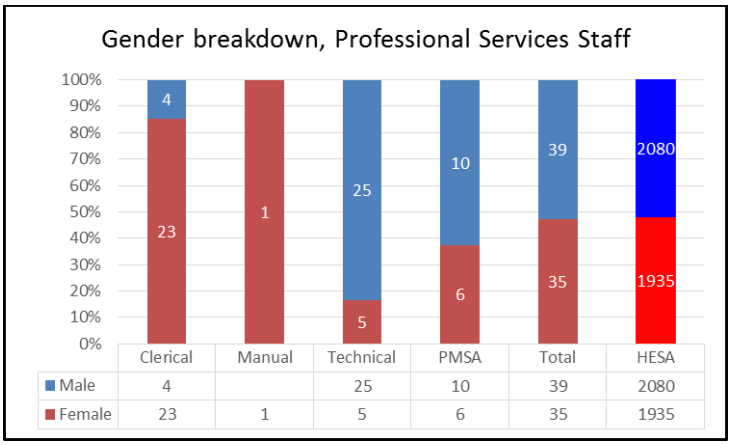


Figure 4.20: Professional services staff by role and gender (HESA data for 2013-14, PMSA: Professional Management and Specialist Administration).

(3031/2000)

5. SUPPORTING AND ADVANCING WOMEN'S CAREERS

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

5.1. Key career transition points: academic staff

(i) Recruitment

Break down data by gender and grade for applications to academic posts including shortlisted candidates, offer and acceptance rates. Comment on how the department's recruitment processes ensure that women (and men where there is an underrepresentation in numbers) are encouraged to apply.

Action 5 of our Bronze award was to revise of appointments policy and procedures. The following Actions were taken starting in summer 2014:

- Every appointment advertised with the possibility of flexible working arrangements. Any discussion of flexible working takes place post-offer, to avoid unconscious bias. We have not yet had direct evidence of the influence on this measure on recruitment. A
- Every interview panel having a minimum of two female members. This has been implemented, but we have had greater success in recruiting female academic staff when there are more female members. The appointments policy will be to 50% gender balance. The increase in workload will be accounted for in workload models. A
- At each panel meeting, members are reminded of unconscious bias. Attention is given to long-listing, short-listing and interview processes. While all panel members complete mandatory unconscious bias training, we have begun to circulate Royal Society guidance on unconscious bias also. We will adopt this as standard practice. A
- Following an all-male short-list for a position in physics in summer 2014, we developed and implemented a practice to encourage each panel to have a least one female candidate on each short-list for interview. We will formalise this practice into policy. A
- We carried out a gender-blind short-listing for an appointment in Financial Mathematics in 2015. (***Action 5v***). The short-listing panel was split into two groups; one received applications with names included, and the other group with names redacted. The results of this were neutral, with no discernible bias between the groups, which gave re-assurance about our procedures.
- Where we have used recruitment agencies, we have stipulated that effort be put into identifying female candidates (***Action 5vi***). In the most recent case (Head of Department of Mathematics) despite substantial efforts they were unsuccessful in identifying suitably experienced candidates. We will continue to make this stipulation. A

I

Case study: Materials Innovation Factory (MIF)

The MIF is a new multi-disciplinary laboratory opening in Feb. 2017. In 2016 we followed the above principles in a major recruitment of academic staff for this facility – the Head of School managed the process. 361 applications were received (64F; 18%); 47 were long-listed (12F; 26%); 28 were short-listed and interviewed (11F, 39%); 9 were appointed (4F, 44%) of which 7 (3F, 43%) appointments were in the School. Although there were not as many female applications as male, the quality was outstanding.

Tables 5.1 and **5.2** summarise recruitment data by gender and grade. We do not present data for T&S as there has been no external recruitment since 2013. From 2014 Laboratory demonstrators are appointed as T&S staff members at grade 6 on a fixed-term contract.

		Male			Female					
		Applic.	Shortlist	Appoint	Applic.	Shortlist	Appoint	% Appl. Female	% Shortlist Female	% Appoint Female
2011	Grade 6									
	Grade 7	459		10	103		5	18		33
	Grade 8	90		1	24		0	21		0
	Grade 9	0		0	0		0	0		-
	TOTAL	**549**		**11**	**127**		**5**	**19**		**31**
2012	Grade 6	102		6	20		1	16		14
	Grade 7	1039		19	230		4	18		17
	Grade 8	61		1	14		1	19		50
	Grade 9	1		1	0		0	0		0
	TOTAL	**1203**		**27**	**264**		**6**	**18**		**18**
2013	Grade 6	0		0	0		0	0		-
	Grade 7	900		21	280		4	24		16
	Grade 8	117		4	25		0	18		0
	Grade 9	4		1	0		0	0		0
	TOTAL	**1021**		**26**	**305**		**4**	**23**		**13**
2014	Grade 6	52	8	0	24	4	2	32	33	100
	Grade 7	638	56	19	225	15	9	26	21	32
	Grade 8									
	Grade 9									
	TOTAL	**690**	**64**	**19**	**249**	**19**	**11**	**27**	**23**	**37**
2015	Grade 6	46	3	2	21	1	1	31	25	33
	Grade 7	582	16	18	220	10	4	27	38	18
	Grade 8	29	0	2	12	1	1	29	100	33
	Grade 9									
	TOTAL	**657**	**19**	**22**	**253**	**12**	**6**	**28**	**39**	**21**

Table 5.1: Recruitment data for 2011-2015 by gender and grade for applications to Research posts (shortlisting data only from 2014).

		Male			Female			% Appl.	%	%
		Applic.	Shortlist	Appoint	Applic.	Shortlist	Appoint	Female	Shortlist	Appoint
2011	Grade 6									
	Grade 7	112		3	53		0	32		0
	Grade 8	25		1	3		1	11		50
	Grade 9									
	Professorial									
	TOTAL	**137**		**4**	**56**		**1**	**29**		**20**
2012	Grade 6									
	Grade 7									
	Grade 8	95		0	18		2	16		100
	Grade 9	26		1	1		0	4		0
	Professorial	11		1	0		0	0		-
	TOTAL	**132**		**2**	**19**		**2**	**13**		**50**
2013	Grade 6									
	Grade 7	39		1	12		0	24		0
	Grade 8	0		0	0		0	-		-
	Grade 9	5		1	3		0	38		0
	Professorial	2		0	1		0	33		-
	TOTAL	**44**		**2**	**15**		**0**	**25**		**0**
2014	Grade 6									
	Grade 7	14	5	2	2	0	0	13	0	0
	Grade 8	30	9	1	11	1	1	27	10	50
	Grade 9									
	Professorial	10	10	1	0	0	0	0	0	0
	TOTAL	**54**	**24**	**4**	**13**	**1**	**1**	**19**	**4**	**20**
2015	Grade 6									
	Grade 7	11	0	0	5	3	1	31	100	100
	Grade 8	98	0	1	13	0	0	12	0	0
	Grade 9	12	4	1	2	0	0	14	0	0
	Professorial	27	0	1	9	0	0	25	0	0
	TOTAL	**148**	**4**	**3**	**29**	**3**	**1**	**16**	**43**	**25**

Table 5.2: Recruitment data for 2011-2015 by gender and grade for applications to T&R posts (shortlisting data only from 2014).

Fig. 5.1 gives a breakdown at School level of this data for both Research and Teaching and Research Staff.

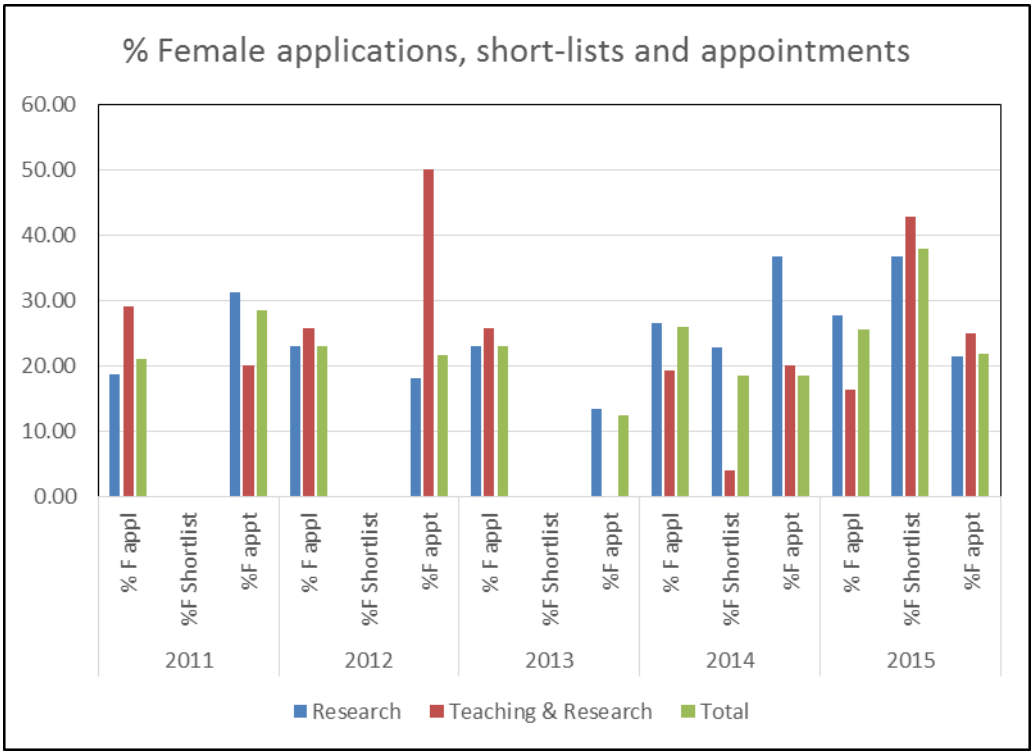


Figure 5.1: % female applications, short-lists and appointments in the school in the last five years, for staff, academic and total staff. No data available for short-listing in 2011-2013

There is substantial evidence that these actions are having major impact. In 2015 there was an increase in the percentage of female applicants short-listed, from typically 20-25% in the previous few years to between 35% and 43% (43% in the case of academic roles). Since our bronze application, 35% of T&R appointments have been female, compared to 10% in the preceding two years.

To consolidate and improve still further, we propose to strengthen our appointments procedures:

Action 5.1: We will aim for 50% women representation on each panel within a year.

Action 5.2: Change appointments policy to ensure circulation of the Royal Society Unconscious Bias document.

Action 5.3: Change appointments policy to require that excellent female candidates are identified and considered at the long-listing and subsequent stages.

Action 5.4: As a matter of policy, stipulate a search for female candidates to external recruitment agencies when employed.

(ii) Induction

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

Action 10 of our Bronze award involved revision and improvement of induction. School induction for all staff (academic and professional services) was consequently revised in 2015 and is now overseen by the School's Management Services team. A

Induction involves mentoring of new appointee by a number of experienced staff. A checklist is jointly worked through with the line manager to ensure that key areas are covered. Among the topics covered in departmental induction are: local Health and Safety, security, computing, mentoring, pensions, School services, and completion of the University's online training modules. These include: Equality and Diversity, Introduction to Health and Safety, Information Security, Bribery Act, Recruitment and Selection, and PDR.

Effectiveness of induction is reviewed via PDR reviews, surveys, annual reports from HR on completion rates, and direct feedback to the Management Services staff. As a result of such feedback, processes are refined. For example as a result of questions concerning relocation policy, staff handbooks, available on the School intranet, are now signposted during induction.

Our surveys show that for academic staff, the numbers who feel that "the induction process I went through when I joined the School/department was good" rose by 7% (9% M, 2% F) from 24% to 31%. Though these numbers seem low, the number of new staff joining since the last survey (who will have experienced the new induction) is just 21 out of 134. I

For research staff, the statement was "when I first started, the information was sufficient". This has shown a large decrease from 2014 (49% agree) to 2016 (22% agree). This demonstrates that this is an area which needs further attention, despite the recent overhaul of our procedures.

Action 5.5: Tailor induction procedures for research staff to address low satisfaction.

Induction event for PGR demonstrators.

In order to provide induction for PGR students demonstrating in UG laboratories and giving tutorials, the School organised two group induction events in 2015-16. Topics covered include Equality and Diversity and PGR processes. These events will be incorporated into an annual schedule.

Action 5.6: Establish an annual schedule for induction for PGR students.

(iii) Promotion

Provide data on staff applying for promotion and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

Every member of staff in the School has an annual Professional Development Review (PDR). The PDR reviewer may identify the individual as a potential candidate for promotion. Any individual can also apply for promotion independently.

Following the Bronze award we introduced a scheme whereby recently successfully promoted staff are available to mentor prospective applicants (male and female). *(**Action 6***). A

Mentoring sessions were also organised at University level and publicised as detailed in ***Action 7***. Panellists and recently promoted individuals talked about their experiences. Two SAT members took part as mentors. A

Additionally, the Head of School in consultation with Heads of Department, has identified and encouraged a number of female candidates, who were subsequently successful. A

Table 5.3 collates data on promotion applications and success rates by grade and gender. The percentages in the final columns refer to percentages of the total population e.g. %(F/(M+F)). **Fig. 5.2** plots the success rates for each gender.

		Male			Female			%	%	%
		Eligible	Applied	Success	Eligible	Applied	Success	Eligible	Applied	Success
2011	Grade 6 to 7	0	0	0	0	0	0	-	-	-
	Grade 7 to 8	5	0	0	4	0	0	44	-	-
	Grade 8 to 9	23	3	2	5	3	3	18	50	60
	Grade 9 to Reader	30	4	4	4	1	1	12	20	20
	9/Reader to Prof	30	0	0	4	0	0	12	-	-
	TOTAL	**88**	**7**	**6**	**17**	**4**	**4**	**16**	**36**	**40**
2012	Grade 6 to 7	0	0	0	0	0	0	-	-	-
	Grade 7 to 8	8	4	4	3	2	2	27	33	33
	Grade 8 to 9	25	5	4	5	0	0	17	0	0
	Grade 9 to Reader	31	1	1	6	0	0	16	0	0
	9/Reader to Prof	31	0	0	6	0	0	16	-	-
	TOTAL	**95**	**10**	**9**	**20**	**2**	**2**	**17**	**17**	**18**
2013	Grade 6 to 7	49	0	0	8	0	0	-	-	-
	Grade 7 to 8	8	1	1	3	2	2	27	67	67
	Grade 8 to 9	30	1	1	5	1	0	14	50	0
	Grade 9 to Reader	22	4	4	3	1	1	12	20	20
	9/Reader to Prof	13	0	0	2	0	0	13	-	-
	TOTAL	**122**	**6**	**6**	**21**	**4**	**3**	**15**	**40**	**33**
2014	Grade 6 to 7	21	0	0	4	0	0	-	-	-
	Grade 7 to 8	9	0	0	0	0	0	0	-	-
	Grade 8 to 9	24	2	2	8	3	3	25	60	60
	Grade 9 to Reader	23	4	4	2	0	0	8	0	0
	9/Reader to Prof	17	1	1	4	0	0	19	-	-
	TOTAL	**94**	**7**	**7**	**18**	**3**	**3**	**16**	**30**	**30**
2015	Grade 6 to 7		0	0		0	0		-	-
	Grade 7 to 8		0	0		0	0		-	-
	Grade 8 to 9		3	3		1	1		25	25
	Grade 9 to Reader		1	1		3	3		75	75
	9/Reader to Prof		1	1		2	2		67	67
	TOTAL		**5**	**5**		**6**	**6**		**55**	**55**

Table 5.3: School promotion applications and successes by gender and grade. Percentages in the right-hand columns refer to %(F/(M+F)). We do not have numbers of eligible staff for 2015.

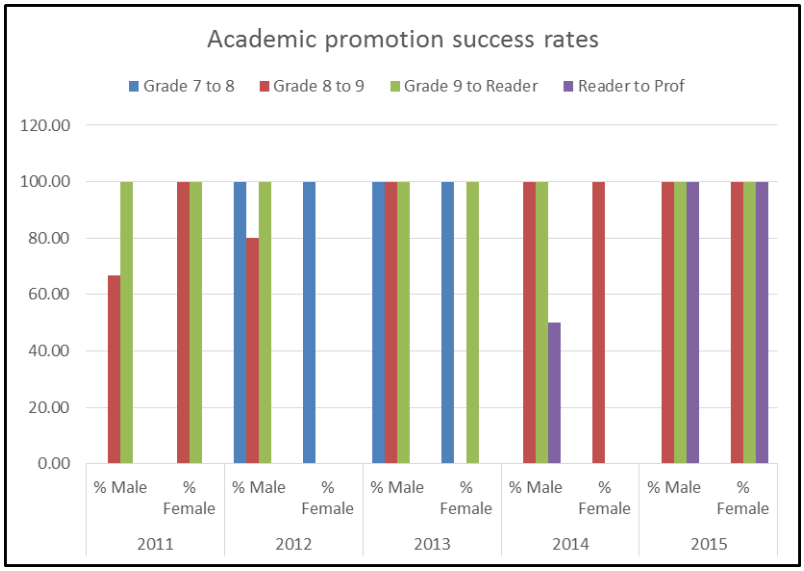


Figure 5.2: Promotion success rates by gender (% $F_{applied}/F_{successful}$).

Promotion Successes

The success of our actions is evidenced by the proportion of female applications (e.g. in 2015, 55% of applications were female) and by their successes (100% of female applicants were successful in both 2014 and 2015) and also by the results of the academic staff survey to the question "I have been encouraged and supported to apply for appointments, promotions and discretionary awards" where the percentage of female staff who agree increased from 72% to 80%.

The number of female Chairs has increased from 4 to 6 (50%), with the promotions of Helen Aspinall (Chemistry) and Marielle Chartier (Physics).

Despite these successes, there is evidence from our academic staff survey that understanding of the criteria for promotion is problematic: the number agreeing to the statement: "I understand the processes and criteria to attain promotions and discretionary awards" decreased from 68% to 62%, with M remained at 72%, but F decrease 64% to 60%. This may be due to changes in the application forms which are refined each year following Annual Review.

Action 5.7: Ensure the criteria for promotion are widely disseminated and explained, particularly to female colleagues.

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

Provide data on the staff, by gender, submitted to REF versus those that were eligible. Compare this to the data for the Research Assessment Exercise 2008. Comment on any gender imbalances identified.

Table 5.4 gives percentages of female staff submitted to REF2014. In RAE2008, the School submitted 100% of staff. University policy changed for 2014, with units urged to be selective. The overall percentage of female staff in the submission overall %(F/(M+F)) increased from 10% to 12%. However the percentage of female gender returned was 72%, compared with 84% for males. This difference is mirrored at Faculty and University level. The reasons are complex, as all papers submitted were subject to extensive internal review. Unconscious bias in the reviewing process cannot be excluded.

		RAE 2008		REF2014		*% of gender 2014*
		Eligible	**Submit'd**	**Eligible**	**Submit'd**	
University	**Male**	834	706	777	573	74
	Female	350	240	317	207	65
	% Female	30	25	29	27	
Faculty of Science and Engineering	**Male**	262	250	263	215	82
	Female	36	34	50	37	74
	% Female	12	12	16	15	
School of Physical Sciences	**Male**	108	106	118	99	84
	Female	12	12	18	13	72
	% Female	10	10	13	12	

Table 5.4: Submission rates to RAE2008 and REF2014 by gender.

By circulating Royal Society guidelines to panel members, we will ensure that there is awareness of unconscious bias in making decisions on returns for REF2021.

Action 5.8: Internal reading panels will be trained in unconscious bias for REF2021.

SILVER APPLICATIONS ONLY

5.2. Key career transition points: professional and support staff

(i) Induction

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

(ii) Promotion

Provide data on staff applying for promotion, and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

(i) Induction

The induction framework for Professional Services staff broadly follows that for academic staff described in **Section 5.1** above. In addition to generic induction, the line manager identifies any necessary role-specific training. For example, a new member of the

Management Services team, Pauline Anderson, shadowed the team leader to gain a full understanding of her role and to meet with relevant colleagues.

Induction in the professional services staff survey was addressed through the question "I was adequately supported by colleagues when I started work in the School/department" 83% of staff agreed with this statement (75% F, 100% M), and 9% disagreed.

(ii) Promotion

We cannot provide data for applications for promotion as career progression in Professional Services roles differs from Academic roles. For professional services, progression can be achieved in two ways:
(a) There is a significant change to an existing role and the role is reassessed
(b) The member of staff is appointed to a role where the responsibilities are increased.

There is considerable scope for such progression both within the School and in the wider University. Recent examples include:

- Gillian McLaren regraded from G6 to G7 as Research Team leader as her responsibility has grown (route (a))
- Jane Remmer appointed as Management Services Team lead (G7) from a Research Support role (G6) (route (b))

Staff are supported with their career development and encouraged to apply for progression. The Head of School and School Manager arrange mock interviews and review staff applications. For example Louise Hobson who was at Grade 7 was encouraged to act as interim School Manager (G8) to cover a maternity leave in another School, and was subsequently appointed as School Manager in this School.

5.3. Career development: academic staff

(i) Training

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

Action 12 of our Bronze plan highlighted training opportunities as an area of concern. The School has worked with the University to arrange training programmes for post-doctoral researchers over the past three years.

These have included

May 2015 Training in research leadership – Prof Andy Cooper (Attendees: 42F - 54M)
Feb 2016 Proposal refereeing and review - Mock Panel exercise (9F - 23M)
April 2016 Applying for a Fellowship (9F - 21M)

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Occasionally staff will request additional bespoke training, for example in 2015 the School funded Dr. Rebecca Doherty to attend an event "Media Masterclass" given by Dr Maggie Aderin-Pocock and funded a further place on this event in 2016.

In addition we have highlighted training opportunities available to academic staff through the University Organisational Development team. Numbers of staff undergoing university training include: A

Faculty Education leadership Programme 2016 (3F, 3M) I
Management Essentials (2014-2016) (6F, 1M)
Research Team Leader (2013-2016) (4F, 8M)
Faculty Academic Leadership Programme Alum Event (2016) (3F,4M)
Springboard - Development programme for women (2016) 2F
University Mentoring Training (2013-2016) (8F, 5M)
Aurora – the Leadership Foundation (2014-2016) (5F)

The staff survey showed positive responses to questions regarding training with increases in positive responses to the statements "I have been encouraged to develop new skills and I receive appropriate support and training" (1%) and "Where I have taken up training opportunities, I have found them useful" (11%). I

We have also worked with the University to increase the number of places on the "Teaching for Researchers" course from 10 p.a. to 40 p.a. due to increased demand. Our survey of PDRAs indicates a 6% increase in agreement that training opportunities were useful and a 7% increase in those reporting that their supervisors have encouraged them to take up opportunities. I

On the other hand, awareness of training opportunities was down by 4%, and there was a 7% decrease in those who felt able to take up the identified opportunities. ⊘

Action 5.9: Generate more role-specific training for PDRAs, better communication of opportunities and buy-in of supervisors as to its value.

(ii) Appraisal/development review:

Describe current appraisal/development review schemes for staff at all levels, including postdoctoral researchers and provide data on uptake by gender. Provide details of any appraisal/review training offered and the uptake of this, as well as staff feedback about the process.

As mentioned above appraisal and career planning is carried out in the annual Professional Development and Review (PDR) meetings. PDR guidance and online training are provided for staff and reviewers. The topics for discussion in a PDR meeting are the four areas of role, contribution and performance, plans and priorities including progression, and development and support.

Action 9 in our Bronze action plan was to reinvigorate this system. This has been accomplished by asking our Professional Services Management Services team to take over the organisation of PDR in the School. A

This has been very effective: the overall School completion rate rose from 74% in 2014 to 85% in 2015; we are on course for 95% completion in 2016. I

However our surveys reveal a mixed picture concerning the value of the process. For academic Staff there was a 10% increase in those agreeing that the PDR was useful; for researchers, there was a 2% decrease.

Action 5.10: The School will work with Faculty to develop a more meaningful PDR format for PDRAs.

(iii) Support given to academic staff for career progression

Comment and reflect on support given to academic staff, especially postdoctoral researchers, to assist in their career progression.

This area has emerged as a key area of activity for the School, mainly thorough the initiative of the post-doc community. As mentioned before, a Researcher forum was established in 2014. Working with the Forum, the School has organised a programme of career development events. These have included:

10th Nov 2015	Start-up stories: becoming an entrepreneur
Sept. 2016	"Academia into Industry", where previous Liverpool PhD graduates gave talks on their experiences of building careers in industry. This was attended by 30 researchers (40% female).
July-Aug 2016	Small group career coaching for PDRAs. 6 sessions.

One participant commented on the coaching event:

> "It was incredibly helpful to hear about other people's feelings/issues about their post doc roles. Being able to relate my own problems to other people in the group who, more often than not, had suffered similar experiences was a huge weight off my chest." I

In mid-2016 the Researcher forum initiated some focus groups to identify areas where further improvements can be made, and these have been captured in a report to Faculty. The Chair of the Researcher Forum, is also a member of a University Task and Finish group on Researcher Development.

The following is a quote from this report:

"The School of Physical Sciences was particularly praised for the range of events put on to support the research development of PDRAs, such as grant writing workshops and support for writing fellowship applications, as well as the support PDRAs received in developing its own network".

Post-doctoral development award

In 2016, under ***Action 14ii*** a Post-Doctoral Development award competition was inaugurated. The goal was to develop an independent idea or collaboration. £6k was shared among 3 winners (2M, 1F). The PDRA network commented:

> "Recognition events are … highly regarded by PDRAs – one example of good practice is the School of Physical Sciences Research Collaboration Event which is supported by a pump-priming prize".

Action 5.11: Make this award an annual recognition event.

Samantha Colosimo introducing the Event organised in Sept. 2016 "Academic to Industry".

The results of our survey of research staff are positive. Those agreeing with the statement "The level of support for career progression...is good" saw a 6% increase overall, (10% for F).

In 2016 we presented our work to EPSRC during a programme team visit. They now wish us to work with them in helping them understand how they can contribute to the development of the researchers they fund. This engagement is an example of how we believe we can achieve a national profile.

Action 5.12: Develop connections with EPSRC to share Liverpool good practice in the research community.

Permanent academic staff have access to several mechanisms to support their career progression. These include the University mentoring scheme, the ECR mentoring scheme, the Centre for Lifelong learning which runs development events and the Organisational Development unit of HR which also runs targeted programmes for both research and teaching. For example, in 2014 a total of 54 opportunities for career development training were communicated to staff.

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

Comment and reflect on support given to students at any level to enable them to make informed decisions about their career (including the transition to a sustainable academic career).

Undergraduate students are assigned an academic advisor and female students can now choose a female advisor, ***Action 14***. The advisor is their primary point of contact for advice on programme and module choices and exam feedback, but can also provide advice on career options, and arrange appointments for students at the University's career's service.

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PGR students have access to a very wide range of training opportunities, recently revised and updated through the Liverpool Doctoral College (LDC). This includes careers advice and training; for example all PGRs can now apply for a 15-day placement outside of academia. PGR students also have access to any development workshops run by the School (e.g. see below (v) Applying for Fellowships – ***Action 14i***).

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

Comment and reflect on support given to staff who apply for funding and what support is offered to those who are unsuccessful.

Mentoring for research grant applications is the responsibility of the Research Cluster leader. Early stage advice is available to any member of academic staff, and often a proposal is read and commented on by several times before submission.

For major Fellowship applications, support is also provided by the University's Research Policy unit. For example, mock panels are organised for RCUK and ERC fellowship applications. The University also operates a Peer Review College when selection of a single University bid to an external call is required.

Support is in general effective; the School is the second most successful in the University. New awards in 2016 totalled £26m. The School has 6 European Research Council Fellowships and numerous RCUK Fellows.

Unsuccessful grant applicants are encouraged to request feedback from the external organisation, and are mentored by the School research lead (Chris Lucas) and Research Policy where appropriate, on alternative strategies. For example, following an unsuccessful bid to EPSRC for a programme grant in 2014, a team in chemistry worked with the School and central university to improve the bid, which was subsequently successful following resubmission.

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The School has recently established a Research and Impact Sabbatical Policy with an aim of supporting research careers by providing one semester every 5 years free of teaching and administrative duties. This now needs to be implemented in a fair and transparent way, taking into account gender and career-stage considerations. A

Action 5.13: Fair and transparent implementation of Research and Impact sabbatical policy.

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5.4. Career development: professional and support staff

(i) Training

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

(ii) Appraisal/development review

Describe current appraisal/development review schemes for professional and support staff at all levels and provide data on uptake by gender. Provide details of any appraisal/review training offered and the uptake of this, as well as staff feedback about the process.

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

Comment and reflect on support given to professional and support staff to assist in their career progression.

(i) Training

The University's HR department offer a comprehensive package of training opportunities to enable a member of staff to reach their full potential. This comes in the form of training courses, mentoring, a professional development toolkit and "how to" guides.

In addition the School encourages staff to attend courses that may be specific to their roles, for example the Student Experience Team attend occasional workshops on Student Mental Health awareness. As well as a development opportunity for the member of staff, it also assists them in their role. The University also has a number of on-line training modules, e.g. Equality and Diversity (85% uptake in the School in 2016) and Information Security (60% uptake in 2016).

However while such support has been available, it has largely been taken up on the initiative of the individual member of staff.

Action 5.14a: The School will make one training or development engagement a year an expectation for professional services staff over the next three years.

(ii) Appraisal/Development review

All staff have an annual PDR where the member of staff and their line manager discuss and plan for development or support in the coming year. PDR reviewers undertake compulsory online training and may seek advice from their line manager as appropriate. In our survey, 53% of staff agree their PDR was useful, 31% neutral and 16% disagreed. The uptake in 2016 to date is 93% with no discernible gender difference. Staff can also discuss the possibility of an additional increment or an Exceptional Performance Award.

Action 5.14b: The School will undertake a task and finish project to understand and address the relatively low satisfaction rate of 51%.

Table 5.5 shows data for awards for the past three years. The low numbers reflect stringent University criteria for these awards.

	Awarded ECA		Awarded AI/CP	
	Female	Male	Female	Male
2013	2	0	0	0
2014	0	0	0	0
2015	0	0	2	0

Table 5.5: Professional Services staff awarded an Exceptional Contribution Award (ECA), Additional Increment (AI) or Contribution Point (CP).

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

Professional services staff are encouraged to develop their careers through attendance at development events. This will be made an expectation each year (**Action 5.14a**). The University HR department has a portfolio of tools that individuals can use to aid personal development. Staff are encouraged to put together a Personal and Professional Development Plan after reflection on their learning and development needs. There is also a large University wide Mentoring and Mentee network, of which 8 female and 3 male staff within the school are mentors.

An example of an area of particular success has been in the development of apprentices. 7 apprentices have been employed by the School in the period 2012-2016 (3M, 4F). 4 of the 7 apprentices achieved employment in the University after completion (including 3F of which 2 are employed in the School). Katherine Holland, a workshop apprentice in Chemistry, was University apprentice of the year in 2013.

Katherine Holland, University Apprentice of the Year 2013

5.5. Flexible working and managing career breaks

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

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

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

Action 19 of our bronze action plan was a number of measures on support for maternity/paternity leave.

The School established a role of flexible working adviser (Kamila Zychaluk) who provides informal advice to anyone in the department on where to find detailed information, and also on how to prepare for maternity and parental leave. A

She is consulted by nearly every maternity case and occasionally regarding paternity rights. Anna Slater helped initiate a Parents Network for all university staff where new parents can seek help and advice. I

The School follows University maternity policy, but discussions take place to ensure that detailed arrangements (such as cover, Keep-In-Touch days and contact during leave) are tailored to the circumstances and needs of the individual.

For Professional Services, the cover is normally arranged by advertising the fix-term post either internally or externally, depending on the needs. Individuals are encouraged to discuss their plans for maternity leave and return to work at an early stage for better planning for both the School needs and individual's career.

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

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

The University provides up to twelve paid keep-in-touch days for staff on maternity leave. The School encourages staff to take up this offer.

In addition to the standard University maternity pay offer, the school has provided additional funds for PDRAs and PhD students whose standard contracts did not include adequate maternity pay. For example, one of the PhD students in Maths department was given 6 I

months' worth of funding as a living allowance during her maternity leave. Extra funding was provided for a PDRA in Chemistry to extend her contract as the external funding did not allow for maternity leave. (***Action 19***)

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

Explain what support the department offers to staff on return from maternity or adoption leave. Comment on any funding provided to support returning staff.

The School is committed to flexibility in helping staff to return to work after a period of maternity or adoption leave. The individuals discuss their needs with their line manager and academic staff can request a period of relief from teaching and admin duties after return to work. Professional Services staff are normally expected to return to the same role.

Many members of staff choose to reduce their hours for a period of time after maternity leave. This is again considered on case-by-case basis and most requests are accepted.

(iv) Maternity return rate

Provide data and comment on the maternity return rate in the department. Data of staff whose contracts are not renewed while on maternity leave should be included in the section along with commentary.

Table 5.6 shows data for maternity leave in the School for the past available five years. The numbers of staff taking maternity leave are small: between 1 and 3 people a year. In the period 2011-2015, one person did not return to work and one person left work within 6 month of returning to work.

	N# who went on Mat leave	N# off for Stat Mat Leave only	N# off for Stat + Add Mat Leave	N# who returned to work	N# who didn't return to work	N# still in work + 6 months	N# still in work + 12 months
2011	3	2	1	2	1	0	0
2012	2	2	0	2	0	1	1
2013	3	3	0	3	0	3	3
2014	1	1	0	1	0	0	1
2015	3	0	3	3	0	2	0
	12	8	4	11	1	6	5

Table 5.6: Maternity Leave and returns per calendar year.

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

See **Table 5.6**. Since 2012 the retention has been 100%. The University only provides data for retention up to 12 months, so we cannot comment staff remaining in employment after 18 months.

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

Provide data and comment on the uptake of these types of leave by gender and grade. Comment on what the department does to promote and encourage take-up of paternity leave and shared parental leave.

Table 5.7 presents data for paternity leave in the School by grade.

Researcher G7	Researcher G8	T&R Staff G8
1		
	1	
	2	
1		1
2	3	1

Table: 5.7 Paternity Leave (Calendar Year). No instances of shared parental, adoption, and parental leave are recorded.

The numbers of people taking paternity leave are very low. All of these periods of leave were taken by staff on either grade 7 or 8. Shared parental leave has only been available for parents of children whose due date was on or after 5th April 2015, and there was no uptake of shared parental leave in 2015. The School newsletter is used to promote these opportunities, which are also discussed in any conversations with our flexible working advisor (see p.56).

(vi) Flexible working

Provide information on the flexible working arrangements available.

Any member of staff can apply for flexible working arrangements. Options include reducing the number of days, reducing working hours, working from home. Anyone with caring responsibilities can submit request to restrict their teaching timetable to allow for school pick-ups etc.

In the past, the flexible working arrangements had been mostly used by women after returning from a period of maternity leave. However, in recent years there have been several examples of male staff taking advantage of flexible working options e.g. Prof. Lasse Rempe-

Gillen in Mathematics is working at 0.6 FTE to share caring responsibilities with his partner. Flexible working arrangements are also used by staff who wish to work part-time for the last few years before their retirement; for example, Prof. Mary Rees has been working at 0.5 FTE in the last 5 years before planned retirement.

The results of our recent survey show that there has been increase of 21% in awareness and appreciation of flexible working options amongst academic staff. For women the increase was 40%.

Our PDRA survey is less positive about flexible working: "I feel I would have full support for flexible working/career breaks" 33 % agree/strongly agree (43 % neutral), down from 47 % in 2014 (37 % neutral). Only 25 % of F PDRAs agree/strongly agree in 2016, down from 52 %.

Action 5.15: Work with the Researcher forum to understand the cause of this decrease, and put in place appropriate actions to address this.

For Professional Services, the requests for flexible working need to be balanced with operational needs. In particular, if the request is to reduce hours, then a part-time replacement needs to be employed. There are several staff with such arrangements in place.

The Professional Services survey result for the statement "I feel I would have full support for flexible working from my line manager" is 53% agree, and 19% disagree. The response to the statement "The School/department offers excellent support for caring or family responsibilities through flexible working hours and career breaks" is less positive, with 44% of staff agreeing and 23% disagreeing.

Action 5.16: We will initiate focus groups/feedback mechanisms to understand these responses and then ensure options for flexible working are clearly understood by staff.

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

Outline what policy and practice exists to support and enable staff who work part-time after a career break to transition back to full-time roles.

Any member of staff who is working part time can apply to return to full-time employment. In many cases, the flexible working arrangement is for a specific period of time only. A recent example is Dr Marielle Chartier, who was working at 0.8 FTE after returning to work from a maternity leave in 2007 and returned to full-time working in 2015.

For Professional Services, the requests need to be balanced with operational needs. Thus it may not possible to increase hours in the current role. In such cases the role may be changed to encompass other duties, or the individual may move to a different role.

5.6. Organisation and culture

(i) Culture

Demonstrate how the department actively considers gender equality and inclusivity. Provide details of how the Athena SWAN Charter principles have been, and will continue to be, embedded into the culture and workings of the department.

Laura Harkness-Brennan presenting at the LivWISE Christmas event in Dec. 2015.

The School is a founding participant in LivWISE, see p.70. Staff from the School have participated in many LivWISE events, for example in the Annual Christmas lectures.

Wellbeing events for staff and students in the School were organised to coincide with Health & Wellbeing week in May 2016. A wellbeing walk was held during lunch-time and a relaxation hour also took place. Social events are held in each department, ranging from summer bar-be-ques to winter get-togethers, to Christmas meals. A

Networking has been addressed under ***Action 11***. Networking opportunities are now offered before each seminar/colloquium/development event. Female staff are also encouraged to attend LivWISE events where further networking opportunities are available. A

Our surveys provide insight into how our culture has changed over the past couple of years and what remains to be done to improve. Our surveys in general show positive results:

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Networking improvement

In response to the statement "The level of networking *within* staffing groups in the School/department is sufficient" there was an increase in those agreeing of 6% (academic staff), 15% (research staff) and 5% (PGR students). The response to the question "The level of networking *between* staff groups in the School/department is sufficient" saw increases of 4% (academic staff), 5% (PGRs) and a 2% decrease for PDRAs.

Responses to questions around friendliness were mixed, with a 3% increase in agreement for academic staff, but a 26% decrease for PDRAs and a 7% decrease for PGRs. ⃠

These results give a steer that more work needs to be done in developing a friendly culture in the school particularly among non-academic staff and PhD students. We will work to provide more opportunities for all staff and PhD students to better understand each other's role and foster a better sense of community.

Action 5.17: Provide more opportunity for all staff and PhD students to interact in an informal setting, through the establishment of School and departmental forums.

(ii) HR policies

Describe how the department monitors the consistency in application of HR policies for equality, dignity at work, bullying, harassment, grievance and disciplinary processes.

Describe actions taken to address any identified differences between policy and practice. Comment on how the department ensures staff with management responsibilities are kept informed and updated on HR polices.

The implementation of HR policies is monitored at University level, and that information is fed back to Schools and departments as appropriate, primarily through the Faculty HR Business Partner. Another significant tool for is the triennial University Staff Survey, which gives an indicator of the perception of how policy is being put into practice. For example, as an outcome of the last survey, we identified Bullying and Harassment as a target area for raising awareness and had an e-mail campaign to bring this to the attention of our staff.

The School also actively encourages staff involvement in University level HR advisory groups. Two of our professional services staff, Joanna Seed and Vicki Reynolds, are Bullying and Harassment advisors. Two members of staff in the School attended a two-day Mental Health First Aid course in September 2015. Any significant changes to HR policies are disseminated at the monthly University Leadership Forum. For example the introduction of compulsory on-line training was first discussed in this forum in 2014.

(iii) Representation of men and women on committees

Provide data for all department committees broken down by gender and staff type. Identify the most influential committees. Explain how potential committee members are identified and comment on any consideration given to gender equality in the selection of representatives and what the department is doing to address any gender imbalances. Comment on how the issue of 'committee overload' is addressed where there are small numbers of women or men.

The Physical Sciences Leadership Team is the central committee in the School. The appointments process has been a mixture of advertisement and invitation. The considerations in selecting people are ability, providing a development opportunity, and gender balance.

Our Leadership team currently has 36% female representation (up from 33% at the time of our Bronze application).

We have worked to ensure that women are represented appropriately on departmental committees. (***Action 15*** of our Bronze award). This is evidenced by women membership of our department committees (see **Table 5.8**). Generally female membership is greater by percentage than the number of eligible candidates. However in a small number of committees there is still no female representation. We will rectify this within 12 months. Committee overload is addressed through the workload model mechanism and in PDR discussions where ad-hoc committee invitations (appointments panels etc.) can be compensated for.

Action 5.18: Ensure there is female representation on all departmental committees.

		M	F	%F
School	Leadership Team	9	5	36%
	Senior Leadership Team	4	1	20%
	Knowledge Exchange and Impact	6	3	33%
	Learning and Teaching	7	2	22%
	Research Strategy	5	1	17%
	T&R + T&S staff	113	21	16%
Chemistry	Executive Group	16	5	24%
	Undergraduate recruitment	6	4	40%
	Learning and Teaching	8	0	0%
	Honours Panel	6	2	25%
	Research Committee	12	3	20%
	T&R + T&S staff	37	7	16%
Mathematics	Executive Committee	10	3	23%
	Research Committee	6	2	25%
	Learning and Teaching	9	3	25%
	Research Working Group	2	2	50%
	Curriculum Working Group	5	1	17%
	Student Experience Committee	8	3	27%
	UG Progress Committee	7	2	22%
	Board of Studies	13	8	38%
	T&R + T&S staff	39	8	17.0
Physics	Executive Group	3	0	0%
	Research and Impact Board	7	3	30%
	Student Experience Committee	4	1	20%
	Postgraduate studies	5	1	17%
	Learning and Teaching	9	0	0%
	REF	6	2	25%
	Admissions and Recruitment	4	4	50%
	T&R + T&S staff	37	6	14.0

Table 5.8: Membership of the School and Departmental Committees (Oct. 2016).

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Increasing engagement

The results of our surveys indicate positive progress among staff and PhD students in feeling they may influence decision-making processes and raise issues. There were increases in positive responses to the statement "There are mechanisms present for me to air any issues I have" of 24% (academic staff), and 11% (research staff)". 56% of professional services staff agreed, with 18% disagreeing. There were also increases in those agreeing to the statement: "I have the opportunity to influence the decision-making processes within the School and/or department" for academic staff (7%), research staff (8%) and PGRs (4%).

(iv) Participation on influential external committees

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

Under ***Action 8*** the School has been proactive in nominating women to influential committees and programmes. A

Some examples of successful nominations include: I

Prof. Rasmita Raval	EPSRC Physical Sciences Strategic Advisory Team
Prof. Marielle Chartier	Member of the STFC Women in SET Focus Group
Prof. Tara Shears	Nominated as Faculty of Science and Engineering RCUK Public Engagement with Research "Champion"
Dr. Anna Slater	Co-Chair of the National University Research Staff Association
Dr Laura Harkness-Brennan	University Senate
Dr Corina Constantinescu	University Senate Joint Council-Senate committee to recruit the next vice-chancellor.

Under **Action 8** we have also encouraged women to apply for leadership programmes. A

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- Five women from Physical Sciences have been nominated by the School and accepted on the Leadership Foundation Aurora programme (Corina Constantinescu, Gita Sedghi, Laura Harkness-Brennan, Marielle Chartier, Carmen Boada-Penas and Anna Slater). One was funded by the School due to insufficient funding available at University level.
- Four women (Rachel Bearon, Anna Pratoussevitch, Corina Constantinescu, and Helen Aspinall) were nominated to the Faculty-run "Pre-Head of Department" programme in 2015 and 2016. Feedback from this programme has been consistently high.

(v) Workload model

Describe any workload allocation model in place and what it includes. Comment on ways in which the model is monitored for gender bias and whether it is taken into account at appraisal/development review and in promotion criteria. Comment on the rotation of responsibilities and if staff consider the model to be transparent and fair.

Action 16 concerned transparency and fairness in workload allocation. The workload models were made transparent in 2014 **(*Action 16i*)**. In implementing this, the School has evolved towards a unified workload model so that contribution may be compared across departments as well as within each department ***(Action 16ii)***. This now takes into account a wide range of activity including outreach work and committee service (***Action 16iii, 16iv***). Individual circumstances are taken into account in reviewing workload, including allowance for early career researchers, and gender issues. For example, staff returning from maternity leave are given a reduced load to help with the transition to normal activity. The output of the model is interrogated each year to identify the average contribution, and for gender and other forms of bias. A

The School did investigate a commercial solution which provided a common framework but decided against this based on expense and estimation of utility. In the meantime, the University has set up a working group to specify and implement a University-wide solution. The Head of School is a member of this group. Consequently the School has volunteered to be one of three participating Schools in a pilot of the new University model in 2017.

Action 5.19: The School will pilot the next University model (2017 academic year) and fully implement when available (2018 academic year).

(vi) Timing of departmental meetings and social gatherings

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

Core teaching hours are between 09.00 and 17.00 Monday to Friday. These are the hours which are time-tabled during semester through the University's centralised time-tabling system. However before time-tabling each year individuals are contacted to assess individual requirements which can then be accommodated. This may include restricted hours (10.00-16.00) to allow for family-related activities. It also takes into account individuals working on a part-time basis, (e.g. Rachel Bearon, Senior Lecturer, Mathematics, 0.8 FTE; Kamila Zychaluk, Lecturer, Mathematics, 0.8 FTE; Lasse Rempe-Gillen, Professor, Mathematics, 0.6 FTE).

Action 17 from our Bronze award was scheduling of meetings appropriately. We have adopted guidelines for timetabling of business meetings in the 10.00-16.00 window. A

Mathematics and Physics staff meetings were previously held at 4pm slots; this has now been changed. Physics meetings are 1st Wednesday of each month at 2pm, and Mathematics I

meetings are at 1pm on Wednesdays. Chemistry meetings are held at lunchtimes. Seminar programmes are now also held with the 10am-4pm window.

Social gatherings are nearly always time-tabled during the working day. These include pre-seminar socials, coffee and doughnuts in mathematics at 11am on Wednesdays, informal morning coffee in each department and departmental afternoon barbeques.

(vii) Visibility of role models

Describe how the institution builds gender equality into organisation of events. Comment on the gender balance of speakers and chairpersons in seminars, workshops and other relevant activities. Comment on publicity materials, including the department's website and images used.

The School has worked to ensure that students at all levels experience female role models (***Actions 2i, 2ii, 2iii, 2v***). Female role roles are highlighted in all three disciplines on the Liverpool Women in Science and Engineering Website, and female students are given the option to choose a female academic advisor (***Action 13***). A

Celebrating Success

- The School hosted an event "Celebration of Women in the Physical Sciences" in November 2014 where Prof. Mary Rees (FRS, Maths), Prof. Tara Shears (Physics) and Prof. Rasmita Raval (Chemistry) spoke about their careers and experiences.
- Dr Laura Harkness-Brennan (Physics) was nominated for the Women of the Future Awards in the "Science" category in 2015. This is a prestigious national competition. Laura was short-listed and subsequently "highly-commended". The story was covered in University news and in school and departmental newsletters.
- Dr Anna Slater (Chemistry) was nominated for University's "Celebrating Success" awards in the category "Enhancing University Life". Anna was short-listed and attended the awards dinner hosted by the Guild of Students.
- The School nominated Dame Athene Donald (Cambridge Physics) for an Honorary Doctorate in 2015 and she spoke at the Graduation ceremony. She will return to give a seminar in 2017.

As a very visible female role model in Physics, Laura Harkness-Brennan has built a research group of 6 postgraduate students, including 4 female PGRs. A

Dr. Laura Harkness-Brennan attending "Women of the Future" awards in Nov. 2015.

Action 18 for our Bronze award targeted a lack of female speakers in our seminar programmes. The Head of School contacts all seminar organisers each year encouraging balanced seminar speaker lists and offering extra funding to bring in speakers from beyond our usual UK catchment area. This has had direct impact: for example our Flagship annual Barkla lecture in Mathematical Physics (previously given by male speakers including 4 Nobel Prize winners) was given in 2015 by Prof. Katherine Freese from Nordita in Stockholm.

Fig. 5.3 below gives the numbers of male and female speakers in our Fröhlich lecture series, our main Physics department colloquium programme. The upturn in percentage of female speakers from 2014 onwards is direct evidence of the impact of Athena SWAN.

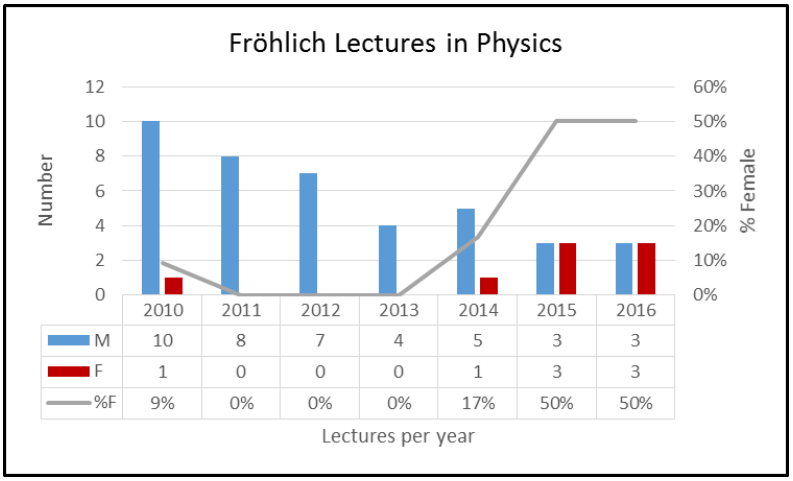

Fig: 5.3 Numbers and % of female Fröhlich lecture speakers in Physics, with an attendance of 50-100 per lecture.

(viii) Outreach activities

Provide data on the staff and students from the department involved in outreach and engagement activities by gender and grade. How is staff and student contribution to outreach and engagement activities formally recognised? Comment on the participant uptake of these activities by gender.

The School has a successful Outreach Programme. Table 5.7 shows the number of young people who have been engaged with. Outreach is primarily aimed at Schools in the North-West, and involves teams visiting schools and hosting schools on campus, with our Central Teaching Laboratory as a base.

	Attendees			Presenter information/% of audience				
	M	F	%F	M academic	F academic	M non-academic	F non-academic	UG students
Chemistry	760	792	50.1	5	95	0	0	47
Maths	5492	5762	51.2	2.8	0	97.2	0	11.3
Physics	1613	1520	48.5	16	7.5	20	17	65

Table 5.7: Numbers of young people engaged in Outreach.

In ***Action 1iv*** we committed to continue to run outreach events for female students. We have done this. For example a girls in STEM event took place in February 2016 for 20 sixth-form girls. A trip for female students to the European Synchrotron took place in 2016 (discussed in section 4 above).

The Outreach team takes particular care to try to ensure that they are made aware of any special requirements of pupils or staff attending events. The team also works in low income and widening participation neighbourhoods.

Prof. Tara Shears presents a TEDx talk "Why antimatter matters" in Aug. 2014.

Helen Aspinall (Chemistry) is the lead for Outreach on the Physical Sciences Leadership Team. She coordinates strategy and activities across the three departments in the School.

For historical reasons, the academic involvement in Outreach teams in each subject area are not well-balanced by gender. In Chemistry, academic involvement is nearly entirely female, and in Mathematics, it is entirely male. This is counter-balanced to some extent by the presence of well-mixed UG students on these activities. However we consider that ***Action 1ii*** of our Bronze action plan has not been completed.

Action 5.20: Achieve a better gender balance in academic input to school's outreach.

In Public Engagement, Tara Shears of the Physics Department has been supported in terms of time and travel resource to become an internationally recognized spokesperson for particle physics. Her activities formed the basis of an impact case study in REF2014 and was the most highly rated case study in the Physics submission.

(6431/6500)

SILVER APPLICATIONS ONLY

6. CASE STUDIES: IMPACT ON INDIVIDUALS
Recommended word count: Silver 1000 words

Two individuals working in the department should describe how the department's activities have benefitted them.

The subject of one of these case studies should be a member of the self-assessment team.

The second case study should be related to someone else in the department. More information on case studies is available in the awards handbook.

Ben, Imogen and Anna

Dr Anna Slater

I joined the Department of Chemistry as a postdoctoral research associate in March 2013 on a 2 year fixed-term contract, which was extended to nearly 4 years to cover maternity leave. During this time, I applied for several small travel and pump-prime grants, all of which were successful. The School has been very supportive of my efforts to establish independence, giving me the time and support to draft applications and carry out research related to, but distinct from, my PI's research. These activities have been invaluable in building up my track record, culminating in my successful application for both a Royal Society-EPSRC Dorothy Hodgkin Fellowship (Dec 2016) and a lectureship within the School's Materials Innovation Factory, which I will hold as a proleptic appointment.

When I arrived, there was no forum for postdoctoral researchers within the School. With the support of the School and other research staff, I established the Chemistry Postdoctoral Forum, which has been able to affect real change in the way researchers are supported, heard, and perceived within the department. Without the prominent verbal and financial support from the School, particularly Professors Ronan McGrath and Andrew Hodgson, the forum would not exist. The forum has now expanded to be the School of Physical Sciences Researcher Forum, which assists in developing training activities, holds career development events, and sends a representative to Leadership Team meetings. For my part in the development of the forum and the University Parents' Network, I was nominated by Ronan for the University's Celebrating Success Awards 2015, and was shortlisted and highly commended for 'Improving University Life'. This recognition is rewarding both personally and professionally.

This year, I was encouraged by the School to apply for the Women of the Future Awards, something I never would have done without prompting from my senior colleagues, and was delighted to be shortlisted in the Science category. This is a testament to the supportive atmosphere within the School. Ronan has also supported my application to the Aurora Programme for women in leadership, which I will start in 2017.

My husband is also a postdoctoral researcher within the School; our daughter was born in January 2015. During my pregnancy, my supervisor and the safety team were extremely supportive of my requests to move lab and change duties; for example, my PI asked me to co-author a review paper which was published in *Science* while I was on leave. On my return to work, I was given access to an office for expressing milk, and took advantage of the nursery facilities on campus. Both my husband and I are able to work flexibly when needed, for example leaving early on Thursday to take our daughter swimming. As my workload changes with my new role, I am confident that our childcare needs will be considered, and that the Head of School strongly believes in supporting staff in my position.

Prof. Marielle Chartier

I graduated from the University of Paris-Sud (Orsay) in France and obtained my PhD in Nuclear Physics from the University of Caen in Normandy in 1996. I went on to work for two years as a post-doctoral researcher at the National Superconducting Cyclotron Laboratory of Michigan State University (USA) and returned to France in 1998 where I took up a Lectureship position at the University of Bordeaux.

Philippe, Marielle, Roy, Sébastien

In 2001, I obtained an EPSRC Advanced Research Fellowship and joined the Physics Department at the University of Liverpool. I have played a leading role in the R^3B international collaboration and in particular in the construction of the R^3B Silicon Tracker for the new FAIR heavy-ion facility in Darmstadt (Germany), for which I was the Principal Investigator of a £2 million STFC grant.

When I am not working, I am rather busy with my family, looking after my two sons, Sébastien (nearly 10 years old) and Philippe (7years old) with my husband who is also my colleague and collaborator, working at STFC Daresbury Laboratory. I was the first member of academic staff to take maternity leave, and subsequently work part-time, in the history of the Physics Department. My decision to work part-time during 2007-2014 was supported by the Department and School which enabled me to have a better work-life balance while my children were little.

In 2013 I took a sharp turn in my research career and joined the ALICE experiment at CERN (Geneva, Switzerland), one of the four main experiments of the Large Hadron Collider, to drive the Physics Department into a new area of high-energy nuclear physics research. The focus of my group's activity over the next decade or so will be the full exploitation of the LHC collider for such studies with the ALICE experiment. Over the next five years I will also oversee as

Principal Investigator the construction of a new STFC-funded £1.8 million upgrade of the ALICE Silicon Inner Tracking System.

I returned to full-time work once my children were both at primary school. The Department also ensured over these years that my teaching duties were commensurate with my working hours and research responsibilities (and their associated administrative responsibilities), which enabled me to continue and develop my research and career. I was promoted to a personal chair in 2015.

Over the last few years I have obviously become increasingly aware of my 'role model' status within the Department and School, being one of only 2 female Professors in the Physics Department (and also one of only 2 female Professors of Nuclear Physics nationally) and in another minority amongst the female Professors of the School as a mother. Beneath the surface of this successful picture, there have been hurdles and difficulties, and therefore I have been able to contribute to the Athena SWAN silver application from my own experiences.

(963/1000)

7. FURTHER INFORMATION

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

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

Juno

In parallel with participation with the School Athena SWAN process, the Department of Physics Institute of Physics Juno Supporter Status was renewed in July 2015. The Juno project aims to address the under-representation of women in university physics. The Juno Committee aims to apply for the Juno Practitioner award in April 2017. The Departmental Juno leads are members of the School's E&D committee and have been involved in the preparation of the Athena SWAN application.

LivWISE

LivWISE is the Liverpool Women in Science and Engineering group. The School works closely with LivWISE in joint events, in dissemination of opportunities and in networking.

(103/500)

8. ACTION PLAN

The action plan should present prioritised actions to address the issues identified in this application. Please present the action plan in the form of a table. For each action define an appropriate success/outcome measure, identify the person/position(s) responsible for the action, and timescales for completion.

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

Action Plan

Our action plan presents key objectives in the following areas:

1. To initiate beacon activities at local, national and international level (**1-3**)
2. To improve the working environment in the School(**4-7**)
3. To increase proportion of female academic staff (**8-11**)
4. To enhance the career journey for academic and professional services staff (**16-22**)
5. To increase the proportion of female UG and PGR students (**23-27**)

See appendix for:

- Silver action plan
- Bronze award action plan (with progress log)

Thu 06/10/2016 12:32

Athena Swan <AthenaSwan@ecu.ac.uk>

Additional word allowance for the School of Physical Sciences

To Middleton, Sally; McGrath, Ronan

Cc Athena Swan

You forwarded this message on 06/10/2016 17:24.

Dear Sally and Ronan,

This email confirms that the School of Physical Sciences is permitted to use an additional 1,000 words for its November 2016 Athena SWAN submission, on the grounds that the School consists of three departments, meaning that departmental-specific analysis is necessary within the application.

Please append a copy of this email to the application.

Best wishes,
James

James Lush
Equality Charters Development Manager
T: 020 7269 6547
M: 07889 757 390
E: james.lush@ecu.ac.uk

We have moved – please note our new address below

Physical Science Silver award Action Plan

Action Number	Text Ref.	Rationale	Action already taken	Further Action planned	Timeframe		Person Responsible	Outcome measure
					Start	End		
Beacon Activities								
1	5.12	Ambition to be sector-leading	Initial engagement with EPSRC regarding School measures for PDRA development	Further engagement with EPSRC to influence their policies and strategies	Now	2020	HoS, Chair of Researcher Forum	National recognition as a lead in this area
2	4.2	Aspiration to be sector leading in % F UG students	Admissions procedures (open and discovery days) revamped	Work with Professional Bodies to develop innovative practices	2017	2020	Admissions leads in each department	Exceed the sector in %F UG students
3	4.3	Attainment gaps in achievement in Physics	Local focus groups and interviews	working with Institute of Physics, investigate effects of intersectionality in attainment	Mar. 2017	Sept. 2017	Helen Vaughan	Published report on attainment gaps at local and national level
4	3.1	Support for the wider Athena SWAN agenda; draw on international good practice	Reviews of internal applications, involvement in AS panels	More systematic support of other applicants internally and externally	Now	2020	E&D team	Local and wider recognition of the School as a lead in this area

Culture, communication and organisation								
5	**5.17**	Low satisfaction with sense of community in the School	Existing networking opportunities	Initiate School forum events with networking opportunities	Mar-17	Mar-18	HoS and School Manager	20% higher satisfaction with level of respect and community
6	**5.18**	Lack of females staff on departmental committees	Departments encouraged to consider gender balance	Require female representation on all School and Dept. committees	Now	Dec. 2017	HoS, HoDs	Reasonable gender balance on all major committees
7	**5.19**	School workload models imperfect	Workload models made transparent and converging	Input to University workload model development	Begun	Dec. 2019	University workload model taskforce, HoS	University workload model established
8	**5.20**	Gender balance on academic staff on outreach teams unequal	UG students assisting are gender balanced	Academic staff involved are gender balanced	Jan. 2017	Dec. 2018	School Outreach lead	Gender -balance in outreach teams
Key Transition points: appointments and promotions								
9	**5.1**	Unequal gender representation on appointments panels	Two women on each panel minimum	Move to policy of 50% women on panels	Now	Mar. 2017	HoS	Policy of equal representation on appointments panels in place
10	**5.2**	Unconscious bias in panels	Unconscious bias training	Policy to use Royal Society Unconscious Bias guidelines before each panel	Now	Mar. 2017	HoS	Greater awareness of unconscious bias measured via surveys

11	5.3	Lack of female candidates	Informal guidance to panels	Policy of formal guidance to panels that each list should have female candidates or an explanation of why not.	Now	Mar. 2017	HoS	Growing numbers of females on long- and short- lists
12	5.4	Lack of female candidates	Instructions to recruitment agencies	Policy of formal guidance to recruitment agencies on gender balance of long- and short- lists	Begun	Jan. 2018	HoS	Growing numbers of females on long- and short- lists from recruitment agencies
Academic T&R and T&S staff								
13	4.7	Low numbers of women in fixed-term contracts	Data analysis and comparison to sector	Investigation at departmental levels, focus groups	Mar. 2017	Sept. 2017	Ian Bamber	Improvement in statistics wrt HESA benchmarks
14	5.7	Surveys show lack of understanding of promotion criteria	Circulation by e-mail	Annual Workshops and presentations on promotion criteria with particular emphasis on female colleagues	Jun-17	Jun-18	HoS	Annual communications schedule in place; 20% increase in understanding as measured in surveys
15	5.8	Gender return to REF2014 unequal	Post-REF2014 analysis	Training in unconscious bias for internal REF reading panels	2017 reading cycle	Jul-05	Dept. REF leads	Reading programmes reflect performance fairly
16	5.13	No sabbatical policy in place	Sabbatical policy agreed in all departments	Implementation of sabbatical policy in all departments	Jan. 2017	Dec. 2020	HoDs	Sabbatical system running effectively
Research staff								
17	5.5	Low satisfaction with induction	Induction reviewed by School Researcher Forum	Targeted induction programme for research staff	Begun	Sept. 2017	Faculty Associate PVC for Research, Chair of Researcher Forum	10% higher satisfaction with induction

18	**5.9**	Low satisfaction with training opportunities	Programme of training opportunities established	More role-specific training; convince PDRA supervisors of value of PDRA training	Jan. 2017	Dec. 2019	School Research lead	10% higher satisfaction with training in surveys
19	**5.10**	Dissatisfaction with professional development review system for PDRAs	Consultation with Researcher forum	Hold a Faculty wide workshop to define the format and content of the PDR discussion for PDRAs. Subsequently work with HR to implement a bespoke format for PDRAs	Jan. 2017	Dec. 2019	Chair of Researcher Forum	20% higher satisfaction with training in surveys
20	**5.11**	Good reception for post-doctoral development award	First year operation	Make PDRA development award annual through the planning process	Feb. 2017	Jul-17	School Manager	Annual event established
21	**5.15**	Low satisfaction with flexible working support	Appointments advertised with flexible working policy	Educate academic staff/supervisors concerning rights of researchers to flexible working arrangements	Jul-17	Jul-18	HoDs, Co-chairs of researcher forum	20% higher satisfaction with flexible working in surveys
Professional services staff								
22	**5.16**	Low satisfaction with flexible working support	Ensure staff understand flexible working possibilities	Implement flexible working on a more wide-spread basis	Jan. 2017	Jul-18	School Manager	20% higher satisfaction with flexible working in surveys
23	**5.14 a,b**	Training and development, PDR of professional services staff	Discussions in PDR process	Expectation of engagement in training and development activities; PDR satisfaction	Begun	2020	School manager and Team leaders	Higher take-up of development opportunities, 20% increase in staff survey satisfaction

PGT and PGR students								
24	**4.4**	Dip in conversion to PGR for Chemistry and Mathematics	Anecdotal enquiries	Focus groups, interviews, unconscious bias training for PGR recruiters	Begun	Jun-17	School lead for PGR	Report on conversion rates by gender with recommendations
25	**4.5**	PhD Outreach programme	Schools talks and Café Scientifique	Organise yearly programme for Schools and UG	Jan. 2017	Jul-17	School lead for PGR	Annual programme in place
26	**5.6**	Diversity and equality awareness low for PGRs	Talks by University E&D officer	System to deliver biannual workshops for PGRs on E&D	Begun	Jan. 2018	Management Services team leader	Increased awareness of D&E issues among PGRs as measured in surveys
Undergraduate students								
27	**4.6**	Lack of information on E&D aspects of our student cohorts	Initial analysis of ethnicities for marketing	Project with HR and Student Services to understand our student makeup	Mar-17	Sep-18	Professional services lead for student experience	Report on E&D make-up of our student populations to inform future decision-making
Foundation Students								
28	**4.1**	Behind national benchmark for female Foundation students	None	Work with Faculty recruitment team and Carmel College to understand and rectify this	Admissions cycle 2017-18	2020 entry	Admissions leads in each department	Improved percentage of female Foundation students

Bronze Action Plan with Progress Log and page references to Silver award application

What area is being addressed? (What data was	What issues have been identified through data gathering and consultation?	What actions are being proposed to address these issues?	What is the timescale?	Who is responsible?	What will success look like?	Progress log and page number references to Silver application
Theme 1: Addressing gender imbalance in the student body (UG,PGT,PGR)						
1. Undergraduate male and female numbers (Figure 3, Tables 3 and 4)	Chemistry and physics have fallen below national averages in recent year; maths exceeds national average. Need to reverse the decline and become the sector leader	i. Brief Outreach teams on Athena SWAN action plan.	Sep. 2014	HoS, School E&D team and School Outreach Lead	Achieve national averages of %female UG students in all departments in 3 years; Exceed national averages of female UG students in all departments in 6 years	HoS and the School Outreach Lead agree on representation in outreach events. (p.66) Outreach teams briefed.
		ii. Ensure gender balanced role models in Outreach activities	Sep. 2014			**COMPLETED** Male and female members of the Recruitment Committee organize Open/Discovery Day activities (p.19) 50% female undergraduate helpers in Open/Discovery activities.
		iii. Check promotional material for appropriate gender representation	Sep. 2014			**COMPLETED** Materials in each area and in University prospectus have been checked for gender balance (p. 19) June 2015: New LivWISE videos have been added to the School Athena website.
		iv. Continue to run outreach events for female students in each subject area.	Sep. 2015			**COMPLETED** Regularly organised by outreach teams of each Department (p. 29)

		v. Ensure continued female role models in admissions process (staff and PGR students), including childcare costs for female staff if required.	Ongoing			**COMPLETED** Childcare costs introduced as of 2014 (p. 19). Website: at least 50% female role models.
2. Postgraduate research male and female numbers and applications (Figure 5, Tables 3 and 4)	Chemistry and maths outperform national benchmarks. Physics underachieves in female PGR recruitment; low % of female applications in physics. Ensure UG students experience good female role models:	i. Modules taught (or sections of modules) by female role models	3 years	HoDs; School PGR lead	Increase in female PGR students in physics to national averages and maintain numbers in other areas (3 years)	**COMPLETED** Physics target met (p.27) Female role models advertised on the LivWiSE website Staff talks on research activities to undergraduate students.
		ii. Ensure female role models are involved in the supervision of UG and PGT projects	1 year			**COMPLETED** Implemented in all 3 departments. Summer research undergraduate intern programmes led by female academic.
		iii. Encourage female PDRA and PGR involvement with female UG students through a buddy/mentor scheme	1 year			**COMPLETED** Introduced for the new cohort of PhD students since September 2015.
		iv. Organise physics UG student survey and focus groups to better understand disparities; act on any findings	1 year			**COMPLETED** UG survey has been conducted by a Physics academic together with the Juno team. (p. 70)
		v. Ensure female role models are presented at PGR open days	1 year			**COMPLETED** School PGR lead ensures gender balance in all PGR recruitment events.

		vi. Promote PhD opportunities to appropriate networks				**COMPLETED** Embedded in PGR admissions activity. Opportunities are promoted through LivWISE networks and School social media. (p. 31)
3. Ratio of course applications to offers and acceptances - UG (Table 6, Figure 6)	No bias detected in offers. Physics has lower admissions than offers	i. As far as possible female applicants can request to be interviewed by female staff, and made aware of support networks	1 year	HoDs; Admissions tutors	Achieve national average in female recruitment in Physics and sustain numbers of females recruited to other UG programmes (3 years).	**COMPLETED** ECR female Physics academics involved in Physics Open Days since June 2015. Better than national averages in Chem., Maths; at national average in physics (p.19)
		ii. Ensure the presence of female role models on Discovery days (post-application visit days).	1 year			**COMPLETED** In both Chemistry and Mathematics, the Discovery Day leads ensure gender balance of academics present as well as UG helpers involved.
4. Degree classifications by gender (Figure 9)	Lower proportion of females achieving 1st and 2.1 in physics	i. Organise physics UG student survey and focus groups to understand why; act on any findings	3 years	HoD physics	Balance in degree classifications in physics (3 years)	**COMPLETED** Female students out-performing males (p. 22).
Theme 2: Addressing gender imbalance in staffing (academic and academic-related)						
5. Academic staff by grade (Figures 10 and 11)	There is a key bottleneck in the transition into a first teaching and research academic position (grade 7).	Establish a School recruitment policy to ensure equality and diversity issues are addressed. The policy will include the following:	Immediate	HoS	Increase in % of female academic staff at grade 7 and above over current levels (Table 1) with a goal of exceeding the national benchmarks (3 years)	**COMPLETED** Key elements of new policy introduced (May 2015). Targets exceeded (p. 35, 36)

		i. Establishment of an appointments committee (with at least 20% female representation) to ensure all academic appointments follow this policy.	Immediate			This action discontinued as inefficient; effort redirected to unconscious bias training etc.
		ii. Advertising all vacancies to networks of women in science and engineering (WISE, IOP Women in Physics, LMS Women in Mathematics)	Immediate			**COMPLETED** Embedded into School recruitment procedures (p. 31)
		iii. Ensuring appropriate information on support is in place and advertised (including maternity cover, flexible working policy, mentoring, networks)	6 months			**COMPLETED** School policy has been adjusted and a School advisor role has been introduced (p.56)
		iv. Ensuring at least 2 female representatives on interview panels, and that short-listing is done by the entire panel.	6 months			In addition, all panel members required to do recruitment and selection and equality and diversity training.
		v. A trial of gender blind shortlisting overseen by appointments committee	Next appointments.			**COMPLETED** Trial has been conducted in two instances - no bias ascertained (p.40)
		vi. Trial involvement of recruitment agencies to increase the pool of female applicants	6 months			**COMPLETED** Brief to a recruitment agency for appointing the HoD in Mathematics. (p. 40)

		vii. Diversity and Equality and unconscious bias training for all those involved in recruitment	Immediate			**COMPLETED** Royal Society guidelines used at every panel. Athena SAT underwent the Unconscious Bias Training. (p. 40)
		vii. Introduce exit interviews to establish areas for improvement	Immediate			**COMPLETED** Embedded into HoS procedures (p.38)
		viii. Collect data on the data on the recruitment process at all stages from application to final outcomes, including information about the interview panel, through the HR Core system	On-going			New software system introduced by the University is collecting this information.
Theme 3: Support for career development						
6. Promotion support (Table 9, Figures 14 and 17)	Lack of advisory opportunities	i. The school will offer an advisory scheme by staff who have recently successfully been promoted.	Next Annual Review (autumn 2014)	HoS	>70% of all staff feel encouraged and supported in career progression (2 years)	**COMPLETED** University Mentoring Scheme for promotion to Senior promotions. Successfully promoted candidates and members of promotion panels share their experiences in sessions organised at the Faculty level (p. 45)

		ii. Careers workshops for all staff	1 year			**COMPLETED** School briefings have been introduced for academic promotions at all levels, including T&S route (p.34, 45). University Reader and Personal Chair mentoring scheme introduced. (p. 45)
		iii. Career progression discussed in all PDRs	1 year			**COMPLETED** Embedded in revised PDR scheme (p.49).
7.Mentoring (Survey, Figures 15 and 23)	Low percentages benefitting from mentoring; high demand	i. Publicise University mentoring opportunities	Now	E&D team; HoDs	Proportion of people who would like a mentor but do not have one is below 10% in the staff survey (2 years)	**COMPLETED** University Mentor Network established (p. 45, 52). School mentoring established (p. 45). Mentoring scheme for the promotion process introduced (p. 45)
		ii. Formalise mentoring within the school so that everyone is given an opportunity to have a mentor	1 year			**COMPLETED** See 7.i.
		iii. Training opportunities for mentors at University and School level.	1 year			**COMPLETED** The University of Liverpool Mentor Network provides multiple training events.
8. Leadership	Lack of influence reported by women in the staff survey	i. Nominate women to influential committees and encourage women to apply for leadership programmes.	1 year	HoS, HoDs	No gender difference in responses to questions about influence in next staff survey (2 years).	**COMPLETED** Five female academics attended "Aurora: Women in Leadership programme" (p. 63).

9. Appraisal system (Survey, Figure 16)	Low percentages of PDRA and academic finding appraisal useful/productive	i. Re-invigorate PDR system ensure compliance with University policy on PDR	1 year	HoS, HoDs	At least 60% PDRAs and accademics find appraisal useful in next staff survey (2 years).	**COMPLETED** HoS is now involved in promotion applications: support, mentoring, one-to-one discussions prior to interviews Also see 6. iii.
10. Induction (Survey Figure 19)	Low percentage agreeing that induction was good.	i. Hold focus groups to discuss induction and changes	6 months	E&D team	Positive feedback about the induction process from newly appointed staff (at least 50% satisfaction) (2 years)	**COMPLETED** Induction process overhauled and implemented (p. 43, 44, 47)
		ii. Develop and implement school policy on induction	1 year			**COMPLETED** Induction process overhauled and implemented (p. 43, 47)
11. Networking (Survey, Figure 20)	Poor access to networks and low percentage of women who feel they "have a voice".	i. Commit attendance of HoS and HoDs to forums at least once a year	1 year	HoS, HoDs	No gender difference in responses to questions about networking in next staff survey (2 years) ; access to forums for all PDRAs and PGRs who want to have access	**COMPLETED** Networking addresses successfully; increase in satisfaction in all surveys (p. 60)
		ii. Advertise existing networks (e.g. PDRA forums and Female Early Career Research Network) to staff using emails, meetings and intranet, during induction	3 months			**COMPLETED** Parents' Network, University-wide support network initiated by the School (p. 55,67) Joint Networks info circulated (LGBT, BAME, Disabled Staff Network, Female ECR forum, Parents Network, LivWISE Network)

12. Training (Survey, Figure 21 and 22)	Low percentages of PGR and staff undertaking training	i. Incorporate training as a priority in supervisor/PDR discussions	Sept. 2014	HoS, HoDs, Research support officer	10% increase in positive responses to questions on training in next staff survey (2 years)	Online training introduced. Focus on PDRA training carried forward to Silver action plan (Action 17)
		ii. Enhanced publicity for training opportunities	3 months			**COMPLETED** Programme of training events for academics and researchers established and advertised (p. 49)
		iii. Workload allowance where training takes place over an extended period	ongoing			See 6. iii.
13. Support for female students - UG	UG students unaware they can ask for a female advisor	i. Make students aware of this possibility	2014 entry	HoDs	Improved awareness amongst female students that they can ask for female advisors (measured by student email questionnaire, 1 year)	Embedded in Senior Tutor procedures
14. Support for female PGR students (Survey Figure 18 and 23)	Career development opportunities are weak	i. Introduce workshops for PGR and PDRAs on Fellowship applications	1 year	HoS, HoDs, School PGR lead	50% of PDRAs and PGRs agree that career development opportunities are good in the staff survey (2 years)	**COMPLETED** Complementary skills session for year 3 PGR students. Fellowship workshops are held for PGR and PDRAs. Development programme for researchers with 4 events per year.(p. 49)
		ii. Provide pump-priming for small grant applications	Sept. 2014			**COMPLETED** This has been altered to provide a pump-priming scheme in support of PDRAs (p. 52)

		iii Mentoring scheme for PGR students	Oct. 2014 entry			**COMPLETED** Induction processes are now set up at School level for PGR students.
Theme 4: Culture, Communications and Representation						
15. Committee representation (Table 10)	Lack of transparency in membership of key committees	i. Revise School and Department Committee Terms of Reference to ensure committee vacancies are advertised	Jun-14	HoS, HoDs	Committee representation reflects or exceeds the proportion of female staff in the school	**COMPLETED** Terms of references for School level committees (PSLT, L&T) have been revised appropriately. Vacancies, including Athena roles, are advertised encouraging female staff to apply (p.61)
16. Workload model data; staff survey	Lack of transparency and ability to check for gender bias	i. Collate, check and publish on intranet the academic contribution of each member of staff using existing workload models in each department	April 2014	HoS, HoDs	Transparent workload model across the School	Workload model has been made available on School intranet. (p. 64) University workload model in development - carried forward to Silver action plan (Action 6)
		ii. Development and publication of a unified workload model which allows contribution across the school to be published transparently and fairly.	1 year			(see 16.i)
	No credit given for outreach, or training activity in workload model	iii. Incorporate outreach and training activities in workload models	1 year	HoS, HoDs	Appropriate credit for time spent on outreach	**COMPLETED** (p. 61)
	Committee overload for female staff	iv. Ensure committee work is a factor in workload models	1 year		Fairer representation on decision-making committees	**COMPLETED** (p. 61)
17.Timetabling - staff survey	Family-friendly time-tabling needed	i. Develop a School HR and Gender Equality Framework	i. Sep. 2014	HoS	School business meetings are scheduled in family friendly times	**COMPLETED** (p. 64)

		ii. Incorporate guidelines on family friendly time-tabling of business meetings	ii. Sep. 2014			**COMPLETED** Family friendly core hours 10.00-16.00 have been introduced for meetings, seminars and colloquia (p.63)
18.Seminars (Departmental lists)	Lack of female speakers on seminar programmes	i. Introduce a female speaker quota of greater than current staff percentage for School and departmental seminar programmes	3 years	HoS, HoDs	Percentage of women in seminar programmes is at least equal to percentage of female staff	**COMPLETED** All seminar and colloquia organisers have been made aware (p. 65-66)
19. Maternity leave and flexible working policy (Table 11, Figure 26)	Ad-hoc resourcing of maternity leave and other flexible leave cover	Develop a school policy on maternity and flexible working support in line with RCUK guidelines	1 year	E&D team, Leadership team	School policy and guidelines in place and transparent; at least 10% increase in positive responses for flexible working in next staff survey	**COMPLETED** 21% increase recorded (p. 49). Academic staff has been appointed as the School's Maternity/paternity advisor. Key elements introduced (p. 56-59)
20. Induction and training - % taking E&D module	Low take-up of equality and diversity training	i. Raise awareness of the obligatory Equality and Diversity Training Module via email and PDR process	1 year	E&D team	Achieve 90% completion on Equality and Diversity Training Module	**COMPLETED** Completion rate has risen from 16% (13.3.2015) to 88.4% (28/11/2016).
21. Communications - survey results	Lack of awareness of E&D policies and content of Athena SWAN application	i. Pre-submission consultation events; communicate survey results	Pre-submission	E&D team	Increase by 10% in positive responses about Athena SWAN awareness in next staff survey.	**COMPLETED** Survey targets met (p. 15)
		ii. Ongoing communication: school newsletter items/lectures/events including PDRAs, PhDs and UGs	6 per year			**COMPLETED** School newsletter has an Athena SWAN section. Consultation events hosted in the school meeting room (p. 14)