

Athena SWAN Bronze and Silver Department award application

Name of institution: Oxford University

Date of application: 30 April 2012

Department: Materials

Contact for application: Professor Chris Grovenor

Email: chris.grovenor@materials.ox.ac.uk Telephone: 01865 273727

Departmental website address: materials.ox.ac.uk

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

Level of award applied for: Silver

1. Letter of endorsement from the Head of Department

30 April 2012

Dear Athena SWAN Panel

As Head of the Oxford Materials Department, I am very pleased to write this letter of endorsement for our application for an Athena SWAN Silver Award. I am fully in support of the plans and aspirations in the application, and am myself wholly committed to ensuring that the Athena SWAN principles and our action plans are embedded in the activities and strategic initiatives of the department.

This department is dedicated to world class research and training in the science of materials, from nuclear and aerospace alloys to biomaterials and the building blocks of future quantum computers. We are a broad church, with staff, researchers and students from a wide range of scientific and cultural backgrounds from more than 70 countries. In both research and teaching our emphasis is on developing and understanding the fundamental principles of what controls the structure and properties of materials and devices, working very closely with many global industrial partners and with a strong entrepreneurial spirit and outlook.

The department is fully committed to promoting gender equality in all activities. This starts with our undergraduate recruitment strategy which places a strong emphasis on outreach activities aimed at attracting high achievers of both sexes to aspire to undertake a degree course in Materials in Oxford. In recruiting researchers and academic staff we encourage potential applicants to consider the supportive nature of the working environment that



we offer and the generous and flexible family support that the University provides. The department believes that flexible working should be a normal aspiration for staff on any grade, allowing them to plan and manage childcare or other caring responsibilities, and examples of how we put this into practice are included in our application.

During the self assessment process required to prepare this application, we have learnt a good deal about ourselves and how we do our business. Some of what we have learnt has been less than comfortable; revealing areas where we can do better. It is a positive outcome of this review that the department is keen to incorporate what we have learnt in our future plans, and progress will be monitored by the newly established Athena SWAN panel on which the Head of Department will be a member (but not chair). The formal monitoring process will help us build on recent success in recruiting some world-class younger scientists both as academic staff and researchers over the past few years, and help in developing a larger team of successful and influential female academics at all levels in the institution. Both female and male colleagues juggle work and family commitments, serving as outstanding role models for other younger aspiring scientists.

I have been impressed by the enthusiasm and commitment of the Departmental Athena SWAN self-assessment panel. Working around their already heavy research, teaching and family commitments, they have contributed to a serious re-evaluation of the activities and ethos of the department, and have set us on a course that will benefit many staff in the future.

A handwritten signature in black ink, appearing to read 'C R M Grovenor', with a long horizontal line extending to the left from the bottom of the signature.

Professor C R M Grovenor

[499 words]

2. The self-assessment process – maximum 1000 words

Describe the Self-Assessment Process. This should include:

a) The self assessment team:

There were 13 members of the Self-Assessment team, 9 female and 4 male, selected to provide a range of backgrounds and experience. In alphabetical order they are:

Dr Hazel Assender is a University Lecturer and Fellow of Linacre College. Her husband is a patent attorney, and they have two children, aged 10 and 7. By agreement with the Department, Hazel has worked 80% FTE since 2004.

Dr Alison Crossley is manager of the Oxford Materials Characterisation Service. She joined the University from AEA Technology in 2002. She is married to a GP and has three (now grown up) children.

Dr Claire Dancer is a Postdoctoral Research Fellow supported on an EPSRC grant and a Non-Stipendiary Lecturer at St Anne's College. She joined the University from Cambridge as a graduate student in 2004. She is married to Dr John Murphy.

Alana Davies is Departmental Administrator. Having had a career in the WRNS and a 9 year break to bring up her daughter, she joined the University in 1990, and has also worked in Orthopaedics and Chemistry. She provides care for her elderly mother.

Dr Barbara Gabrys has been the Divisional Academic Advisor in the Mathematical, Physical and Life Sciences Division since 2007 and is a member of the Materials Department. As Academic Advisor she has developed a programme aimed at early career scientists which she delivers annually.

Dr Marina Galano is a Royal Academy of Engineering/EPSRC Research Fellow and Fellow of Mansfield College. She will become a tenured University Lecturer in 2013 at the end of her research fellowship. She joined the University as a DPhil student in 2002.

Professor Nicole Grobert is a Professor of Nanomaterials and a Royal Society University Research Fellow at the Department of Materials, and a Research Fellow at Corpus Christi College. She joined the University in September 2003 as a Royal Society Dorothy Hodgkin Research Fellow. She is not married and her close family lives abroad.

Professor Chris Grovenor is a Professor of Materials, current Head of Department and fellow of St Anne's College (five years as Nursery Fellow). A University Lecturer in 1986, he is married to an industrial metallurgist, and has two children, aged 18 and 21 (both of whom attended St Anne's Nursery). This provision, and flexibility in working hours, allowed him and his wife to remain in full time employment.

Dr John Murphy is a Royal Academy of Engineering / EPSRC Research Fellow and Stipendiary Lecturer at St Anne's College. He joined the University in 2000 as an undergraduate in Physics at Exeter College. He moved to Materials as a DPhil student. He is married to Dr Claire Dancer.

Professor Peter Nellist is Professor of Materials and a fellow of Corpus Christi College. He joined the University in 2006. His wife is a Research Facilitator in the University and he has two children, aged 2 and 4. The

flexibility in working hours offered by the Department has been crucial for managing their childcare arrangements.

Dr Keyna O'Reilly is a University Lecturer and Fellow of The Queens College. She joined the University as an undergraduate in St Anne's College in 1984. Her husband is also a graduate of the department and is our IT Manager. They have two daughters, aged 4 and 9. They also had a son with a serious heart condition who sadly died at the age of one. The university nursery provision and flexibility in working hours for both Dr O'Reilly and her husband enable them both to work full-time and, at the time, to cope with their son's condition. They are immensely grateful to the Department for the support and flexibility provided at the time of their bereavement.

Dr Susannah Speller is a Royal Academy of Engineering/EPSRC research fellow, and a Lecturer at St Catherine's College. She joined the University as an undergraduate at Trinity College in 1996, and has two children, aged 5 and 7. By agreement with the Department and the Royal Academy of Engineering, Susie has worked 60% FTE since June 2008 and 50% FTE before that.

Dr Adrian Taylor is the Director of Studies of the Materials Department. He joined the University in 2004, having been a university lecturer in chemistry for fourteen years, at Brunel and Salford. He is in a long-term relationship with a freelance fine artist who has two adult children.

In addition to the team above, we have been advised and assisted by:

Vanessa Howe, MPLS Divisional HR Manager

Dr. Sarah Carson, Gender Equality Adviser in the Equality and Diversity Unit

MPLS also employed part-time research assistants with social science research skills, **Mark Taylor, Hannah Maslan and Samina Luthfa**, to support Athena Swan applications, focussing on data analysis.

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

The initial data collection exercise to inform this application was conducted over the summer of 2011 and presented to the first meeting of the full self-assessment team in November. Subsequently, the data presentation and analysis for this application was coordinated by Professor Peter Nellist supported by Dr Adrian Taylor and Alana Davies. The responsibility for collating data on the recruitment and progression of students and of researchers were allocated to the appropriate team member. When comparative data were required, we approached the central university, the UKCME, the national HEIDI database and other materials departments.

A focus group of nine female graduate and postdoctoral researchers, led by Professor Nicole Grobert and Dr Marina Galano, met in March 2012. Several points that were raised by the group are included in the Action Plan.

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

To promote the department's ongoing SWAN activities, a smaller team will continue to meet termly to review progress on the individual targets identified in the Action Plan. This group will comprise 2 academics, 2 postdoctoral researchers, 2 graduate students and 2 administrative staff (each 1 female and 1 male), and will actively seek input from across the department to consider revisions and additions to the Action Plan for inclusion in the renewal application in 2015.

[984 words]

3. A picture of the department – maximum 2000 words

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

The Materials Department in Oxford is one of the smaller departments in the Mathematical, Physical, and Life Sciences (MPLS) division, with 22 academic staff (3 female). It has been successful in attracting a large number of exceptional younger scientists who have competed successfully for independent fellowships from, for instance, the Royal Society and Royal Academy of Engineering (currently 3 female and 4 male). We also host 62 postdoctoral researchers (16 female) and an expanding number of graduate students (155 at present – 54 female) from more than 40 countries, supported by 4 senior administration staff and 37 technical/secretarial staff. The Department has an international reputation for world-class research and teaching; specialising in the characterisation of materials, modelling new materials, developing processes and techniques for advanced manufacturing, and quantum information processing. Research in the department is highly collaborative, with most research projects involving several staff, and more than 50% undertaken in close contact with industry. The department runs two degree courses, Materials Science and Materials, Economics and Management admitting approximately 30 undergraduates each year spread across 7 colleges.

[176 words]

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

Student data

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

The department does not run any access or foundation courses.

We have for more than 10 years had our own schools liaison team who organise a large number of annual visits both to schools and for school groups coming to Oxford for half-day Materials taster courses and 3-4 day residential courses (RAE Headstart, Oxford UNIQ and, in the past Smallpeice). A key focus of this team is to inform and attract non-traditional students to consider Materials as a degree course. We also emphasise in our publicity and our presentations that Materials is a female-friendly subject. The team currently has 3 part-time staff, one of whom, Jayne Shaw, has 3 children aged 10, 8 and 5 and works 50% FTE. The 7 most recent residential courses in 2009, 2010 and 2011 had 190 total attendees, 70 (37%) female. Over the same period we organised 15 non-residential open days with a total attendance of nearly 600 6th formers, and approximately the same percentage of female participants. Other access activities include:

- offering **schoolchildren work experience places in laboratories** during the summer holidays, using grants from, inter alia, the Nuffield Foundation. An example is Katherine Hazelton who undertook a project with Professor Nicole Grobert in the summer of 2009, subsequently applied for admission to the undergraduate programme, and is a 2nd year undergraduate,
- each year we introduce ~ 60 **trainee science teachers** (~40% female) to the subject of Materials Science as part of their PGCE programmes
- the MPLS Division organises a **women in science event** for year 12 students to which the Materials Department usually contributes a talk by one of our female research students or recent DPhil graduates.

[277 words]

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

Both our undergraduate degrees are 4 year MEng courses; we have no part-time undergraduates. Over the last six years the department has had an average of 34.8% women in our undergraduate population (Table 1). Figure 1 illustrates the makeup of the student body over this period, and compares the Oxford average to the national average in Physical Science courses over the

same period (data from HEIDI: The HEIDI data on Materials courses is unreliable, only 13% female students which cannot be correct.) The UKCME National Subject Profile for HE programmes in Materials, 2008, gives 30% female students commencing study on a UK Materials degree in 2001. Over the past few years our fraction of female students moved to be close to the Physical Science national average. The EU average for Engineering/Manufacturing is 31%¹.

The context to these numbers is the imbalance in females taking STEM subjects in schools: we specify candidates must be studying 2 of Maths, Physics and Chemistry. Only 40% of the 2011 A-level entrants for maths were female, 21% for physics and 47% for chemistry².

Future plans to increase the proportion of female students in the undergraduate population centre on our schools liaison activities. We will continue to be careful to ensure that 6th form visitors are exposed to staff and student helpers with an appropriate gender balance.

[223 words]

Academic year	Total	Female	Male
2006-07	103	31 (30.1%)	72
2007-08	107	31 (29%)	76
2008-09	111	35 (31.5%)	76
2009-10	112	40 (35.7%)	72
2010-11	118	39 (33.1%)	79
2011-12	119	46 (38.7%)	73

Table 1: Number of women and men in our undergraduate programmes in the 6 academic years 2006 and 2011.

¹ S&T statistics (Eurostat)

² A-level data are taken from the Joint Council on Qualifications A-level statistics: <http://www.jcq.org.uk/nationalresults/alevels/> - accessed November 23rd 2011

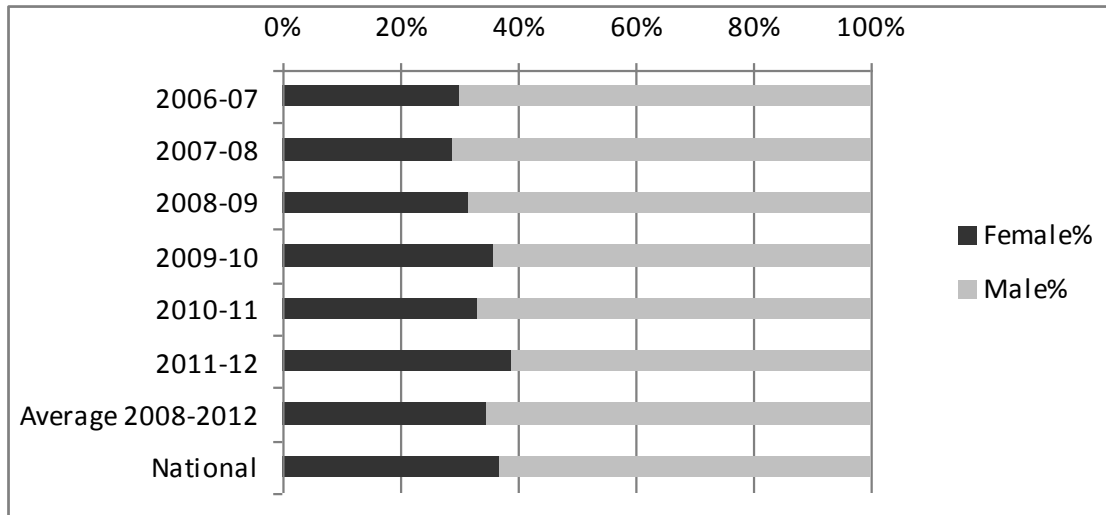


Figure 1: proportions of female:male students in our total undergraduate population in a given academic year. The national average is for Physical Science not Materials for which the data is not reliable.

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

The department does not run taught postgraduate courses, and has no plans to do so in the future. Our undergraduate degree programme runs for 4 years resulting in an MEng in Materials Science. The completion rate for the 4th Year of the course is 100%, and the male:female ratios are the same as for the undergraduate data above.

[58 words]

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

The department has a strategic target to increase our graduate numbers, and we have been very successful. In the past 5 years the total number of those studying for doctorates has increased from 117 to 158. Over the same period, the percentage of female graduate students has increased from 19% to over 32% (Table 2 and Figure 2). This is similar to the percentage of women on our undergraduate course, and to the national average for UK Materials PG courses since 2006 (30.2%; HEIDI). The latest UKCME data (2006) gives a similar proportion, 27%, of female students embarking on a materials PG programme, and the EU percentage for Engineering/Manufacturing is 25%

Academic year	Total	Female	Male
2006-07	106	20 (18.9%)	86
2007-08	117	29 (24.8%)	88
2008-09	118	34 (28.8%)	92
2009-10	134	42 (31.3%)	92
2010-11	150	47 (31.3%)	103
2011-12	158	51 (32.3%)	107

Table 2: Number of women and men in our postgraduate programme in the six academic years between 2006 and 2012.

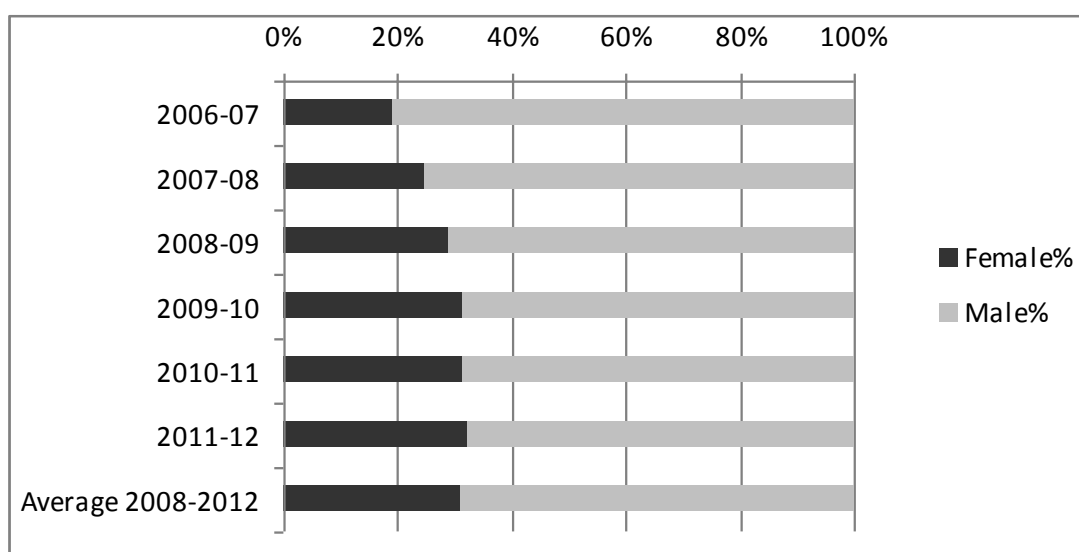


Figure 2: proportions of female:male students in our total postgraduate research student population in a given academic year.

We have a well-developed culture of encouraging female undergraduates to stay in science. The selection of final year research projects (Part IIs) is very influential in the decision of students about whether to undertake further academic study, and the current member of academic staff responsible for this process is female (Dr Keyna O'Reilly). Promising final year undergraduates are identified and encouraged by their Part II supervisors and college tutors (many of whom serve as effective role models for women in science) to consider staying in research.

In the past 6 years, 7/26 (27%) of the Oxford Materials graduates who stayed on to undertake graduate study in the department have been female – slightly below the average percentage of females in the undergraduate population over the same period, but from our leavers survey we know that at least 6 more of our female graduates went on to graduate study in other UK or international universities.

Funding graduate students:

The primary assessment of applicants for graduate studentships is by leaders of the research groups to which the student has applied, with academic ability and research potential as the key selection criteria. The department actively promotes graduate applicants for university scholarships and has many fully-funded studentships each year. Over 80% of our research students are fully funded.

Oxford's most prestigious funding award for overseas students is the Clarendon Scholarship. Over the past 4 years, three of the five Materials research students awarded a Clarendon Scholarship are/were female. Over that period, 107 Materials research students were awarded studentship funding, 34 of them female (31.8%), pro-rata to the proportion of female research students over the equivalent period.

Postgraduate completion statistics by gender:

The department makes it clear both to new graduate students and their supervisors that the expectation is that all students should submit their theses within 48 months. This expectation is emphasised in the graduate student handbook and at the induction sessions at the beginning of their research career.

Analysis of the data from all the graduate students starting in 2003-2007, shows a significant tendency for females (83%) to be more likely to submit their DPhil thesis within 48 months than males (63%). From this total cohort of 119 students (88 male/31 female), only 4 students (3 male/1 female) withdrew from their studies.

[481 words]

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

Although there is some statistical variation from year to year, the percentage of female candidates offered undergraduate places in the Materials department (33.5%) consistently exceeds the percentage of female applicants (31.1%) over the 5 years 2007-2011, see Figure 3. This analysis is based on a total of 500 applicants. We believe that this reflects an admissions process that does not disadvantage female applicants.

However, we are still not satisfied that we are successfully attracting as many well qualified female applicants to study Materials at Oxford as we should. This is discussed further below.

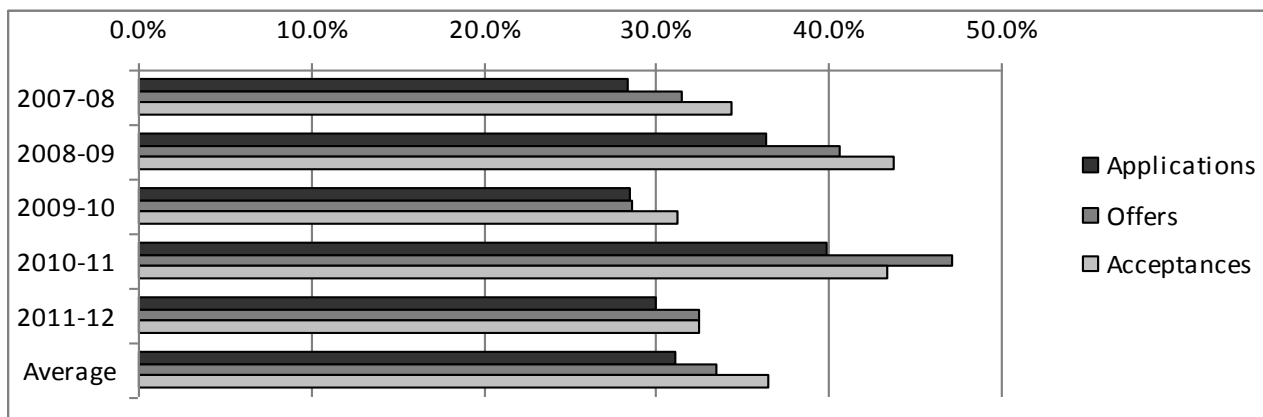


Figure 3: Proportions of females at application, offer and acceptance for our undergraduate course from 2007-2012.

Figure 4 shows the proportions of women applying for and being accepted for research degrees over the past 3 years. The average percentage of female applicants over this period was 26.7% and the average percentage of females offered graduate places was 30.6%. 54.4% of the female applicants to whom we make offers accept them and matriculate as graduate students, and 57.3% of male applicants. It is hard to see a significant gender bias in this data.

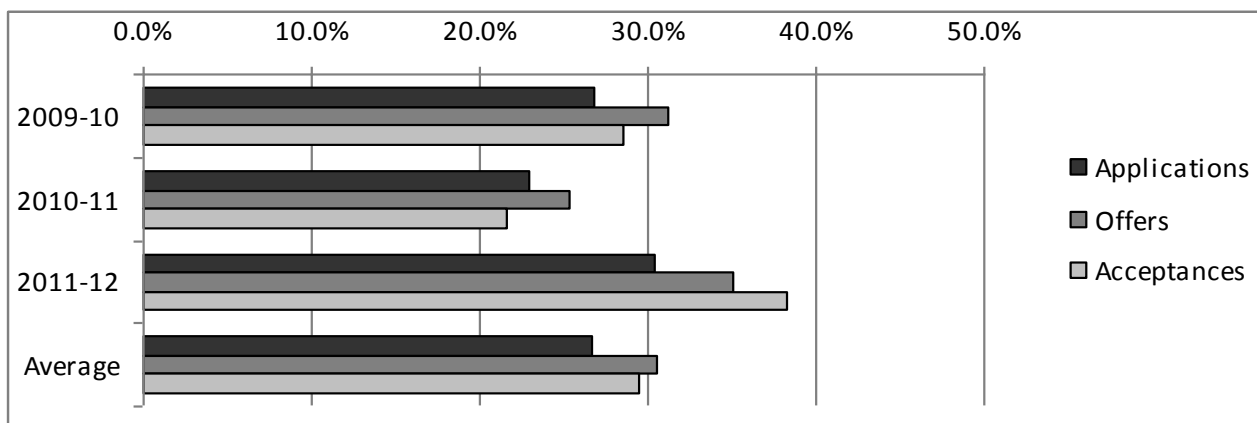


Figure 4: Proportions of females at application, offer and acceptance for our postgraduate course from 2009-2011 (average).

[169 words]

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

With the relatively small numbers of Materials students each year, there is considerable variation in the proportions of both females and males gaining the various degree classes. To provide a more statistically significant data set, we have collated results going back 11 years. Figure 5 shows 5-year rolling averages of distributions of degree class for

undergraduate women and men over this period, with a total number of candidates > 280.

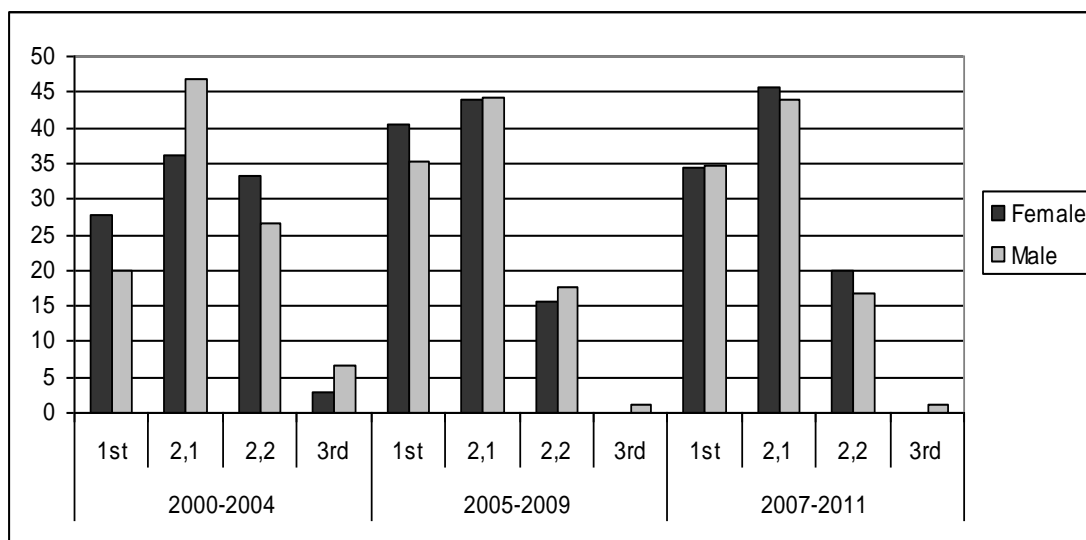


Figure 5: Proportions of males and females matriculating from 2000 – 2011 obtaining different degree classifications presented as 5-year rolling averages for 2000-2004, 2005-2009 and 2007-2011 to smooth out statistical variations from the small numbers of students in each year group.

Over this period, 34.1% of women and 30.5% of men achieved first class degrees and 75.3% of women and 76% of men achieved a 2:1 or better. The disparity in the percentage of women and men being awarded 1st class degrees in the early 2000s does not appear in the latest data, but there is clear statistical evidence that fewer women were awarded 3rds over the whole period.

We believe this data offers no evidence of any systematic poorer performance from our female candidates, but the gender balance in Finals is something we will continue to monitor closely.

[168 words]

Staff data

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

There are two categories of academic post at Oxford: Professor and Lecturer – a Lecturer roughly equating to Senior Lecturer in other UK universities. The position of Reader is being phased out, and in our data have been treated as Lecturers. A significant proportion of our research staff

are postdoctoral researchers on fixed-term contracts, including 5-year Departmental Lecturer posts and holders of externally funded fellowships.

Staff levels across the last four years are reported in Table 3. In the academic grades, it is hard to interpret the data with confidence because of the small numbers, and in particular the percentage of female lecturers varies a great deal because of volatility in the number of male lecturers. However significant changes in the past 3 years are:

- One female member of the department has just been awarded the title of Professor
- 2 of the most recent 3 academic posts filled in the Materials Department have been by female candidates.

The percentage of female researchers has been steady since 2008, averaging 23% over a period where our percentage of female graduate students averaged 30%. However, the percentage of female graduate students over the previous 3 years (when most of the female researchers were being recruited) was only 20%. Key transition points are discussed below.

[212 words]

Year	Researcher		Lecturer		Professor	
	Female	Male	Female	Male	Female	Male
2008-09	14 (22.2%)	49	2 (13.3%)	13	0	9
2009-10	16 (26.2%)	45	2 (16.6%)	10	0	8
2010-11	13 (20.6%)	50	3 (25%)	9	0	7
2011-12	15 (23.1%)	50	3 (33.3%)	6	1 (9%)	10

Table 3: Breakdown of the numbers of women and men at various academic grades within the department for the past 4 years.

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

The Materials department has had substantial turnover of tenured faculty over ten years, mostly as a result of expected retirements. The numerical details for the past 3 years are reported in Table 4. Of academic staff, 5 male professors retired, and one moved to a post in Switzerland. One male University Lecturer took early retirement, and this academic post was replaced by a female candidate.

More than 20 male and female Research Fellows and Departmental Lecturers have in the last 10 years moved into faculty positions in Oxford or elsewhere at or before the end of their contracts. These include in the past 3 years five female research fellows who took up academic posts (senior lectureships or chairs) in the UK, New Zealand, Australia, the USA and Ireland. It is a matter of some satisfaction to the department that our female colleagues are able to compete successfully for senior posts here and elsewhere.

The turnover of male post-doctoral researchers was 27 over 3 years (about 56% of the average number of male researchers at any one time) while for female researchers the number was 9 (about 64%). We do not believe that these percentages are statistically distinguishable given the small numbers. Almost all the leaving researchers of either gender went on to research posts elsewhere.

[215 words]

Table 4		In post		Leavers	
		Female	Male	Female	Male
2008-09	Professor	0	9	0	3 retirements
	Lecturer	2	13	0	1 retirement
	Researcher	14	49	6	5
2009-10	Professor	0	8	0	2 retirements
	Lecturer	2	10	0	1 retirement
	Researcher	16	45	1	13
2010-11	Professor	0	7	0	1 to new post
	Lecturer	3	9	0	0
	Researcher	13	50	2	9

Table 4: Breakdown of the turnover of women and men at various academic grades within the department between 2008 and 2011.

Supporting and advancing women's careers – maximum 5000 words

4. Key career transition points

- a) Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.
- (i) **Job application and success rates by gender and grade** – comment on any differences in recruitment between men and women at any level and say what action is being taken to address this.

This section is split into separate analysis of research posts and the different grades of academic posts.

Researchers:

In the three years from 2008 to April 2011, the department recruited to 42 postdoctoral research posts; there were 876 applicants, 129 female (16.6%) and 647 male³. Of these applicants a total of 128 were shortlisted, 22 female (17.2%) and 106 male. Typical raw data from 2008 (breakdown by gender for applicants and shortlisted) are shown in figures 6 and 7. These illustrate the significant statistical variations from post to post which make detailed interpretation of data from individual appointments difficult. However, to these posts we appointed 40 new researchers, 11 female (27.5%) and 29 male (5 positions were not filled). We can conclude that on average female applicants were statistically no more likely to be interviewed than their male counterparts but were significantly more likely to be appointed.

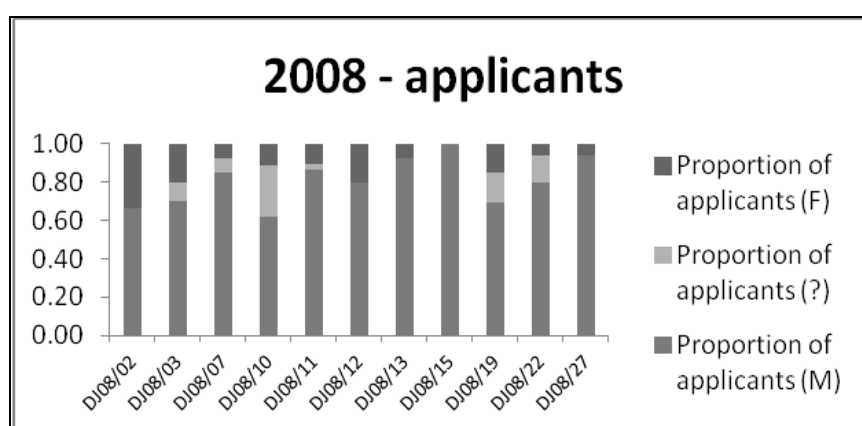


Figure 6. The proportions of women and men (and unknowns) applying for advertised postdoctoral positions in the department in 2008.

³ Of these 876 applications, 100 did not specify what sex the applicants were, and the names were not sufficiently gender specific to allow us with confidence to guess whether they were male or female. None of these candidates was shortlisted.

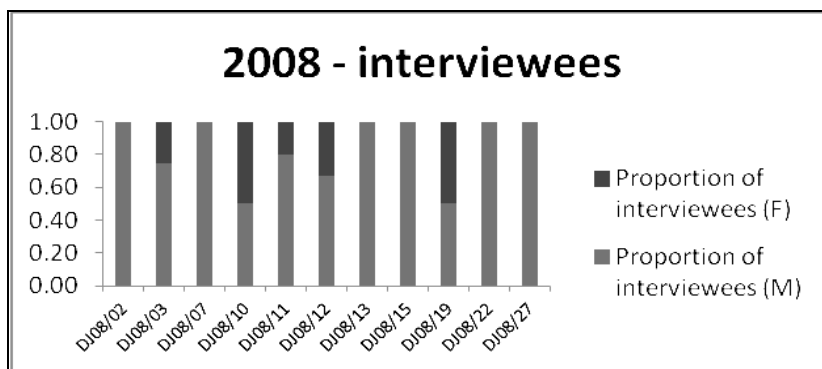


Figure 7. The proportions of women and men being shortlisted for advertised postdoctoral positions in the department in 2008.

Lecturers:

The department has only recruited two lecturers in the last five years. Of 28 applications for these 2 posts, 8 were shortlisted. Proportions of women at each stage are shown in Table 5. A significantly higher proportion of women were shortlisted than applied; one of the 2 appointees was female (and this post was first offered to another female applicant who declined it to take up a Professorship in Michigan).

	Female	Male
Applicants	7 (25%)	21
Shortlisted and interviewed	4 (50%)	4
Appointed	1 (50%)	1

Table 5. The numbers of women and men applying for, being shortlisted and offered advertised lectureships in the department between 2008 and 2011.

Professors:

The department has recruited to one statutory professorship in the past 5 years, a chair in materials modelling - a field where there are very few senior female researchers anywhere in the world. There were 38 applicants (3 female, 35 male). The panel (including external members) shortlisted 4 applicants (all male), and appointed a male.

Future plans:

The department will fill six academic posts in 2012/13 and will highlight the Department's commitment to Athena SWAN and supporting female applicants during advertising and recruitment aiming to ensure that strong female

applicants are encouraged to apply. The head of department frequently has informal discussions with potential applicants and expresses the university's stated objective to increase the representation of women, black and minority ethnic candidates in academic posts in Oxford.

[346 words]

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

There are several paths for promotion, including the step from contract researcher to independent fellowship and promotion of those holding academic appointments. The Department takes a proactive position in encouraging female candidates to apply for promotion, since we are aware that women scientists may be less likely to put themselves forward for professional advancement.

Fellowship positions:

One area where this approach has been particularly successful recently has been in encouraging younger researchers (many of them female) to apply for independent fellowships as the stepping stone to an academic career. The process involves indentifying potential high fliers, mentoring by personal interviews with the HoD matching their aspirations to opportunities, reviewing draft applications and help in preparing for interviews.

Since January 2006, the department has supported 53 applications for Royal Academy of Engineering, Royal Society, European Research Council and UK Research Council Research Fellowships, 35 from men and 18 from women. From these applications, 6 women have been successful (33%) and 9 men (25.7%)⁴.

Academic promotions:

Due to the academic staff structure explained in section 3.vii, Oxford does not run academic promotion exercises like those common in UK universities. There are Recognition of Distinction (RoD) exercises approximately every 2 years, during which academics may apply for the title of Professor as described in more detail in the 2010 University Athena Swan application. During the most recent RoD exercise (2010-11) there were seven applicants from Materials (3 female,4 male) of whom 5 were awarded the title of professor (1 female,4 male). This outcome is disappointing in terms of the obvious gender disparity.

⁴ The quoted average success rates in these competitions range from 5 – 12%

[260 words]

- b) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.
- (i) **Recruitment of staff** – comment on how the department’s recruitment processes ensure that female candidates are attracted to apply, and how the department ensures its short listing, selection processes and criteria comply with the university’s equal opportunities policies

The department enthusiastically applies all the processes recommended by Oxford University for ensuring non-discrimination in recruitment processes.

1. There is always at least one woman on every interview panel. To avoid overloading our female academic staff with these duties, the Departmental Administrator sits (ex-officio) on all postdoctoral selection panels.
2. All advertisements for academic posts in the department include the university wording: ‘Applications are particularly welcome from women and black and ethnic minority candidates who are under-represented in academic posts in Oxford’.
3. All job particulars include details on maternity leave arrangements, nurseries, playschemes for children, and equality of opportunity.
4. All external applicants meet with current members of the department to ensure transfer of information about family life in Oxford (child-care, schools, flexible working). These issues are also discussed with the selected candidates by the Departmental Administrator (for research/technical posts) or the HoD (for academic posts) at an early stage of the job offer process.
5. The department uses the University’s Bronze Athena Swan award logo (and the silver logo if our application is successful) on all advertisements, and prominently on our webpage, to try and attract as many female applicants as possible.

[194 words]

- (ii) **Support for staff at key career transition points** – having identified key areas of attrition of female staff in the department, comment on any interventions, programmes and activities that support women at the crucial stages, such as personal development training, opportunities for networking, mentoring

programmes and leadership training. Identify which have been found to work best at the different career stages.

Overview of differential attrition statistics at each stage:

The period between starting as an undergraduate student and the earliest time at which a scientist could make a competitive application for a lectureship at a Russell Group university is ~15 years. As part of our analysis of attrition rates we have tracked this progression from undergraduate to lecturer over this period. [Numbers in square brackets are the equivalent 2006 EU values for female scientists at each stage⁵.]

- Students starting our UG programmes 1997/98 to 2000/01 - **33.8% female** [31%]
- Students commencing a DPhil in Materials 2000/01 to 2004/05 - **18.6% female**, increasing in 2007/08 to 2011/12 to **34.3% female** [36%]
- Recruitment to post-doctoral positions in the Department 2008 to 2011 - **27.5% female**
- Independent research fellows in period 2008 to 2011 (ie Royal Society Fellows, etc) - **50% female**. The numbers at this stage are small (16 individuals), but taken together with the postdoctoral data there is no evidence of strong attrition of female researchers at this transition point. [33%]
- Permanent academic staff – **currently 20% female**. Clearly here is an attrition point we need to focus on. [22%]
- We have one current female professor (and 11 male). In part this reflects the historically much lower proportion of Material Scientists twenty or more years ago who were female. [11%]

Detailed analysis:

Undergraduate to doctoral student:

Over the past 6 years the percentage of female undergraduate students in the department has increased from 30 to 38.7%. Over the same period the proportion of female graduate students has increased from 19 to 32% (section 3.iv). The increase in female graduate students is partly due to a larger number of Oxford female undergraduates electing to stay on for a research degree because of positive experience in the Department.

Analysing destinations of our graduating students from the two most recent DLHE surveys (2009 & 2010 leavers, 32 students) shows 30% of our female leavers went on to further academic study while a slightly higher proportion of male leavers (36%) followed the same career path. The same survey data, shows a higher proportion of female leavers go immediately into work than the

⁵ She figures 2009

male leavers (60% as opposed to 41%). Large numbers of all graduates go onto careers in industry, teaching or business.

The department is determined to encourage as many academically strong female graduates as possible to consider studying for a doctorate. For instance we have proactively encouraged existing graduates to apply for national and international prizes, so that they can act as role models for aspiring applicants. In the past 3 years, more female students (by a factor of 2) have won major prizes than men even though they represent only 30% of the student body. For example:

- **Katie Moore**, winner of the Institute of Metals, Minerals and Mining Young Persons Lecture Competition 2010 and 3rd in Young Person's World Lecture Competition in Singapore,
- **Jenni Tilley** winner of IMMM Young Persons Lecture Competition 2011 and 3rd in Young Person's World Lecture Competition in Brazil,
- **Huichao Bi** L.L. Shreir Prize for the Best Young Scientist Presentation in the 51st Corrosion Science Symposium 2011,
- **Jennifer Brown** Institute of Metals, Minerals and Mining James S Walker Award for polymers 2010.

• **Doctoral student to postdoctoral researcher:**

We have introduced several initiatives to encourage our **own graduate** students to apply for post-doctoral positions:

1. All graduate students are encouraged to use professional and personal training opportunities provided at divisional and research council level, including networking, media training and the "Springboard" and "Navigator" programs.
2. The department believes it is very important to encourage women to consider scientific careers in industry as well as in academia. We offer opportunities for graduate students to meet with Oxford alumni (often female) from industrial partners visiting the department to give prizes and careers talks. Our Alumni Committee (which is 32% female) runs a careers evening every year.
3. We run a departmental training programme for graduate students encompassing writing skills, presentation skills, undergraduate tutoring and demonstrating. The tutoring skills classes are run by the role models Dr Susannah Speller (an RAE Research Fellow), and Dr Marina Galano, a recently appointed Tutorial Fellow in Materials.

Since matriculating in October 2001, 33 female graduate students have completed their studies. Of these 33, 7 are in permanent academic posts in universities in Europe, India and China (one here), 13 are in postdoctoral positions in European, Japanese or UK universities (six of them here), 2 are physics teachers in the UK, and 7 are in industry (2 for Rolls Royce, one for

IBM), one is awaiting a visa to take up a postdoctoral post in the USA and one works in scientific journalism in Japan. We take this to be strong evidence that our female graduate students are encouraged by their experience in the department to continue in science, and are confident and able enough to do this in major universities and industries worldwide.

Postdoctoral researcher to independent fellowship holder or junior academic post:

The department is well aware that the transition to the first independent academic post is seen as the biggest hurdle to female scientists. This was a major source of concern in the focus group meeting run by the department in March 2012.

We have mentioned in section 4(ii) the success of female members of the department in independent fellowship applications supported by the department, and often leads to progression to an academic career. For instance:

- **Catherine Bishop:** Career Development Fellow in the department in September 2005. Since 2008, senior Lecturer in Christchurch University, NZ.
- **Emmanuelle Marquis:** Dorothy Hodgkin Fellow of the Royal Society 2008. Since 2011, Assistant Professor, University of Michigan, USA
- **Marina Galano:** Career Development Fellow in the department in 2005, Royal Academy of Engineering/EPSRC research fellow 2010, Takes take up a lectureship here in 2015.
- **Valeria Nicolosi:** Marie Curie fellow in 2008, Royal Academy of Engineering/EPSRC research Fellow 2009, took up a personal chair in Nanotechnology at Trinity College, Dublin in 2012.
- **Amanda Barnard:** Glasstone Fellow in 2005 left 2008 to take up an academic appointment in Australia. Currently a group leader at CSIRO.
- **Stephanie Simmons** and **Katie Moore** completed their doctorates in 2011, and hold respectively Glasstone/St John's College and EPSRC/Trinity College fellowships.

The most important single influence on the aspirations of younger female members of the department is their day to day contact with these role models.

We also encourage younger women to use institutional advice and support, including:

1. The MPLS division training programme run by Dr Barbara Gabrys from this department for graduate students and post-docs on core

skills includes a dedicated discussion on Women in SET and gender issues. An annual divisional seminar on Applying for Personal Fellowships run by Dr Gabrys is frequently supported by our fellowship holders and academics.

2. We offer opportunities for post-docs to give lectures/tutorials and encourage those who wish to pursue an academic career to enrol in the University's Postgraduate Diploma in Learning and Teaching. It is externally accredited by the national Higher Education Academy (HEA), leading to Fellowship of HEA. In the past 3 years, 2 male and 2 female senior postdoctoral researchers have successfully completed the PGDiPLaThe.
3. We encourage all our researchers to attend Springboard⁶ (female) and Navigator (men) courses run by the university and the MPLS division as part of a researcher-specific training programme. 5 members of department staff have attended Springboard courses in the past year.
4. All our female staff are encouraged to participate in the University's *Ad Feminam* mentoring scheme run by the Oxford Learning Institute which addresses the under-representation of women in academic and administrative leadership positions at Oxford. We give similar encouragement for staff to participate in OxFEST (University of Oxford Females in Science, Engineering and Technology), a society offering information and resources for women in science involving prominent women scientists and networking opportunities for career development. Professor Grobert is a member of the Divisional Women In Science Committee.
5. The Careers Service also offers a range of services (including targeted events and networking opportunities) to support DPhil and research staff in career development. Information on this is given in all our student and departmental handbooks.

Maternity leave and fellowship applications:

The department is very conscious that maternity breaks push a career back and so may make females appear less competitive relative to their male contemporaries. We have for some time taken a proactive stance in supporting female scientists at this stage in their career (see Case History 1.)

Promotion beyond junior academic post:

Nationally, a major point of attrition is the one between lecturer and professor grade. Looking at other large UK Materials departments, the percentage of female professors is 14% (6/43). The percentage of female full professors in US Materials departments is 15% (Heads of US Materials survey in 2010), and in the EU only 7% in Engineering (no Materials data).

⁶ <http://www.mpls.ox.ac.uk/skills/courses/springboard>

Other than very rare exceptions it will be some time before those who were undergraduates in 1997 to 2001 have reached the career point where promotion to Professor could be achievable, but note that of our five female colleagues who have been permanent members of academic staff in the period 2003/04 to 2011/12, two have achieved professorships in the University's Recognition of Distinction Exercises (**40%**). In the same period eleven of twenty-one male colleagues were so recognised (**52%**).

The department is not happy with our current position of only one of our 11 professors being female, but feel that the way to improve this is to focus on making sure that we take every opportunity to appoint female lecturers, and to continue to encourage and support these female academic staff to apply for promotion.

[1621 words]

5. Career development

- a) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.
- (i) **Promotion and career development** – comment on the appraisal and career development process, and promotion criteria and whether these take into consideration responsibilities for teaching, research, administration, pastoral work and outreach work; is quality of work emphasised over quantity of work?

Promotion and career development processes for academic staff are of three distinct kinds:

1. All faculty members are appraised bi-annually with the HoD; these discussions cover activities and responsibilities, plans for future work and aspirations for promotion or external recognition. Maternity, career breaks and part-time working are taken into account by focusing upon the quality of the output with respect to equivalent time worked.
2. The University runs an approximately biennial Recognition of Distinction exercise, where academics may apply for the title of Professor and is described in more detail in the 2010 University Athena application. Promotion is explicitly based on performance across the full academic job description, including research, teaching, administration, and pastoral/outreach work. The department, is aware that females are often less likely to apply for such promotions and so they are actively encouraged to make applications.

3. Salary advancements above the standard academic scales are rare, and in the past last 10 years there have in the Materials department only been a handful of cases; all internal retention issues. 2 out of 4 cases were for female staff members.

The department also regards supporting the career prospects of support staff as being of considerable importance. Many of these staff are female, and they make a vital contribution to the department. In the last three years the Administrator has supported 5 (4 female) applications for promotion to a higher grade – all of them successful.

[236 words]

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

Oxford is a complex university, and the collegiate structure is especially confusing to newcomers. All new staff in the department are encouraged to take advantage of the online induction course '**Welcome to the University**' run by the Oxford Learning Institute, which contains a module on equality and diversity. In addition, there are termly '**Welcome to Oxford**' events for new researchers run jointly by the Careers Service and OLI. A newcomers' party is held in the department every October, when all new arrivals (staff, students and visitors) can meet academic and administrative staff in a social context.

Different types of incoming personnel are given separate induction processes. In addition to the substantial college provision, a half day departmental induction event is run for new undergraduates. New graduate students have a 2-day departmental induction event. Each new post-doctoral researcher undergoes an individual induction session with the Departmental Administrator. Gender equality is emphasised at all these, and the mechanisms and availability of informal support and advice are clearly identified.

We welcome new academic staff prominently on our departmental web page. The department announces the arrival of new administrative, technical and secretarial staff by e-mail to all members of the department. A new initiative we intend to introduce in 2012 is to email details of new staff (academic and research), with their room and phone numbers, to all members of the department. All new academic staff are provided with a mentor initially, to explain departmental processes, and to outline avenues of professional development within department and the University. Currently this role is filled by the HoD.

During our self-assessment, several post-doctoral researchers expressed interest in having a senior academic staff mentor in addition to their primary supervisor. As a result we have decided:

1. To invite all postdoctoral researchers to attend regular 'senior staff' coffee sessions;
2. To introduce in 2012 a system of mentors for independent fellowship holders;
3. To investigate mid-term reviews for all postdoctoral staff.

Networking:

Networking between researchers is facilitated by:

1. Social space provided in the cafeteria shared with Engineering;
2. Departmental (lectures, seminars and social events);
3. Bi-weekly academic coffee (Tuesdays and Thursdays);
4. Weekly free coffee for research students and final year undergraduates facilitating informal peer support beyond individual research groups and including final year undergraduates considering DPhil research;.
5. Regular 'research away days' focussed on theme-specific areas and open to all levels of staff and researchers in the department.

During our self-assessment it became clear that not all staff felt fully informed on the departmental policy on flexible working, and as a result we will before October 2012 create a new intranet page with a detailed explanation of our procedures

[444 words]

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

In addition to the support already identified above for all students:

- Each college has an established welfare system, with tutors of both sexes and a *women's officer* or *tutor for women*.
- Seven colleges admit Materials students. All undergraduates have an individual college tutor responsible for their academic progress and pastoral care as well as access to 3 or 4 other tutors (including at least 1 female) whom they meet often weekly.

- All postgraduate students have, in addition to their formal supervisors departmental advisors to whom they can turn for impartial advice and mentoring. Many of these advisors are female academics or senior researchers. All graduate students are encouraged during induction and regularly during their projects to be aware of gender issues, and to take part in events on gender issues, such as those run by the Oxford Women's Network and the other divisional or university schemes.

[149 words]

6. Organisation and culture

- a) Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.
 - (i) **Male and female representation on committees** – provide a breakdown by committee and explain any differences between male and female representation. Explain how potential members are identified.

The numbers of individuals on the main department committees are given in Table 5. The department takes positive action to ensure appropriate female representation without overburdening our female staff with administrative duties.

The **Departmental Committee** is an advisory body to the Head of Department. Its membership represents the faculty, administrative and senior research staff.

The **Department of Materials Academic Committee** handles all matters relating to the academic programme.

The **Research Opportunities Group** oversees the departmental strategy in research applications.

The **Safety Committee** is responsible for monitoring and guiding safe practice in all the departmental activities.

The **Joint Consultative Committee for Undergraduates** (JCCU) and the Joint Consultative Committee for graduates (JCCG) provide the interface between undergraduate and graduate students and staff. Each year-group elects 3 student representatives to JCCU and JCCG, with an expectation that on each committee at least one representative in each year group will be female and at least one non-UK.

Committee	Female	Male
Departmental Committee	2	8
Academic Committee	1 + 1	1 + 4
Research Opportunities Group	3	8
Safety Committee	5	2+9
JCCU	4 + 2	9 + 2
JCCG	3 + 1	8 + 2

Table 5: Breakdown of the numbers of women and men on the 6 main committees in the department in 2012. Where there are 2 numbers the first are student members and the second staff members. These numbers have not changed significantly for the past 3 years.

[153 words]

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

Numbers of research and administrative staff with fixed-term and permanent contracts are given in Table 6. Most of the research staff are appointed to externally funded fixed-term contracts. The difference in the proportions of males and females on the different kinds of contracts reflects the different proportions of female staff on research and on academic contracts, and the increasing fraction of female staff on permanent contracts reflects recent female academic staff appointments.

Table 6	Fixed term		Permanent	
	Female	Male	Female	Male
2008-09	18 (28.6%)	45	6 (15.4%)	33
2009-10	14 (25%)	42	6 (16.2%)	31
2010-11	13 (21.7%)	47	8 (23.5%)	26

Table 6: The breakdown of staff on fixed-term and permanent contract within the department between 2008 and 2011.

[72 words]

- b) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.
- (i) **Representation on decision-making committees** – comment on evidence of gender equality in the mechanism for selecting representatives. What evidence is there that women are encouraged to sit on a range of influential committees inside and outside the department? How is the issue of ‘committee overload’ addressed where there are small numbers of female staff?

Oxford operates a 5-year probation system for academic staff, and the department is committed to offering a reduced load during this time. Apart from ex-officio posts, membership of all committees is by rotation, and we try to ensure that there is suitable gender representation on all committees without overburdening our female members of staff. Other factors that are taken into account when seeking new committee members are, college and family commitments, professional contributions outside the university and technical or subject expertise.

[81 words]

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

The workload model at Oxford involves both college and departmental responsibilities. 50% of the departmental academic staff are fellows of undergraduate colleges, where they are contracted to do 6 hours tutoring pw unless they take on additional college responsibilities. University Lecturers in graduate colleges have no direct tutorial load, but they contribute to equivalent teaching (or other activities) within the department by arrangement with the HoD. Professorial fellows have no tutorial responsibilities.

At departmental level all academics contribute to teaching, research, examining and administration. The Head of Department allocates the administrative loads to individuals, in discussion with the Director of Studies, and after factoring in past teaching, administrative and examining loads. Careful monitoring and analysis of this overall workload data shows that men and women carry equal teaching and administrative responsibilities. The departmental Academic Committee has oversight of these duties 2 years in advance.

The University has a sabbatical system, where faculty can ask for relief from duties for one term for every six. Cover for courses and administrative duties during sabbaticals is provided by colleagues on a quid pro quo basis, encouraging a culture of flexible working. Sabbatical periods are also opportunities to offer teaching experience to younger researchers. Many of our younger female colleagues have enthusiastically contributed to lecturing and practical class demonstration in the past 3 years. Currently, Dr Susannah Speller gives a first year lecture course and Dr Katie Moore is senior demonstrator for a 2nd year practical.

The department does not have a formal workload model because we believe it is important that there is flexibility for staff to develop their own working methods, to find their own work-life balance, and to vary the emphasis on research, teaching, and administration through their careers, or as new opportunities arise. Recent examples of this are reductions in teaching loads for staff with (a) family responsibilities like illness or to support young children, (b) running large research grants, and (c) substantial administrative responsibilities outside the department. No request for a relief from, or change of, duties has been refused in the past 6 years, and both male and female staff have benefitted from relief from teaching (and occasionally all) duties as a result of circumstances of types (a), (b) and (c).

[373 words]

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

In the past few years the department has made a number of changes introduced to redefine 'core hours', especially for social events:

1. The annual Christmas party has been moved from an evening function to a 4:30 start to allow staff with family responsibilities to attend.
2. The weekly departmental seminar is timetabled at 4:00 pm for the same reason.
3. All committees start at 2pm and have agendas circulated in advance to allow those who cannot attend to send input in *in absentia*.

[84 words]

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

The small size of the Materials Department means that it is easy to encourage everyone from undergraduates to professors to know each

other, and there is a deliberate aim to make it an informal and friendly place to work. It is common that staff bring children into work for periods during school holidays and they are invited to bring families to all social events. There are several married couples working in the department, allowing flexibility in working arrangements to cover school holidays etc.

During the preparation of this application, the panel reviewed the Department of Zoology's *Parents Factsheet*. We regard this as extremely helpful and a model of good practice, and we will introduce our own version of this factsheet during 2012.

The focus group report highlighted a desire to have more opportunities for “..academics at various levels to mingle..” and “..provide a platform for mixing and mingling to help shape futures..” We will review this within our action plan.

[159 words]

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

There is a strong commitment to outreach at all levels of the department. Many male and female staff and researchers engage in activities with schools and childrens' groups. Some of our of events are targeted to increase our pool of applicants, but many are to interest younger children in Science

- In the past 3 years > 25 staff, researchers and students have volunteered at Science days at the University Museum, ScienceOxford's Saturday Science Club, run stalls at Wow!How? events, contributed to University's Women in Science Open Days, participated in “I'm a scientist GMOOH”, and CPD courses for Chemistry Teachers
- We demonstrate our unique remotely accessed scanning electron microscope (CyberSEM⁷) at more than 20 public events each year.
- Members of the department have presented exhibits at the Royal Society Summer Science Exhibitions in 2010 and again in 2012.
- Many staff members have embraced the opportunities offered by new media, and contribute to science blogs⁸
- Professor Grobert contributes to youtube and other downloadable commentaries on women in science⁹

⁷ http://webcast.oii.ox.ac.uk/?view=Webcast&ID=20110226_345

⁸ quantum robins (http://www.ox.ac.uk/media/science_blog/110121.html), advanced electron microscopy (http://www.ox.ac.uk/media/science_blog/091103.html), healing cleft palates (http://www.ox.ac.uk/media/science_blog/100319.html) and on nuclear policy (<http://oxford.academia.edu/JamesMarrow>)

- Dr Simon Benjamin has authored widely viewed Podcasts on Quantum Nanotechnology (<http://podcasts.ox.ac.uk/people/simon-c-benjamin>)
- Presentations to House of Lords committees (Grobert)
- Professor Grobert was producer of the WomenInNano Documentary (<http://www.vega.org.uk/video/programme/206>)

[203 words]

7. Flexibility and managing career breaks

- a) Provide data for the past three years (where possible with clearly labelled graphical illustrations) on the following with commentary on their significance and how they have affected action planning.
- (i) **Maternity return rate** – comment on whether maternity return rate in the department has improved or deteriorated and any plans for further improvement. If the department is unable to provide a maternity return rate, please explain why.

Oxford University offers one of the most generous maternity leave schemes in the HEI sector. All eligible staff (including academic and research staff) are entitled to 52 weeks' leave: 26 on full pay, 13 on SMP, and 13 unpaid. In the last 3 years two postdoctoral research assistants in the department and four members of support staff have taken maternity leave. All have either returned to work at the end of the period, or plan to, some returning to flexible working arrangements.

[82 words]

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

The rate of application for paternity leave amongst academic staff is low because our working pattern makes it easy to take leave informally. In the last 3 years 2 Professors 1 Departmental Lecturer and 6 postdoctoral researchers have taken officially notified paternity leave. The department has had no requests for adoption leave in past 10 years.

The department plans that in future if any member of staff is not offered appropriate paternity provision by their funding agency, the department will cover any additional costs of paternity leave.

⁹ <http://www.youtube.com/watch?v=I3IRDG1HAmA>,
 Vega Science Trust WomenScientists (<http://vega.org.uk/video/series/25>)
 Vega Science Trust WomenInNano Documentary (<http://vega.org.uk/video/programme/302>)
 Diversity Booklet (<http://www.diversity-fp7.eu/Documents/booklet.pdf>)

[87 words]

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

The starting position is that all requests for flexible working should be granted unless we can foresee a severe effect on operational matters.

Academic staff can work flexibly without formal agreement with the department. Over the past 15 years, 17/22 academic staff with children have done this (including most members of the working group). An informal poll of members of faculty with young children revealed they all brought their children into the department during working hours when they had problems with childcare etc. Similarly, many administrative, technical and academic staff take time, often at very short notice, to support ageing parents.

Recent specific examples of flexible working for family or other commitments include:

- A finance staff member works 80% fte, and has tailored her hours over 4 days to meet child care needs.
- Another member of the support staff was granted additional unpaid annual leave to support elderly parents.
- Requests to look after sick children are supported in a variety of ways, including a mixture of unpaid and annual leave, some element of 'home working' and making up missing time by occasional longer days.
- Supporting staff taking additional unpaid leave during long vacations as part of their home/work life balance
- One male member of the academic staff requested sabbatical leave to take care of his wife who was seriously ill. The department supported this, and continued the arrangement for a longer period than initially requested (15 months in total) until she was fully restored to health.

[251 words]

- b) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.
- (i) **Flexible working** – comment on the numbers of staff working flexibly and their grades and gender, whether there is a formal or informal system, the support and training provided for

managers in promoting and managing flexible working arrangements, and how the department raises awareness of the options available.

We strongly support flexible working at all levels, and examples of formal arrangements have been given above.

However, following discussion with the focus group, and amongst the working panel, it was felt we could improve the awareness of opportunities for flexible working by drafting a Family Factsheet as part of our action plan to ensure that this support is more transparent. This will be given to all extant and newly recruited staff on arrival, and be prominently displayed on the departmental website.

[82 words]

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

During maternity leave (as for sabbatical leave), teaching responsibilities are covered by colleagues. Both of the faculty who have taken maternity leave recently have had their teaching covered by other members of staff. In our action plan we will consider introducing a formal new scheme for reduced teaching commitments for the first year after maternity leave.

An important issue for staff returning from maternity leave is childcare. The University and some colleges operate childcare schemes, but these can have long waiting lists. A number of staff have had to purchase places at private nurseries before they were offered places through the University scheme. The department has a sponsored university nursery place details of which will be included in the family factsheet

[121 words]

8. Any other comments – maximum 500 words

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

An important aspect of working on this Athena SWAN application has been the opportunity to focus on how policies and protocols in the department actually operate, and perhaps most significantly the degree to which they are

understood by staff and students. Although we think that the department is already a supportive and friendly place in which to work, the focus group and the panel discussions with students and staff have been very useful in identifying areas where we can do better. It is clear that the Department needs to improve lines of communication so that our staff do not have to seek out explanations of our policies and ethos, but have them presented transparently, regularly and accessibly. We must work on the information and advice available on our web pages, staff handbooks and new factsheets to inform staff and students about the systems that provide training and support, and the flexibility that is available in the department to cater for individual needs and circumstances. Our plans to improve our communication are clearly identified in our Action Plan.

We are particularly keen to move towards a situation where staff with 'hidden' or potential caring responsibilities are aware that help is available to them, and that they can be supported without detriment to their career. Particularly worrying feedback from the female focus group was a feeling that younger female staff or researchers might be perceived to be "...not serious about their career.." if they brought up the subject of planning for a family. This will be a major focus of our activities looking forward.

While we do not believe that the data analysis presented above identifies clear attrition points where a simple change of attitude or process in the department will increase at a stroke the number of senior women scientists, the beneficial and supportive effect of female role models on the ambition and aspirations of their younger colleagues could be harnessed more effectively in the department.

[325 words]

9. Action plan

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

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

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

9. Action Plan

No	Description of action	Action already taken	Further action required	Responsibility	Timescale	Evaluation
1. Baseline Data and Supporting Evidence						
1.1	To promote the department's ongoing SWAN activities a smaller team will continue to meet termly to review progress on the individual targets in this action plan	The self assessment team suggests that this group should include representatives from academic members of staff, postdoctoral research assistants, graduate students and administrative/technical staff.	<ul style="list-style-type: none"> Recruit volunteers to join the group. Set up termly meetings Agenda to focus initially on carrying forward this action plan Liaison with the University Equality and Diversity Unit, and with the University Athena SWAN Committee. Add Athena SWAN as a standing item to Departmental Committee and Academic Committee. Publish an annual report on progress on departmental intranet. Planning for renewal application in 2015 	<ul style="list-style-type: none"> Head of Department Athena SWAN Committee Administrator 	<ul style="list-style-type: none"> Regular progress over the next 3 years Group to be set up in Michaelmas Term 2012 Termly meetings 	Regular updates to: <ul style="list-style-type: none"> Department staff Departmental Committees Academic Committees
1.2	Monitoring of gender balance across, and performance of female/male UG, PG students, post-docs, independent fellowship holders, career progression, and permanent academic staff	Data collection for UG/PG already in place	<ul style="list-style-type: none"> Expand data collection for post-docs, fellowship holders Identify other areas of gender monitoring, e.g. impact of outreach work 	<ul style="list-style-type: none"> Athena SWAN Director of Studies Administrator Head of Department 	Regular progress over the next 3 years	Updated documentation with more information
2. UG and PG Students						
2.1	Reaching out to 6 th formers	The Department has well established outreach activities particularly for 6 th formers	We will put greater emphasis on ensuring that 6 th form visitors are exposed to staff and student helpers with an appropriate gender balance.	School liaison officer	Summer 2012	Report to Athena SWAN Committee
2.2	UG/PG Prizes	The Department proactively encourages existing UG/PG to apply for national and international prizes, so that they can act as role	We will advertise opportunities to apply for prizes more widely and encourage senior staff to nominate individuals. We will monitor gender balance in the Award of Departmental	<ul style="list-style-type: none"> Athena SWAN Director of Studies 	Summer 2012	Monitoring awards and reporting to Departmental Committees

		models for aspiring applicants	prizes that are based on academic results	<ul style="list-style-type: none"> • Head of Department 		
3. Key Career Transition Points, Appointments and Promotions						
3.1	In future all recruitment advertisements will highlight the Department's commitment to Athena SWAN and the support we give especially to female applicants during the recruitment process	Head of Department frequently has informal discussions with potential applicants for academic posts, emphasising the university's stated objective to increase the representation of women, black and minority ethnic candidates in academic posts in Oxford	<p>For all recruitment:</p> <ul style="list-style-type: none"> • Display of the Athena SWAN logo on our departmental website and within job descriptions • Evaluation of documentation to make all job descriptions more attractive to women • Ensure that recruitment and interview timing allows for any family commitments (both for the interviewees and selection panel) • Brief members of department on these new requirements 	<ul style="list-style-type: none"> • Administrator • Chairs of Recruitment panels 	Implement from June 2012 onwards	<ul style="list-style-type: none"> • Updated recruitment documentation • Improved information available for candidates
3.2	New members of staff	We currently welcome new members of academic staff with prominent announcements on our webpage	<ul style="list-style-type: none"> • We plan in future to expand this with emails to everyone in the department giving details of new staff (academic and research) with their location and contact details • We will also review any other measures which we can implement to improve the initial experience of members of staff when they arrive in the department 	<ul style="list-style-type: none"> • Athena SWAN Committee • Head of Department • Administrator 	Implement as soon as possible, certainly by July 2012	<ul style="list-style-type: none"> • Emails welcoming new members of staff • More website information available
3.3	Induction and Training	We have identified the need to integrate training opportunities for research staff into the department, ensuring that postdoctoral research assistants in particular are aware of what is available	We plan to work with Alison Trinder at division level to integrate and tailor training opportunities to our department. We are especially keen to encourage younger female staff (Fellows, Lecturers and support staff) onto the Springboard Course, AdFeminam scheme, and OxFEST	Athena SWAN Committee	Start the process in June 2012	<ul style="list-style-type: none"> • Regular updates on training • Sessions run in the department for Materials staff
3.4	Promotion and career development processes	Academic promotion exercises take place every 2-3 years. The	We will actively encourage females to make applications. It will be an ongoing activity in	<ul style="list-style-type: none"> • Head of 	We will implement this by the end of	Report to Departmental

	for academic staff	department, is aware that females are often less likely to apply for such promotions	order to help candidates with potential to prepare and where helpful improve weaker parts of their CV	Department <ul style="list-style-type: none"> • Administrator • Mentors 	May 2012	Committee
4. Career Advice and Support						
4.1	Networking for research staff	We have previously provided monthly coffee sessions for postdoctoral researchers to encourage networking across the various research groups and areas, but these were poorly supported	In future we will invite all post-doctoral researchers to join one of our twice-weekly 'senior staff' coffee sessions. This should encourage general discussions and networking not only with other post-docs, but also with academic members of staff and members of the Admin team	<ul style="list-style-type: none"> • Head of Department • Administrator 	We will implement this by the end of May 2012	Review of attendance at the coffee sessions at end 2012 to decide if this is an effective initiative
4.2	We will introduce a system of mentors for independent fellowship holders and post-docs	Currently Fellows are encouraged to meet regularly with both the Head of Department and other members of academic staff. Fellowship holders feel, however, that they would benefit from a more transparent system for mentoring	We will consult more widely with Fellowship holders and academic staff with a view to establishing a mentoring system that suits their needs	<ul style="list-style-type: none"> • Head of Department • Athena SWAN Committee 	Consultation to start in May, with a view to implementing the system by January 2013 (to allow for training)	Mentors identified
4.3	Mid term reviews for postdoctoral research staff	Postdoctoral research assistants currently have an induction with the Administrator, their supervisor and various other senior members of the department (such as the Head of IT)	Induction with the Administrator covers aspects of the department and the post-doc's research on which they need to be briefed at the start of their contract. We would like to introduce mid-term reviews for all post-docs (especially those on fixed term contracts) to give more information at this stage on career opportunities and also to discuss progress with their project and any other career development plans.	<ul style="list-style-type: none"> • Administrator • Supervisors 	Implementation of this scheme should start in August 2012	Regular diary meetings with post-docs
4.5	Internal review of independent fellowship applications	The Department encourages and supports postdoctoral researchers to apply for independent fellowships. Informal reviewing of applications and advice is generally provided by the Head of Department and other senior	<ul style="list-style-type: none"> • We will establish a formal contact point for post-doctoral researchers who wish to apply for independent fellowships/funding. • Advice as to whom to contact within the Department can be sought from Administrator or during the Mid Term 	<ul style="list-style-type: none"> • Head of Department • Administrator • Research Opportunities Group 	Implementation of this scheme should start in August 2012	Regular diary meetings with post-docs

		academics	Review			
4.6	Networking of UG/PG/Postdocs with Industry/Academia	The Department offers opportunities for undergraduate and research students and postdoctoral research assistants to meet with Oxford alumni (often female) from industrial partners visiting the department to give prizes and careers talks and at the annual careers evening run by our Director of Studies with the help of our Alumni Committee (which is 32% female) .	We will make these opportunities more visible by: <ul style="list-style-type: none"> • Further encouraging individuals to attend • Continue to send out information by email • Adding events to the calendar of the Department webpage 	Athena SWAN Committee Director of Studies Deputy Administrator (Academic)	January 2013	Circulation of information Update of website
5. Culture, Communications and Departmental Organization						
5.1	We will set up a departmental website page giving general information to staff as well as details of flexible leave options, maternity leave, nursery places, etc.	Members of staff are already benefitting from these options, but feedback from the consultation exercise suggests that they are not currently publicised sufficiently well across the whole department	<ul style="list-style-type: none"> • Information to be set up on special (easily accessed) page on the website • Consult on which issues are important to members of the department • Investigating the possibility of introducing current members of staff who have benefitted from flexibility and/or maternity leave to advise those contemplating taking these options 	Administrator	Consultation to start in June, website to be implemented by October 2012	Regular updates
5.2	To support the more informative Materials website we will also put together a Factsheet on support for parents and giving details of flexible working	The department already supports requests for flexible working, maternity leave, etc, but this support is not sufficiently well known in the department	The Athena SWAN Committee will work with the Administrator to draft a factsheet which will be given to all existing and new members of staff	<ul style="list-style-type: none"> • Athena SWAN Committee • Administrator 	Factsheet to be drafted and agreed ready for circulation in early September 2012	Production of the factsheet, which will incorporate regular updates
5.3	We wish to ensure that all members of staff are aware that they are eligible to take maternity and paternity leave	Currently the department approves all applications for maternity and paternity leave – and will continue to do so	<ul style="list-style-type: none"> • In future where funding agencies do not pay for paternity leave the department will fund the cost • We will include information about this both on our new website and also within the 	Administrator	June/October 2012	Information included on website and in factsheet

			factsheet mentioned above			
5.4	Sponsored University Nursery Place	The department has purchased a sponsored place on the waiting list with the University Nursery	<ul style="list-style-type: none"> • We will ensure that this is advertised both on the website and within the factsheet and establish a process for awarding this to the most deserving case if there is more than one application to use it • We will also advertise this option immediately in case there is already a potential user who does not know it exists 	<ul style="list-style-type: none"> • Athena SWAN Committee • Administrator 	May 2012	The availability of the place will be advertised
5.5	Introduction of a formal scheme for reduced teaching commitments on return from maternity leave	The department supports academic staff returning from maternity leave currently with an informal scheme to support an initially reduced teaching load	The department plans to implement a formal scheme to support mothers returning from maternity leave by providing cover so that they may have a reduced teaching load for a full year after their return	<ul style="list-style-type: none"> • Head of Department • Director of Studies 	January 2013 (to allow for approval within the relevant departmental committees)	<ul style="list-style-type: none"> • A formal scheme to support mothers in reduced teaching commitments initially • Details included on website and within factsheet
5.6	Departmental Committees to avoid clashing with school half term and holiday dates where possible	One suggestion which was discussed as part of our self-assessment was to ensure that in future the department should (where possible) avoid timetabling departmental committee meetings during school half term holidays	<ul style="list-style-type: none"> • We will in future identify these dates and check that regular departmental committee meetings do not fall in these holiday periods if at all possible, moving them when necessary • The dates will be added to the departmental website calendar so that they can be checked against meeting dates and committees informed that they should avoid these times for their meetings 	<ul style="list-style-type: none"> • Administrator • relevant Committee Secretary • Head of Department Secretary 	September 2012	Relevant committee dates will be changed when necessary
5.7	Outstanding Role Models. To ensure that portraits and photographs of 'outstanding scientists' around the	Preliminary discussion at Athena SWAN Committee Meeting	We will arrange for photographs of groundbreaking female researchers to be displayed in the department. These will include:	Athena SWAN Committee	Summer 2012	Webpage updates, photographs and images in department,

	department do not show a significant male bias		<ul style="list-style-type: none"> • 'The First Generation of Female Professors' (Petford-Long, Grobert) • Student, Post-docs, and Senior Research Fellows who were awarded prizes • The undergraduate student recruitment brochure and pamphlet are currently being updated and we will ensure that there is a representative spread of male and female images included 			student handbook
5.8	Introducing new staff to the Department	We welcome new academic staff prominently on our departmental web page. The department announces the arrival of new administrative, technical and secretarial staff by e-mail to all members of the department	A new initiative we intend to introduce in 2012 is to email details of new staff (academic and research), with their room and phone numbers, to all members of the department.	Spring 2012	<ul style="list-style-type: none"> • Head of Department • Head of Department Secretary 	Email updates
6. Career breaks/flexible working						
6.1	Flexible working	Several members of the Department have already benefited from the Departments flexible working / career break policies	See Action 5.1			

For Silver Department awards only

10. Case study: impacting on individuals – maximum 1000 words

Describe how the department's SWAN activities have benefitted two individuals working in the department. One of these case studies should be a member of the self assessment team, the other someone else in the department. More information on case studies is available in the guidance.

We have deliberately chosen case histories that reflect the application of our Athena SWAN activities to female staff with [1] an 'academic' trajectory and [2] a technical support post. These support posts are important in setting the ethos of the department as a female-friendly environment to work as well as supporting departmental aspirations to undertake world-class research.

Case history 1:

Dr Susannah Speller completed her DPhil in the Materials Department in 2000. She is married to a local teacher who works full time. She took 2 periods of maternity leave (July 2004 - Feb 2005 and April – October 2006) supported initially by an EPSRC research grant held by Professor Grovenor. The department enthusiastically supported her successful application for a Royal Academy of Engineering Fellowship in 2005, and then agreed with Dr Speller and the RAE a working pattern that suited her changing family responsibilities as they developed and as the children got older. So she worked 50% FTE from October 2005 and then 60% from June 2008 to the present, with the fellowship end date extended accordingly (with the full support and encouragement of the RAE). Dr Speller has been able to develop her CV so she is now able to compete for substantive academic posts.

Case history 2:

Sanna Pippo-Henderson started in her post as the Chemicals and Materials Laboratory Support Technician in December 2008. She took maternity leave for a year from March 2010 and requested that when she returned she should work part time for 3 days a week. The department considered this request, but felt that the post was so important to fulfilling our safety responsibilities and providing support to the experimental groups that we could not consider it to be held at less than 100% FTE. However we felt that this would be a good opportunity to move to a job share arrangement, if we could find a suitable candidate. In September 2011 **Maria Thompson** joined the team and the two provide an excellent service to the department, especially as we have arranged for them to overlap for half a day each Wednesday. Sanna is now on her second period of maternity leave, and while we have recruited a replacement to cover this period, we will look forward to her returning to the

department and to the job share arrangement which works so well both for her and Maria, enabling them both to have time at home with their families.

[342 words]