



**Professor Eamonn O'Neill, BA MSc PhD**  
*Professor of Computer Science*  
*Head of Department*  
*Royal Society Industry Fellow*

**Department of Computer Science**

Bath BA2 7AY United Kingdom  
Telephone +44 (0)1225 383216  
Facsimile +44 (0)1225 383493  
Email eamonn@cs.bath.ac.uk  
<http://www.bath.ac.uk/comp-sci>

17 April 2015

Dear Ms Dickinson

I wholeheartedly support our departmental Athena SWAN Bronze Award and am committed to the implementation of our Action Plan. The department's mission is to be a leader in computer science research and education; to deliver this mission we need to nurture talent irrespective of gender. We face an historic under-representation of women in computer science and related occupations. Our ambition is to make a significant contribution to addressing this imbalance. We have made progress through our aim of attracting and supporting high-achieving students and staff of both genders but there is still much to improve upon. The measures in our Action Plan are supported by the entire department.

Effecting real change in women's position within our discipline cannot be achieved by working only within a single university. Girls are under-represented in computing related study at school. Women are under-represented in computing related undergraduate courses. Hence, we are planning early interventions to enthuse young women about pursuing computer science. Our Action Plan combines departmental activities and outreach activities in schools.

Significant progress in including and promoting women in computing requires action on a national scale, since those leaving school to pursue higher education in computer science will not necessarily apply to our university even if our outreach activities provided their inspiration. For our part, if a girl leaves school inspired by our activities to become a computer scientist at any university, we will have achieved something. Our outreach work in schools includes developing the new national curriculum for Computer Science through the Computing at Schools network, working with the International Baccalaureate Organisation, and organising workshops in local schools, all with an emphasis on engaging the potential female computer scientists of the future.

From next academic year we will trial all-women Open Days for potential students, complementing the standard department and university Open Days. Our work with female undergraduates includes support for their participation in the BCS Women Lovelace Colloquium, a national conference for women undergraduates in computing. For the past six years Bath has had more students invited to the Lovelace Colloquium than any other UK university and has generally won two or three prizes annually. We mentor and advise our postgraduate students and researchers, including encouraging them to participate in the Bath Science Academy which provides academic careers training. This process is overseen in the department by our female Director of Research and at the university level by our female Pro-Vice Chancellor.

We are committed to improving our staff gender ratio and supporting the career progression of our female colleagues. In the past three years we have seen two promotions of women Lecturers, and expect to maintain this positive movement. We will actively encourage women applicants for positions at all levels.

In the department we know well the challenges of maintaining an appropriate work/life balance. The department is responsive to requests for flexible working, schedules meetings and events within sociable hours and provides a supportive introduction to new staff and maternity leave returners. We are committed to carrying out the actions we propose.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Eamonn O'Neill', written in a cursive style.

Eamonn O'Neill



## Athena SWAN Bronze department award application

**Name of university:** University of Bath

**Department:** Department of Computer Science

**Date of application:** April 2015

**Date of university Bronze and/or Silver SWAN award:** April 2014 University Bronze.

**Contact for application:** Prof Nicolai Vorobjov

**Email:** nnv@cs.bath.ac.uk

**Telephone:** 01225 386104

**Departmental website address:** <http://www.bath.ac.uk/comp-sci/>

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

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

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

### Sections to be included

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

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

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

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

See preceding letter. [500 words]

#### List of acronyms used in this document

<b>AP</b>	Action Plan
<b>BCS</b>	British Computer Society
<b>CAS</b>	Computing at Schools network
<b>DEC</b>	Department Executive Committee
<b>DoS</b>	Director of Studies
<b>DSAT</b>	Departmental Self-Assessment Team
<b>HoD</b>	Head of Department
<b>IT</b>	Information Technologies
<b>PAP</b>	Personal Action Plan
<b>PDRA</b>	Post-Doctoral Research Assistant
<b>PGR</b>	Post-Graduate Researcher
<b>SDPR</b>	Staff Development and Performance Review
<b>SSLC</b>	Staff-Student Liaison Committee
<b>SWAN</b>	Athena SWAN
<b>UG</b>	Undergraduate (students, programmes etc)
<b>USAT</b>	University Self-Assessment Team

## 2. The self-assessment process: maximum 1000 words

Describe the self-assessment process. This should include:

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

*The departmental self-assessment team (DSAT) has the following members.*

*Dr Paola Bruscoli is a Research Fellow. She previously worked as a lecturer and researcher in Germany, France, and UK. She has two daughters and her husband is also an academic. Paola is interested in how institutional policies influence mobility, and impact on career progression and work-life balance.*

*Dr Joanna Bryson is a Reader, the leader of the Intelligent Systems group in the department. She is a member of University's Senate, Court and Council, and the department Research Committee. She is in a dual academic-career family.*

*Dr Ana Calderon was (until 01/2015) a Research Associate in the department and was previously one of our PhD students. Ana balances work and life with two young children. From 01/2015 Ana has been a Lecturer at Cardiff Metropolitan University.*

*Prof James Davenport has been Head of the School of Mathematical Sciences (of which Computer Science was a part until 2001), and has been a Director of Studies. He is a key member of the British Computer Society Computing at School initiative. He is a carer.*

*Dr Hilary Johnson is a Reader, the department's Director of Research and member of the departmental executive committee (DEC). She has supervised several female PhD students and been involved in multidisciplinary research projects that have employed female researchers. She is married to an academic.*

*Ms Denise Lengyel is a PhD student. Previously, she worked in Germany and was an active elected member of the Equal Opportunities Council at the Technische Universität Ilmenau and a mentor in the STEM project Cybermentor. She lives in a dual-career relationship.*

*Dr John Power is a Reader and the departmental Director of Studies for Undergraduate programmes. He is also the BCS Women Undergraduate Lovelace Colloquium coordinator and has a long-standing interest in equality issues. He is on the Student Staff Liaison Committee.*

*Ms Zohreh Shams is a PhD student. She is involved in undergraduate teaching as a tutor. Zohreh is an official student ambassador of the University of Bath, working with the Widening Participation Team that promotes access to higher education, targeting under-represented groups.*

*Prof Nicolai Vorobjov is the departmental equality co-ordinator, member of the departmental Teaching Committee, and the Chair of DSAT. He has been a DoS for postgraduate taught programmes. He has extensive experience of research and teaching internationally. He has raised a two-child family with his working academic wife.*

*Dr Leon Watts is a Senior Lecturer. He has been involved in several interdisciplinary research projects employing both male and female research officers. He is the undergraduate admissions tutor. He is also on the SSLC. Leon is in a dual-career marriage and has two children.*

- 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 Chair of the DSAT was appointed by the Head of Department (HoD) in Autumn 2013. The Department's Athena SWAN initiative was formally launched at a departmental staff meeting and the membership of the DSAT was drawn from staff and students who welcomed the opportunity to engage. Small meetings then took place around the teams and student groups to share information about the principles of SWAN. The DSAT met monthly during the development of the submission. A number of subgroups also met to progress specific activities. Progress was reported to our monthly departmental staff meetings. Two members of the DSAT are also members of the Staff Student Liaison Committee and were able to seek feedback on relevant SWAN activities at SSLC meetings. Staff and PGRs were also kept informed of developments through frequent e-mail communication.*

*The DSAT identified challenges associated with the problems of recruitment and promotion of female academic staff and the key points of attrition for students in the transition from being a*

*student to becoming a researcher or lecturer. In doing so, the DSAT considered at what points in study/academic careers intervention would be most effective and what form this should take. We agreed that a full range of strategies were necessary to attract more female students and staff to the Department and to support them while there. Qualitative information in part was obtained by means of focus groups conducted among postgraduate students and research staff. A university-wide SWAN-culture staff survey was conducted in Spring 2014. A postgraduate/postdoctoral survey and focus group was held in Summer 2014. There are a number of issues that we are working on in response to the feedback, for instance improving our provision of mentors and career guidance. DSAT circulated various drafts of the submission to staff and students in the department and held discussions on the submission at SSLC; all feedback received has been considered. The University Equality and Diversity Manager, University Secretary, who is Chair of USAT, and Vice Chancellor's Group have also been consulted and engaged strongly with the development of the submission.*

- 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.

*DSAT will meet at least every six weeks to monitor progress on various items of the Action Plan, and to check how planned outcomes are achieved. Small working groups, which will include staff and students, will meet to oversee the implementation of specific action points and report back to DSAT. Regular updates on progress in implementing the AP will be reported to the DEC and to each meeting of USAT.*

*We are adopting a continuous improvement approach to AP implementation and anticipate that new actions may be added to our plan as we learn from experience. We are also looking to embed SWAN principles in all our structures and systems as we move forward. The University operates a rolling process of annual Equality Analyses which provide one vehicle for delivering this. Staff time for leading the implementation and monitoring of our AP will be recognised in our workload model, just as the effort for its development has been.*

[945 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 Department of Computer Science was established in 2001, from the former Computing Group in the Department of Mathematical Sciences, and is already consistently near the top of the major subject league tables. Its research groups comprise Human-Computer Interaction, Mathematical Foundations, Media Technology, and Intelligent Systems. Each group consists of academic staff, PDRAs and PhD/EngD postgraduate students. In addition, the department hosts the Centre for Digital Entertainment, an EPSRC-funded Doctoral Training Centre delivering industry-based EngD degrees. All departmental committees have female representation. The Research Committee is chaired by Dr Hilary Johnson, a member of the DSAT.*

*We attract high achieving students and our standard undergraduate admission requirement is AAA at A-level. Until 2014/15 all candidates were interviewed before an offer was made. From 2014/15, candidates are invited to visit the department and meet staff and students but there is no formal interview.*

*We offer three undergraduate programmes: Computer Science; Computer Science and Mathematics; Computer Science with Business. There is an optional one-year placement in which most students participate. The strength of our placement network provides students with an excellent window on the range of careers available to computer scientists. We have a strong association with the British Computing Society Women Undergraduate Lovelace Colloquium, and have had more student invitees than any other UK university for the past six years. They have won prizes in each of the past four years, including several major prizes.*

*We run three taught MSc programmes: Software Systems, Human-Computer Interaction and Digital Entertainment, all with optional placement. The percentage of female MSc students has been the same as the national average of 25% until 2013/14 when the figure reached 83% female PGT students.*

*The department has a PhD programme and an EngD postgraduate programme, with the percentage of female students (21%) only slightly lower than the national average (25%).*

*Currently the department has 17 PDRAs, most of whom are on fixed-term contracts. More than a third of them are female.*

- 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 access or foundation courses.*

- (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.

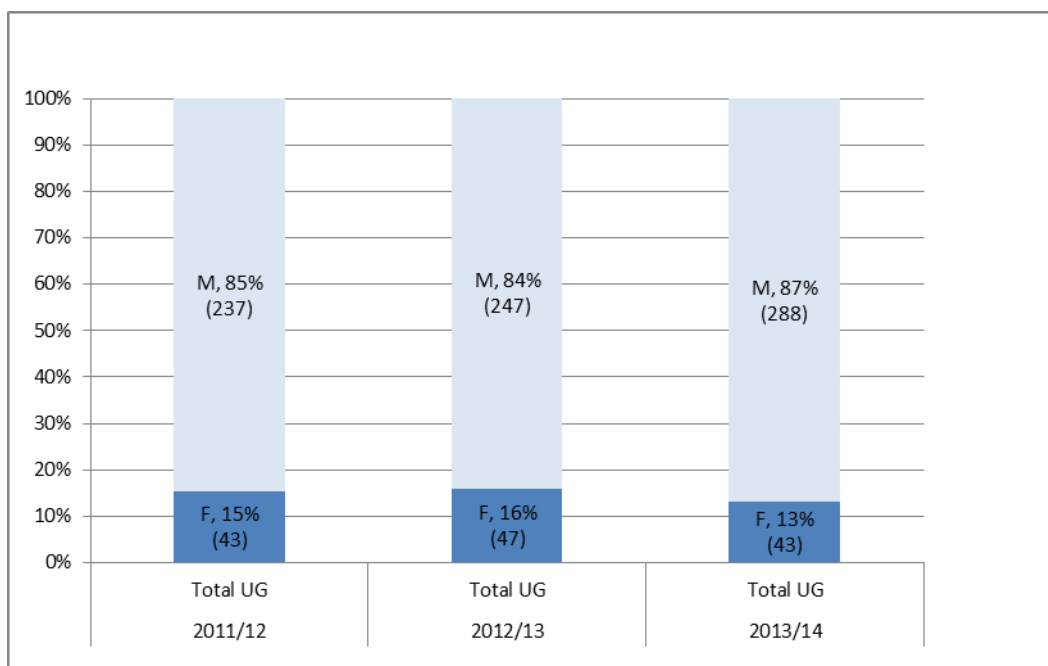
*The University does not generally offer part-time undergraduate programmes. The female/male ratio for full time students in the department was lower in 2011/12 than nationally in computing (15% female in the department vs. 18% nationally). In 2012/13 the ratios almost evened up: 16% female in the department, 17% nationally. In 2013/14 the ratio in Bath fell to 13%, the national ratio is not known yet. The fall in the percentage is of concern and we are strengthening our*

strategy to attract more female students to our courses through our outreach work in schools and colleges and by working with the public engagement team to increase knowledge about computing and our commitment to support female computer scientists: see Action Plan section 1.

**Table 1 Undergraduate students**

UNDERGRADUATE STUDENTS	2011/12				2012/13				2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
<b>Total</b>	<b>43</b>	<b>237</b>	<b>15%</b>	<b>85%</b>	<b>47</b>	<b>247</b>	<b>16%</b>	<b>84%</b>	<b>43</b>	<b>288</b>	<b>13%</b>	<b>87%</b>
Full time	43	236	15%	85%	47	247	16%	84%	43	288	13%	87%
Part time	0	1	0%	100%	0	0	-	-	0	0	-	-

**Figure 1 Graph of undergraduate students**



Nationally (and to some extent within the department) the percentage of female students is higher in the EU category and significantly higher in the non-EU category (Table 2). These figures may reflect the influence of school pupils studying a wider range of subjects, giving them a wider choice of university courses. The national and departmental ratios, skewed in favour of men, may be due to the number of female school students choosing Maths at A level. The department is committed to a wide range of initiatives and outreach activities to tackle this trend and demonstrate the importance of computer science in everyday life. For instance in June 2013 Dr Joanna Bryson participated in a national competition 'I'm a scientist, get me out of here!'. This is an award-winning national event where school students (age 9–18) interact online with scientists. Some of the department members (in particular, Davenport and Bruscoli) are actively contributing (through



the Computing at School network and International Baccalaureate Organisation respectively) to addressing the situation at national level where the core of the problem lies. We will continue our outreach activities by visiting schools, involving alumni and organizing workshops for school students locally, with a renewed emphasis on attracting female candidates **(AP 1.1 and 12)**.

**Table 2 HESA comparison- undergraduate students**

HESA: Information technology & systems sciences & computer software engineering														
FTE	2011/12				2012/13					2013/14				
UNDERGRADUATE STUDENTS	Female	Male	% Female	% Male	Female	Male	Other	% Female	% Male	Female	Male	Other	% Female	% Male
<b>University of Bath</b>														
Total	76	274	22 %	78%	53	252	0	17 %	83 %	55	302	0	15 %	85 %
Full time	76	274	22 %	78%	53	252	0	17 %	83 %	55	301	0	15 %	85 %
Part time	0	1	0%	100 %	0	0	0	-	-	0	0	0	-	-
<b>Sector</b>														
Total	11,000	48,698	18 %	82%	9,897	47,056	6	17 %	83 %	9,697	48,639	5	17 %	83 %
Full time	10,310	45,713	18 %	82%	9,280	44,182	6	17 %	83 %	9,084	45,681	5	17 %	83 %
Part time	690	2,986	19 %	81%	616	2,874	1	18 %	82 %	613	2,959	0	17 %	83 %

During student recruitment we put an emphasis on activities such as the BCSWomen Lovelace Colloquium and Bath's strong record in it. We publicise these achievements at Departmental Open Days and similar events, showing our Lovelace participants prominently. All recruitment brochures and online materials present a gender mix in quotes from and pictures of our students; we plan to enhance this with a greater emphasis on case studies of our female students, including graduates and placement students, to demonstrate the career opportunities available **(AP 1.5)**. All our Open Days provide opportunities to meet female students and staff; our "sample lecture" session is often delivered by a woman academic. We plan to complement our regular open day schedule with the introduction of all-women Departmental Open Days from academic year 2015/16 **(AP 1.4)**.

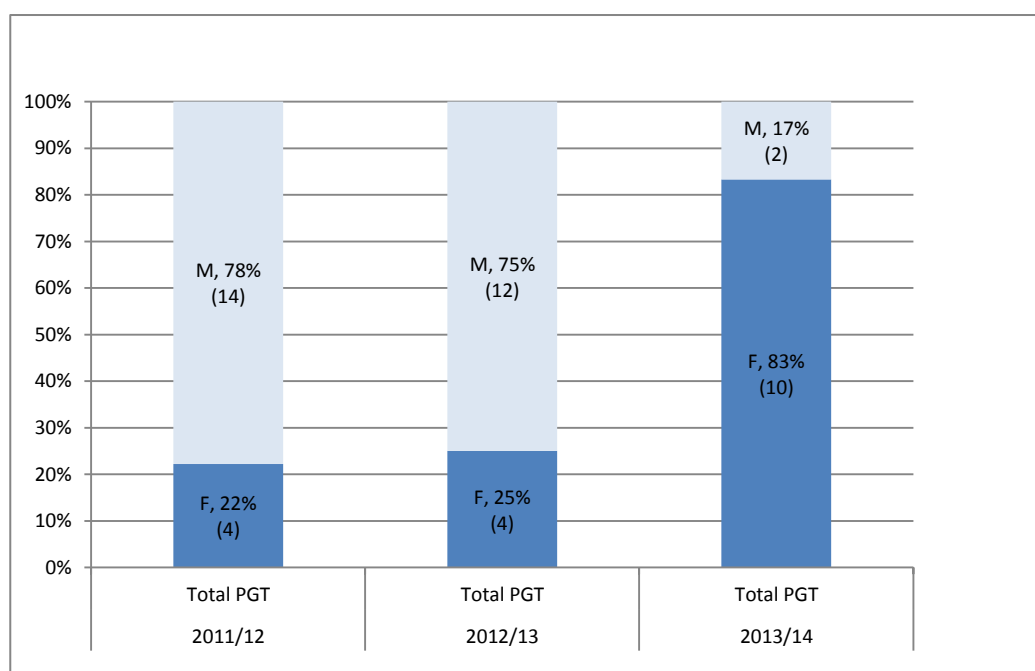
- (iii) **Postgraduate male and female numbers completing taught courses** – full and part-time – comment on the female:male ratio compared with the national picture for the discipline. Describe any initiatives taken to address any imbalance and the effect to date. Comment upon any plans for the future.

The DSAT Chair, Nicolai Vorobjov, was until recently the Director of Studies for postgraduate taught courses. Our cohort sizes are comparatively small making it difficult to draw significant conclusions (18 in 2011/12, 16 in 2012/13, 12 in 2013/14 – divided between three programmes).

**Table 3 Postgraduate taught students**

POSTGRADUATE TAUGHT STUDENTS	2011/12				2012/13				2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
Total	4	14	22%	78%	4	12	25%	75%	10	2	83%	17%
Full time	4	14	22%	78%	4	12	25%	75%	10	2	83%	17%
Part time	0	0	-	-	0	0	-	-	0	0	-	-

**Figure 2 Graph of postgraduate taught students**



The low absolute numbers mean that gender ratios vary widely from year to year (Figure 2). Our aggregate recruitment of 18 female and 28 male students over three years encourages us in the belief that we can exceed sector norms in future. Our high visibility at the BCS Women Lovelace Colloquium, with a large proportion of our female undergraduates gaining national prizes, will contribute to this. We will monitor future trends with the aim of achieving a balanced ratio (AP 2.1).

Table 4 shows that the sector female/male ratio was the same, at 26%, in 2011/12 and 2012/13 (HESA data). In 2012/13 we closely approached this ratio. Since the sector ratio is likely to remain about the same in 2013/14 and further, our department's result in this current year should significantly exceed the sector ratio.

In 2012/13 there was one (female) UK student in the whole cohort. It is a challenge to influence the gender ratio among the non-UK (especially, non-EU) applicants. We are currently in the process of revising our PGT provision; in tandem with this review, we will develop new marketing materials, including exemplars of female MSc students and graduates, and seek targeted philanthropic funding for female applicants (AP 2.3,2.4)

**Table 4 HESA comparison- postgraduate taught students**

HESA: Information technology & systems sciences & computer software engineering														
FTE POSTGRADUATE TAUGHT STUDENTS	2011/12				2012/13					2013/14				
	Female	Male	% Female	% Male	Female	Male	Other	% Female	% Male	Female	Male	Other	% Female	% Male
<b>University of Bath</b>														
<b>Total</b>	<b>4</b>	<b>14</b>	<b>22%</b>	<b>78%</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>20%</b>	<b>80%</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>69%</b>	<b>31%</b>
Full time	3	12	20%	80%	3	12	0	20%	80%	9	4	0	69%	31%
Part time	0	2	0%	100%	0	0	0	-	-	0	0	0	-	-
<b>Sector</b>														
<b>Total</b>	<b>2,404</b>	<b>6,691</b>	<b>26%</b>	<b>74%</b>	<b>1,983</b>	<b>5,628</b>	<b>1</b>	<b>26%</b>	<b>74%</b>	<b>2,086</b>	<b>5,482</b>	<b>0</b>	<b>28%</b>	<b>72%</b>
Full time	1,936	5,426	26%	74%	1,572	4,512	0	26%	74%	1,710	4,490	0	28%	72%
Part time	468	1,265	27%	73%	411	1,116	1	27%	73%	366	941	0	28%	72%
Not applicable	0	0	-	-	0	0	0	-	-	11	51	0	18%	82%

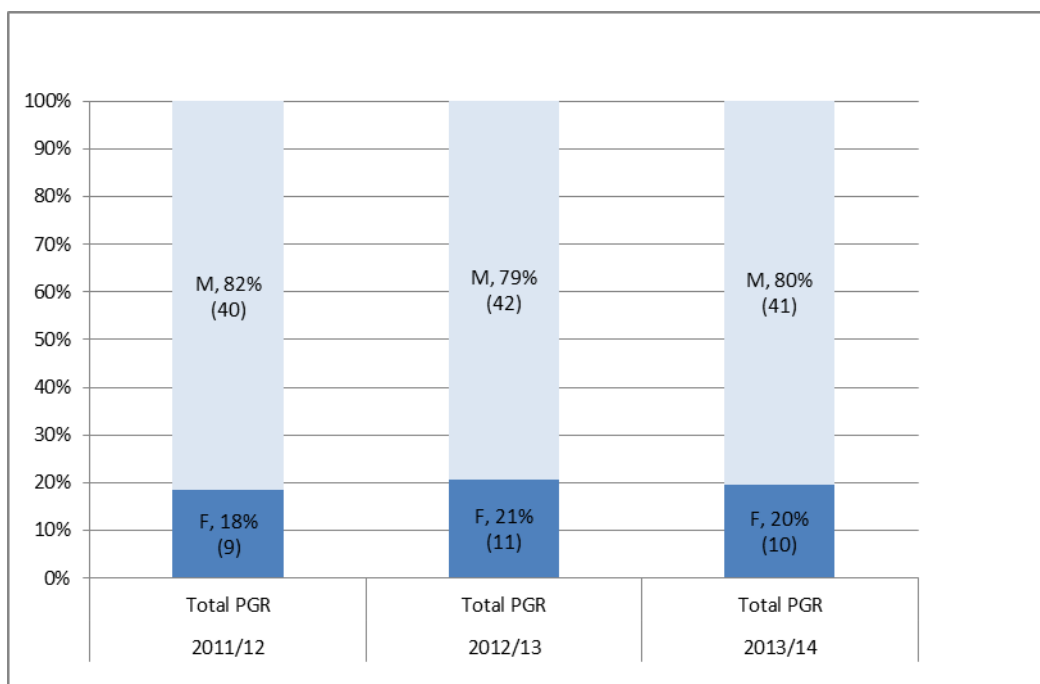
**Postgraduate male and female numbers on research degrees – full and part-time –** comment on the female/male ratio compared with the national picture for the discipline. Describe any initiatives taken to address any imbalance and the effect to date. Comment upon any plans for the future.

The female/male PGR ratio data is shown in Table 5 and Figure 3.

**Table 5 Postgraduate research students**

POSTGRADUATE RESEARCH STUDENTS	2011/12				2012/13				2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
<b>Total</b>	<b>9</b>	<b>40</b>	<b>18%</b>	<b>82%</b>	<b>11</b>	<b>42</b>	<b>21%</b>	<b>79%</b>	<b>10</b>	<b>41</b>	<b>20%</b>	<b>80%</b>
Full time	7	31	18%	82%	9	35	20%	80%	9	34	21%	79%
Part time	2	9	18%	82%	2	7	22%	78%	1	7	13%	88%

**Figure 3 Graph of postgraduate research students**



The departmental ratio is lower than the national one of about 25% over the past 3 years (HESA data, Table 6).

**Table 6 HESA comparison- postgraduate research students**

HESA: Information technology & systems sciences & computer software engineering														
FTE POSTGRADUATE RESEARCH STUDENTS	2011/12				2012/13					2013/14				
	Female	Male	% Female	% Male	Female	Male	Other	% Female	% Male	Female	Male	Other	% Female	% Male
<b>University of Bath</b>														
<b>Total</b>	<b>9</b>	<b>37</b>	<b>20%</b>	<b>80%</b>	<b>10</b>	<b>38</b>	<b>0</b>	<b>21%</b>	<b>79%</b>	<b>11</b>	<b>36</b>	<b>0</b>	<b>23%</b>	<b>77%</b>
Full time	7	30	19%	81%	8	33	0	20%	80%	8	31	0	21%	79%
Part time	2	7	22%	78%	2	5	0	29%	71%	1	3	0	25%	75%
Not applicable	0	0	-	-	0	0	0	-	-	3	3	0	50%	50%
<b>Sector</b>														
<b>Total</b>	<b>1,013</b>	<b>2,943</b>	<b>26%</b>	<b>74%</b>	<b>995</b>	<b>2,956</b>	<b>0</b>	<b>25%</b>	<b>75%</b>	<b>1,007</b>	<b>2,970</b>	<b>2</b>	<b>25%</b>	<b>75%</b>
Full time	802	2,351	25%	75%	805	2,373	0	25%	75%	806	2,395	2	25%	75%
Part time	211	593	26%	74%	189	583	0	24%	76%	113	328	0	26%	74%
Not applicable	0	0	-	-	0	0	0	-	-	88	247	0	26%	74%

As in the case with MSc students, we are pleased to note that there is a significant proportion of overseas and EU nationals among the PhD cohort.

From the next round of PhD recruitment, we will adjust the wording of our advertisements to include: “We are working to improve the gender balance within the student population and particularly welcome applications from women” **(AP 3.2)**. All members of interview panels will have to pass the University’s ‘Diversity in the Workplace’ and ‘Unconscious Bias’ training modules **(AP 3.1)**.

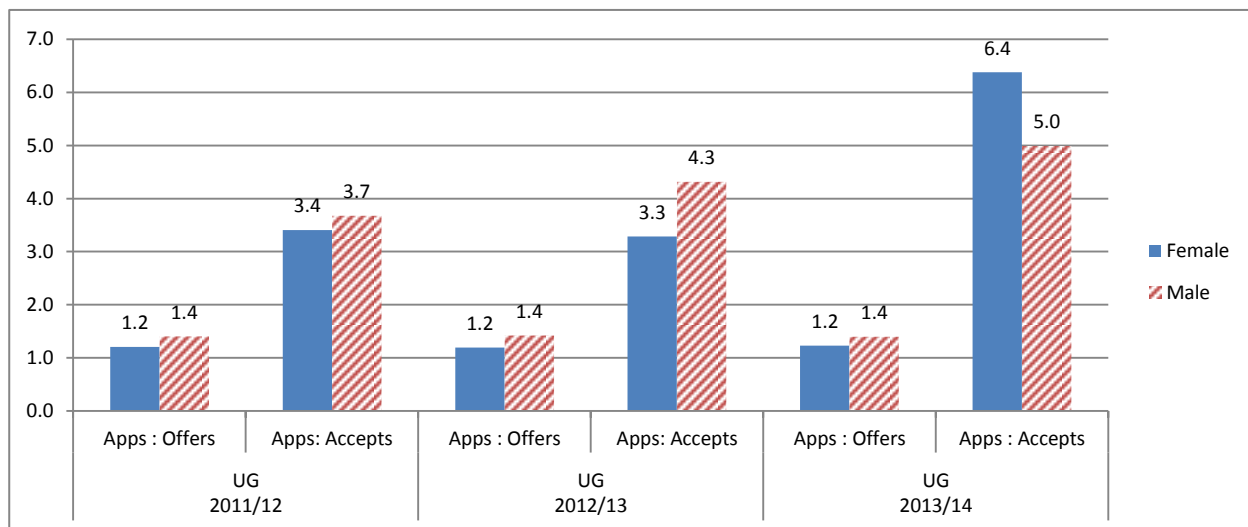
It is a challenge to increase the female/male ratio among the non-UK candidates. We have applied for EPSRC funding for some of our PhD candidates. In addition, the department is looking at ways to use PhD bursaries to attract more overseas and EU candidates **(AP 3.3)**.

- (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.

**Table 7 Applications, offers, acceptance**

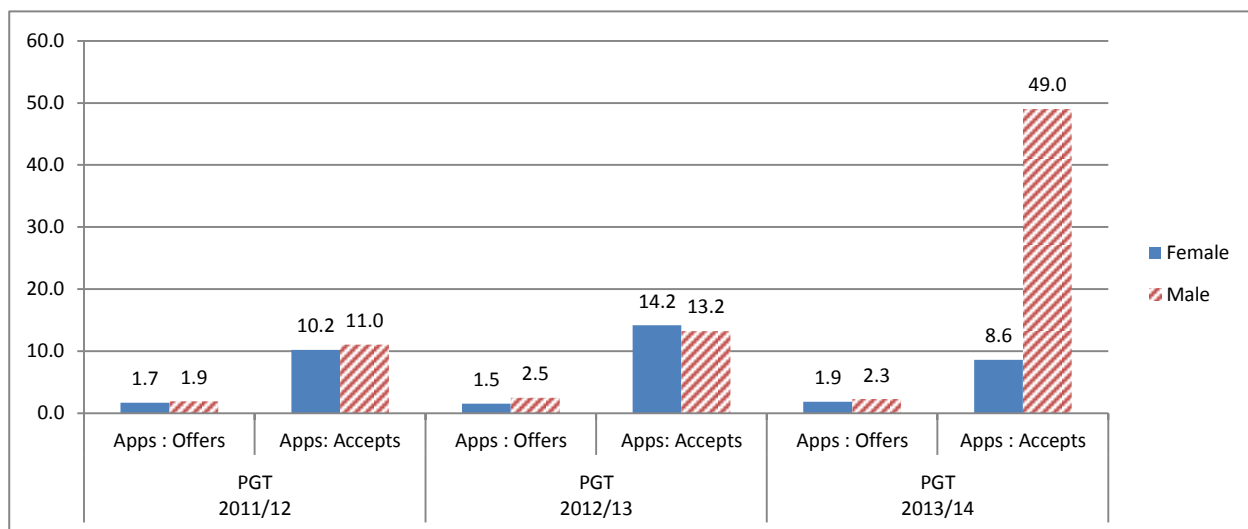
APPLICATIONS, OFFERS, ACCEPTANCES	2011/12					2012/13					2013/14				
	Apps	Offers	Accepts	Apps:Offers	Apps:Accepts	Apps	Offers	Accepts	Apps:Offers	Apps:Accepts	Apps	Offers	Accepts	Apps:Offers	Apps:Accepts
<b>Undergraduates</b>	<b>527</b>	<b>383</b>	<b>145</b>	<b>1.4</b>	<b>3.6</b>	<b>623</b>	<b>450</b>	<b>151</b>	<b>1.4</b>	<b>4.1</b>	<b>856</b>	<b>621</b>	<b>167</b>	<b>1.4</b>	<b>5.1</b>
Female	75	62	22	1.2	3.4	92	77	28	1.2	3.3	102	83	16	1.2	6.4
Male	452	321	123	1.4	3.7	531	373	123	1.4	4.3	754	538	151	1.4	5.0
<b>Postgraduate taught</b>	<b>357</b>	<b>192</b>	<b>33</b>	<b>1.9</b>	<b>10.8</b>	<b>323</b>	<b>151</b>	<b>24</b>	<b>2.1</b>	<b>13.5</b>	<b>308</b>	<b>147</b>	<b>17</b>	<b>2.1</b>	<b>18.1</b>
Female	92	54	9	1.7	10.2	85	55	6	1.5	14.2	112	60	13	1.9	8.6
Male	265	138	24	1.9	11.0	238	96	18	2.5	13.2	196	87	4	2.3	49.0
<b>Postgraduate research</b>	<b>154</b>	<b>27</b>	<b>18</b>	<b>5.7</b>	<b>8.6</b>	<b>163</b>	<b>28</b>	<b>21</b>	<b>5.8</b>	<b>7.8</b>	<b>149</b>	<b>26</b>	<b>23</b>	<b>5.7</b>	<b>6.5</b>
Female	40	6	3	6.7	13.3	27	9	6	3.0	4.5	27	8	7	3.4	3.9
Male	114	21	15	5.4	7.6	136	19	15	7.2	9.1	122	18	16	6.8	7.6

**Figure 4 Graph of applications, offers, acceptance for undergraduates**



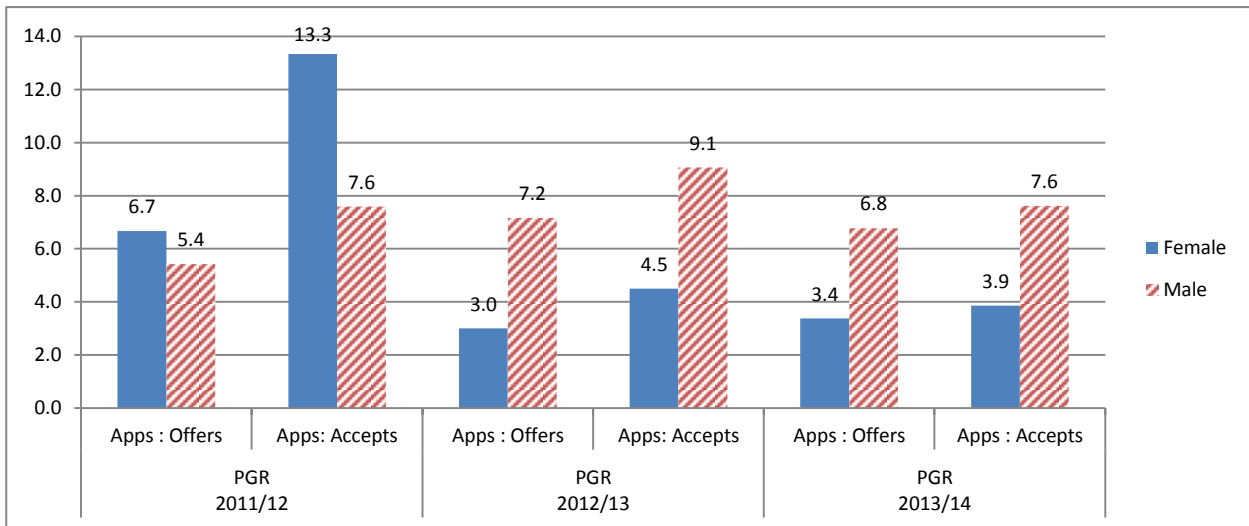
The ratio of applications/offers is lower (i.e. there were more offers per application) for women than for men in all years. Applications/acceptance is also lower for female candidates, except for the last academic year. We are attracting strong women candidates and our internal admissions processes are not creating a barrier to entry; thus, the focus of our strategy needs to be on encouraging more women to apply in the first place: see APs 1.1-1.5.

**Figure 5 Graph of applications, offers, acceptance for postgraduates taught**



PGT applications/offers (Table 7 and Figure 5) is consistent throughout the period. As with UG recruitment, the broad picture is one of lower applications/offer and applications/accepts ratios for female candidates. Again this suggests a focus of attention on encouraging applications: see AP2.1-2.4 (The 2013/14 applications/acceptance ratio for males is clearly an anomaly).

**Figure 6 Graph of applications, offers, acceptance for postgraduates research**



*PGR applications/offers (Table 7 and Figure 6) is slightly different from PGT students. In the last two years the applications/offer and applications/accepts ratios were lower for women than for men. Again this is encouraging in respect of our admissions processes.*

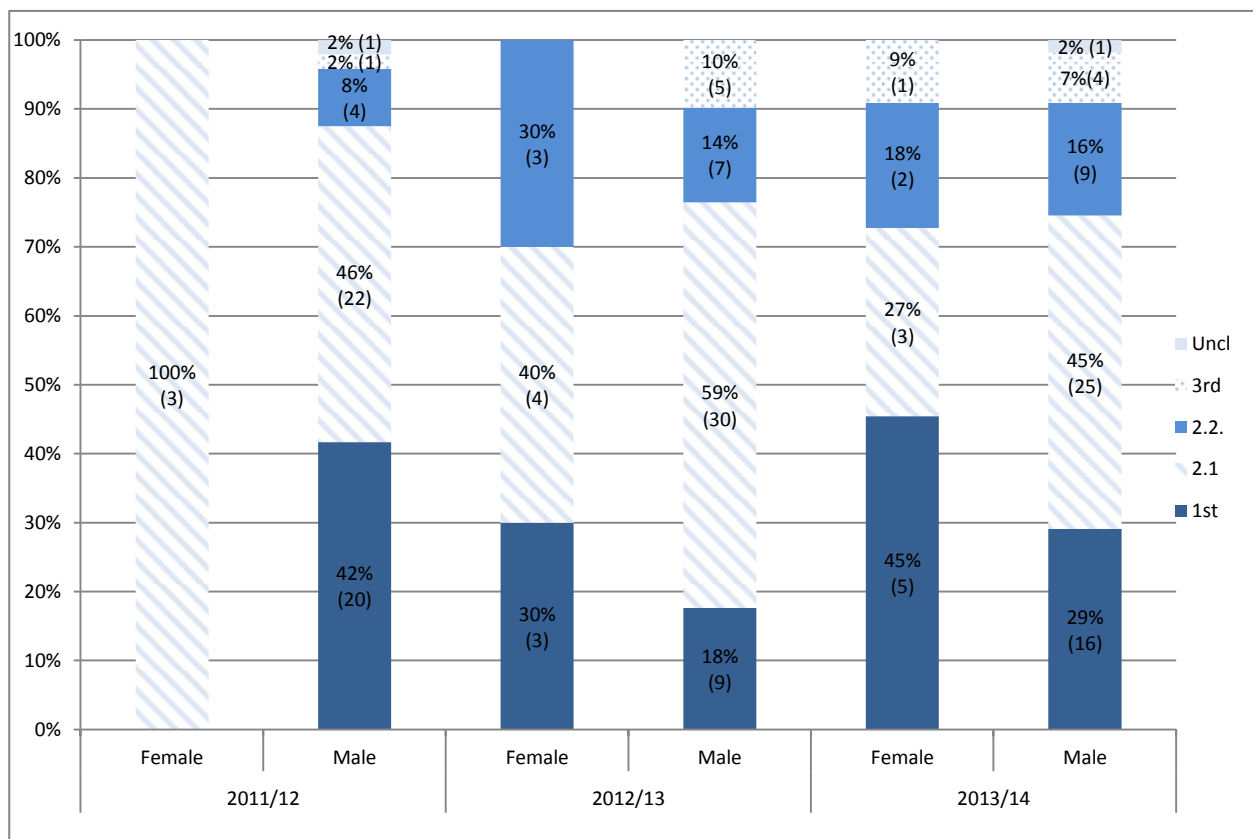
- (v) **Degree classification by gender** – comment on any differences in degree attainment between males and females and describe what actions are being taken to address any imbalance.

**Undergraduate:**

**Table 8 Degree classification for undergraduate students**

DEGREE CLASSIFICATION	2011/12				2012/13				2013/14			
	Female	Male	% of females	% of males	Female	Male	% of females	% of males	Female	Male	% of females	% of males
1st	0	20	0%	42%	3	9	30%	18%	5	16	45%	29%
2.1	3	22	100%	46%	4	30	40%	59%	3	25	27%	45%
2.2	0	4	0%	8%	3	7	30%	14%	2	9	18%	16%
3rd	0	1	0%	2%	0	5	0%	10%	1	4	9%	7%
Unclassified	0	1	0%	2%	0	0	0%	0%	0	1	0%	2%
<b>Total</b>	<b>3</b>	<b>48</b>	<b>-</b>	<b>-</b>	<b>10</b>	<b>51</b>	<b>-</b>	<b>-</b>	<b>11</b>	<b>55</b>	<b>-</b>	<b>-</b>

**Figure 7 Graph of degree classification for undergraduates**



There has been an increase in the absolute numbers of women undergraduates (Table 8 and Figure 7). Throughout the period between 70-100% of our female undergraduates received a 2.1 degree classification or better. This ratio is broadly comparable with the performance of our male undergraduates. The data are encouraging: it appears that the open and supportive department and university culture and structures are effective across genders; we will continue to monitor the results.

**Postgraduate taught:**



**Table 9 Degree classification for postgraduate taught students**

POSTGRADUATE TAUGHT STUDENTS	2011/12		2012/13		2013/14	
	% Female	% Male	% Female	% Male	% Female	% Male
Distinction	25% (1)	15% (2)	0%	0%	22% (2)	100% (1)
Merit	50% (2)	31% (4)	25% (1)	50% (6)	44% (4)	0%
Pass	25% (1)	46% (6)	75% (3)	50% (6)	33% (3)	0%

*The absolute figures are small so the outcomes vary widely across years (Table 9). Across the three year period, 10 female students have achieved Merit and Distinction degrees, out of 17 total female students (59%). This compares with a 50% merit/distinction rate for male students in the same period. These very encouraging data suggest that our support processes and structures are effective across genders.*

### **Postgraduate research degrees**

*From 2010 to 2014 all examined students gained their PhD.*

### **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.

*The percentage of female staff across all categories grew slightly in 2012/13 and then dropped in 2013/14 (Table 10 and Figure 8). The absolute figures are small so a loss of a single person leads to a clear drop.*

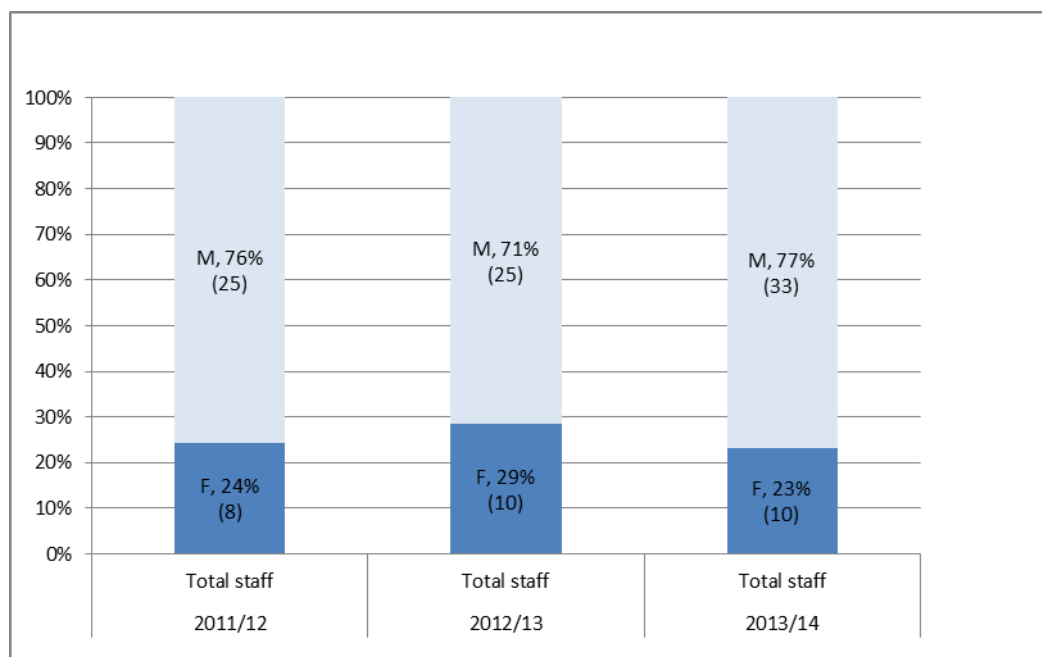
**Table 10 Academic and research staff**

ACADEMIC AND RESEARCH STAFF	2011/12				2012/13				2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
<b>Total</b>	<b>8</b>	<b>25</b>	<b>24%</b>	<b>76%</b>	<b>10</b>	<b>25</b>	<b>29%</b>	<b>71%</b>	<b>10</b>	<b>33</b>	<b>23%</b>	<b>77%</b>
Research	4	9	31%	69%	5	6	45%	55%	6	15	29%	71%
Teaching	0	0	-	-	0	0	-	-	0	1	0%	100%
Lecturer	0	3	0%	100%	0	4	0%	100%	0	2	0%	100%
Senior Lecturer	2	2	50%	50%	2	2	50%	50%	1	3	25%	75%
Reader	2	4	33%	67%	2	3	40%	60%	2	4	33%	67%
Professor	0	6	0%	100%	0	8	0%	100%	0	7	0%	100%
Other	0	1	0%	100%	1	2	33%	67%	1	1	50%	50%

*The largest staff increase is in PDRAs. More must be done to attract a wider range of applicants to these posts. We will take actions such as reviewing where we advertise, and providing training in recruitment/selection and unconscious bias (AP 4 and 5).*

*From 2011/12 to 2012/13, PDRAs fell from 13 to 11. The number of women grew from 4 to 5, making 45%. In 2013/14 there was absolute growth to 21 and a slight increase in the number of women, by 1. PDRAs are expected to be experts in specific fields, hence the pool is very limited but we will endeavour to widen the range, methods and where we advertise our opportunities (AP 4.1).*

**Figure 8 Percentage diagram for total staff**



*The number of academic staff grew in 2012/13 overall by 2 from 19 to 21. In 2013/14 the total number of academic staff fell back to 19 due to resignations/ill health retirements. Overall, the proportion of female academic staff fell from 21% in 2011/12 to 19% in 2012/13, and further to 16% in 2013/14, thus falling below the national average of 21% in Computer Science (HESA data). We will be making every effort to improve the recruitment of women, including proactive search for appropriate candidates and explicit encouragement of female applicants in advertisements. The HoD will ensure that all-male shortlists arise only in exceptional circumstances through justification and review of each shortlist **(AP 5)**.*

*All of our female Lecturers were promoted to Senior Lecturers and Readers in 2010/11. In recent rounds of recruitment to academic posts, we circulated information in a variety of publications and on the website to attract more women candidates. The lack of women professors in the department reflects the small size of the recruitment pool, resulting from a legacy in the UK of low participation of women in computer science. This is in spite of national campaigns such as BCS Women and our own local initiatives. We are working with girls in schools, at Open days and through networks **(AP 12)** to increase participation. We are pleased that we now have two female Readers as this creates role models for early career female academics. We intend to appoint a female Visiting Professor to provide an additional role model and to assist us with search for female candidates when posts are available.*

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

**Table 11 Turnover by grade and gender**

LEAVERS	2011/12				2012/13				2013/14				2011/12 - 2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
<b>Total</b>	<b>1</b>	<b>6</b>	<b>14%</b>	<b>86%</b>	<b>3</b>	<b>6</b>	<b>33%</b>	<b>67%</b>	<b>1</b>	<b>4</b>	<b>20%</b>	<b>80%</b>	<b>5</b>	<b>16</b>	<b>24%</b>	<b>76%</b>
Research	1	4	20%	80%	3	6	33%	67%	0	1	0%	100%	4	11	27%	73%
Teaching	0	0	-	-	0	0	-	-	0	1	0%	100%	0	1	0%	100%
Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	0	0	-	-
Senior Lecturer	0	0	-	-	0	0	-	-	1	0	100%	0%	1	0	100%	0%
Reader	0	0	-	-	0	0	-	-	0	0	-	-	0	0	-	-
Professor	0	1	0%	100%	0	0	-	-	0	1	0%	100%	0	2	0%	100%
Other	0	1	0%	100%	0	0	-	-	0	1	0%	100%	0	2	0%	100%

Among PDRAs, a much smaller percentage of women than men leave each year (Table 11). Among academic staff in the last 3 years one male professor resigned to take up a post abroad and one female Senior Lecturer retired due to ill health. There is no tendency for women to leave more than men. We will continue to monitor turnover **(AP 6.1)**.

[1996 words]

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

##### Key career transition points

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

*In 2011/12 there were 13 male candidates and no female applicants for the only academic post on offer (a professorship). No academic posts were offered in 2012/13. In 2013/14 the department had two Lecturer and one Senior Lecturer vacancies. The posts were advertised in areas of computer science in which the department aims to develop. Among 90 applicants for the post of Lecturer there were 28% women and 72% men. Shortlisted candidates were 42% women and 58% men. 2 men were appointed. For the post of Senior Lecturer, among 28 applicants 29% were women with 71% men, while among 6 shortlisted candidates the balance was 50/50. Unfortunately, after the interview process, no one was appointed. We will review where and how we advertise our vacancies to attract female candidates. **(AP 5)**.*

**Table 12 Staff applications and appointments**

		Applications				Shortlisted				Appointments				Success rate		
		Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	Total
<b>2011/12</b>	<b>Total</b>	<b>28</b>	<b>98</b>	<b>22%</b>	<b>78%</b>	<b>9</b>	<b>26</b>	<b>26%</b>	<b>74%</b>	<b>3</b>	<b>7</b>	<b>30%</b>	<b>70%</b>	<b>11%</b>	<b>7%</b>	<b>8%</b>
	Research	27	78	26%	74%	8	18	31%	69%	3	5	38%	63%	11%	6%	8%
	Teaching	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Senior Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Reader	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Professor	0	13	0%	100%	0	4	0%	100%	0	1	0%	100%	-	8%	8%
	Other	1	7	13%	88%	1	4	20%	80%	0	1	0%	100%	0%	14%	13%
<b>2012/13</b>	<b>Total</b>	<b>6</b>	<b>42</b>	<b>13%</b>	<b>88%</b>	<b>2</b>	<b>13</b>	<b>13%</b>	<b>87%</b>	<b>1</b>	<b>3</b>	<b>25%</b>	<b>75%</b>	<b>17%</b>	<b>7%</b>	<b>8%</b>
	Research	4	40	9%	91%	2	12	14%	86%	1	2	33%	67%	25%	5%	7%
	Teaching	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Senior Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Reader	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Professor	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Other	2	2	50%	50%	0	1	0%	100%	0	1	0%	100%	0%	50%	25%
<b>2013/14</b>	<b>Total</b>	<b>64</b>	<b>246</b>	<b>21%</b>	<b>79%</b>	<b>23</b>	<b>44</b>	<b>34%</b>	<b>66%</b>	<b>1</b>	<b>15</b>	<b>6%</b>	<b>94%</b>	<b>2%</b>	<b>6%</b>	<b>5%</b>
	Research	24	148	14%	86%	13	30	30%	70%	1	11	8%	92%	4%	7%	7%
	Teaching	7	13	35%	65%	2	4	33%	67%	0	2	0%	100%	0%	15%	10%
	Lecturer	25	65	28%	72%	5	7	42%	58%	0	2	0%	100%	0%	3%	2%
	Senior Lecturer	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Reader	8	20	29%	71%	3	3	50%	50%	0	0	-	-	0%	0%	0%
	Professor	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-
	Other	0	0	-	-	0	0	-	-	0	0	-	-	-	-	-

All other appointments in Table 12 were for research staff. In 2011/12 there were 27 women and 78 men applicants with 3 women and 5 men hired, i.e., the success rate was 11% for women and 6% for men. In 2012/13 there were 4 female and 40 male research applicants with one woman and two men hired, i.e., the success rate was 25% for women and 5% for men. Finally, in 2013/14 there were 24 female and 148 male applicants, with one woman and 11 men hired, i.e., the success rate was 4% for women and 7% for men. The fall in female success is disappointing and attributed to the availability of essential skills when hiring in specialist areas required for particular research. We closely monitor the success rate (AP 4.2) but success at this stage really does depend on having impact at earlier stages of women's education and career rate (AP 1 and AP3).

Success rates were higher for female PDRAs before 2013/14 and then dropped. This is mainly due to the specific demands of the topics in which applicants were sought in the 2013/14 round: very

*few women were trained in these specialist subjects earlier in their careers. We will review how and where we advertise these positions in the future (AP 4.1).*

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

*In 2010/11 two women were promoted to Reader/Senior Lecturer and one man to Reader. In 2010/11 one man was promoted to Reader; in 2011/12 there were no applications for promotion; in 2012/13 one man was promoted to Professor. In 2013/14 one man was promoted to Senior Lecturer and one to Reader. The HoD invites applications for promotion each year from all academic staff, and discusses career aspirations in person with all eligible staff not wishing to be considered in a given year. All applications are considered by the HoD in consultation with senior academic staff. Staff who aspire to promotion but feel their case is not yet strong are encouraged to develop a Personal Action Plan for the development of their promotion case (AP8.1)*

*The success rate for promotions is 100% over the period, suggesting this strategy of actively encouraging applications.*

*We are planning to reinforce our promotion procedures. All academic staff undertaking an SDPR (see Career Development below), and those open to consideration for promotion will be encouraged to develop Personal Action Plans (AP 8.1). A female Senior Lecturer and a female Reader are currently developing such plans. Senior academic staff conducting mandatory annual Staff Development and Performance Review (SDPR) will encourage applications for promotion when appropriate (AP 8.2).*

- 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 fully complies with the university’s employment policies, and the university closely monitors each stage of the recruitment process. All members of interview panels are trained in recruitment and interviewing skills. All recruitment panel members will undertake Diversity in the Workplace and Unconscious Bias training (AP 5.6). We will ensure that each interview panel has a gender mix and will endeavour to have more than one female panel member whenever possible, while ensuring that senior women in the department are not overloaded. We will create a comfortable and gender balanced environment for candidates while they are in our care within and outside the interview process. The department will aim for a gender mix on all shortlists and will provide specific justification when an all-male or all-female short list occurs (AP 5.7).*

*We made explicit efforts to attract female candidates in 2014. All academic and academic-related job advertisements contain the sentence: “Both the Department and the University are committed to providing a supportive and inclusive working environment. We are working to improve the gender balance within the Department and particularly welcome applications from women”. Several female candidates for posts in Human-Computer Interaction and Machine Learning were identified by search panels within the Department and encouraged to apply. The latest recruitment process for an academic post has not yet been completed but we are optimistic that we will attract a number of excellent women candidates. Training provided to recruitment panels covers equality and diversity issues to ensure that shortlisting and selection criteria and processes are appropriate. The data on shortlisting above indicates that this is successful in avoiding gender impacts.*

- (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.

*The main area of attrition we have identified is the transition from PDRA to Lecturer. The department is supporting its PDRAs for the transition to a career in academia by mentoring and training activities. The University offers a wide range of training and international opportunities for early career researchers, probationary lecturers and teaching fellows through its Learning & Teaching Enhancement office and generous international funding schemes. We will actively encourage these categories of staff to participate (AP 6.2). The University, with the strong support of departments including ours, runs a programme called the **Bath Science Academy**. Its aim is to help research staff to become independent researchers or academics and to support them in developing a strategy to fulfil their career aspirations. In 2014/15 the programme consists of 11 workshops, roughly once a month throughout the academic year. Currently we have one female and two male colleagues from Computer Science participating in the scheme. The department plans to continue to offer this programme to research staff and will encourage them to apply (AP 7.3).*

*The department assigns mentors to all newly appointed academic staff of whatever seniority. In appointing mentors, diversity issues such as gender are taken into account. The department will extend this practice to all other academic staff members who would like a mentor. Following a suggestion from the postgrad/postdoc focus group, and advised also by WISE, WES and similar international groups, we will further extend this voluntary mentoring system to involve them (AP 7.2).*

### **Career development**

- a) For each of the areas below, explain what the key issues are in the department, what steps have been taken to address any imbalances, what success/impact has been achieved so far and what additional steps may be needed.
  - (i) **Promotion and career development** – comment on the appraisal and career development process, and promotion criteria and whether these take into

consideration responsibilities for teaching, research, administration, pastoral work and outreach work; is quality of work emphasised over quantity of work?

*The university runs a mandatory annual staff development and performance review process (SDPR). It is an opportunity for staff to receive feedback on their performance, to discuss and set objectives for the coming year, and to explore and support their career aspirations. The reviewer is always a senior academic staff member, chosen in consultation with the. A comprehensive form is completed which is then reviewed by the HoD. At this stage discussions about promotion focus on development needed for individuals to achieve their career goals (AP 7.1). The department is starting to run a Personal Action Plan (PAP) system, with one female Senior Lecturer and one female Reader already developing their PAPs with a view to applying for promotion. All academic staff wanting to apply for promotion will be encouraged to develop PAPs (AP 8.1).*

*Academic promotion criteria have moved away from emphasis on research and now recognise teaching, administration, pastoral work and outreach work. The department has been working with the university to develop these broadened promotion criteria, which were adopted by the university in May 2014 in its Career Progression Framework. Accordingly, a recent promotion to Senior Lecturer in the Department took into account the work of the candidate on undergraduate recruitment. Promotion criteria emphasise excellence above quantity of work, and explicitly allow for cases based on all-round performance as well as cases of substantial distinction in one area.*

- (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?

*Departmental induction includes a checklist given to new staff by their mentor who welcomes them to the department. The checklist assists the new recruit by providing them with relevant information. New members are introduced to staff in the department and are briefed on available services and local routines. The department has a policy of giving a lighter workload to new staff. We will be developing a handbook with relevant information for new staff (AP 9.2).*

*The University induction, called **The Bath Course in Enhancing Academic Practice**, is provided for all new academic staff and includes an introduction to available staff development programmes. Policies that underpin employment at Bath such as the Flexible Working Policy and Leave Policy are described.*

*As noted above, all new academic staff get mentors chosen from more experienced academic staff. New PhD students initially get their supervisors as mentors but we plan to offer mentors to PhD students who are not their supervisors. The same will apply to PDRAs (AP 7.2).*

*All staff regularly receive a newsletter from the Academic Staff Development team describing their programme training and development opportunities. Staff and students are also actively encouraged to participate in centrally organised networking and training events such as the SWAN*



lectures on obtaining grants, role model talks and other similar events offered under the SWAN programme of events. Some staff and students have attended and benefited from these events.

The university runs a career development programme for STEM PDRAs, the Bath Science Academy, in which the department actively participates.

**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.

Female undergraduate candidates are encouraged to apply to the department through our extensive outreach activities. For the 2015/16 intake we plan to start women-only departmental Open Days and will train our UG and PG students to participate in these (**AP 1.4**). The department can present at Open Days very successful female role models amongst its staff and students.

We encourage all our students to plan their careers. Undergraduate students are encouraged to take an industrial placement between the second and final year of studies and there is approximately a 66% take-up. The employability of students participating in placements rises significantly: it is not uncommon for such students to continue with the same employer after graduation.

All our UG students are required to complete a year-long final year project. Many of the projects are modelled on industrial projects which prepare students for future careers in the computer industry. Some projects have a more academic flavour and give a taste of academic research. Female students have opportunities to choose female supervisors if they so wish.

All UG students are allocated a personal academic tutor at the start of their course, and they can normally expect to retain this tutor throughout their time in the department. Students are advised that they can request (in confidence) a change of tutor, including requesting a female personal tutor. Such requests will usually be accommodated by the departmental Senior Tutor.

PhD students work in a research group, and gain experience of giving presentations on their research to academics and other postgraduate students in group meetings and departmental seminars throughout the academic year. PhD students, particularly women, are assisted in progressing their careers by a chain of support and training, starting in the department (Dr Hilary Johnson), continuing through university's Learning & Teaching Enhancement Office (Dr Jeanette Müller), and overseen by Prof Jane Millar (Pro-Vice-Chancellor, Research).

The department has been a mainstay of the BCSWomen Lovelace Colloquium since its inception in 2008. The colloquium, one of the main activities of BCSWomen, is a one-day meeting designed to support female undergraduate and taught Masters students in Computer Science and related disciplines. Women are under-represented in IT. The Lovelace Colloquium not only supports them in their current university environments but also prepares them for futures in academia and industry. Every year, Bath has had more students invited to the Lovelace Colloquium than any other UK university. We have won two or three prizes almost every year, included the major prizes such as

*best Year 1 and 2 posters. The department continues actively to encourage female undergraduate students to participate.*

*Such participation is facilitated by a female computer science students' mailing list, which we maintain. Recent examples include encouragement to attend "Bath Girl Geeks" events and "Choosing a Career in STEMM" role model talks organised by the university. In 2014 we inaugurated a "Women in Computer Science" Moodle page. We have also regularly given our Lovelace Colloquium participants a small amount of financial support, such as paying for their posters and sometimes an additional night of accommodation at the event. The academic role in leading these activities is recognised explicitly in our workload model.*

*In order to leverage these activities to attract more female applicants, from 2015/16 we will offer all females attending our Open Days the opportunity to join the female computer science students mailing list (AP1.6)*

*The longest established student computing laboratory in the department is named after Lady Ada Lovelace, a British mathematician generally regarded as the world's first computer programmer, and a role model for staff and students.*

### **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 departmental executive is formed ex officio, as are some of the members of other committees, such as heads of the research committee (currently a woman) and teaching committee (currently a man). Other members of committees are identified as the most able to perform the required roles. For example, another female member of the research committee is the leader of one of the main research groups in the department, a female member of SSLC is the MSc Director of Studies. SSLC also contains students (30% of total membership). We are satisfied with the overall female/male ratio among the committee members (36% of women in 2013/14), especially given the percentage (18%) of female academic staff.*

**Table 13 Representation on departmental committees**

COMMITTEE MEMBERSHIP	2011/12				2012/13				2013/14			
	Female	Male	% Female	% Male	Female	Male	% Female	% Male	Female	Male	% Female	% Male
<b>Total</b>	<b>8</b>	<b>35</b>	<b>17%</b>	<b>83%</b>	<b>10</b>	<b>39</b>	<b>21%</b>	<b>83%</b>	<b>16</b>	<b>42</b>	<b>36%</b>	<b>64%</b>
Athena SAT									6	4	60%	40%
Executive comm	0	4	0%	100%	0	4	0%	100%	1	5	17%	83%
Reasearch comm	1	5	17%	83%	1	5	17%	83%	2	3	40%	60%
Recruitment					1	4	20%	80%	1	4	20%	80%
SSLC	4	15	21%	79%	4	15	21%	79%	4	15	21%	79%
Systems Liaison	1	5	17%	83%	1	5	17%	83%	1	5	17%	83%
Teaching comm	2	6	25%	75%	3	6	25%	75%	1	6	14%	86%

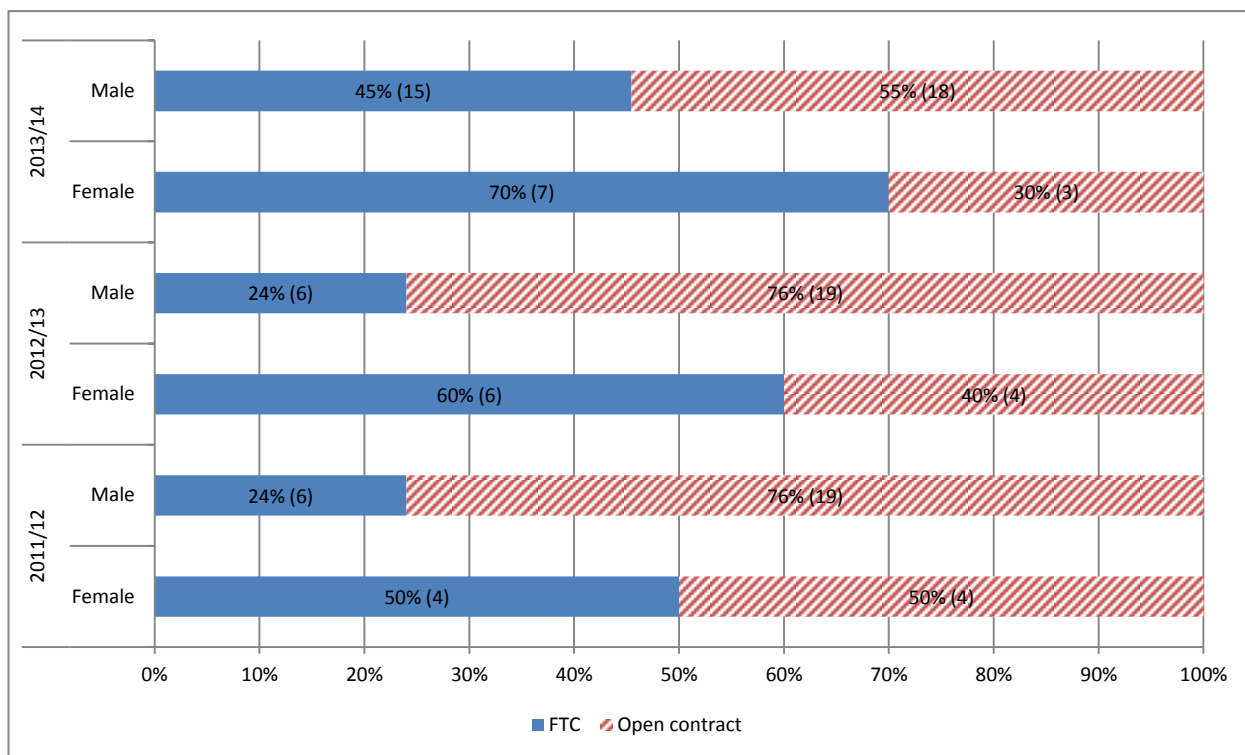
- (ii) **Female:male ratio of academic and research staff on fixed-term contracts and open-ended (permanent) contracts** – comment on any differences between male and female staff representation on fixed-term contracts and say what is being done to address them.

*Among researchers and academics a larger percentage of women are on fixed-term contracts (Table 14 and Figure 10). This correlates with the high proportion of female PDRAs. If our interventions to support the transition into academia are successful, this should help to address the under-representation of female academics on permanent contracts.*

**Table 14 Fixed-term contracts vs permanent contracts**

CONTRACT TYPE	Female				Male				TOTAL			
	FTC	Open	% FTC	% Open	FTC	Open	% FTC	% Open	FTC	Open	% FTC	% Open
2011/12	4	4	50%	50%	6	19	24%	76%	10	23	30%	70%
2012/13	6	4	60%	40%	6	19	24%	76%	12	23	34%	66%
2013/14	7	3	70%	30%	15	18	45%	55%	22	21	51%	49%

**Figure 10 Graph of fixed-term and permanent contracts**



Our efforts to improve the gender balance among academic staff should improve the ratio for academic staff (**AP 5 and 8**), while the higher ratio for PDRAs suggests that improvements are starting to be seen.

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

*The small size of the department, together with our workload model which explicitly recognises committee work, means that the majority of staff have roles on decision-making committees; all our female staff currently have such roles. Dr Hilary Johnson (who currently works half time) has been the Director of Research, Chair of the research committee and a member of the departmental executive since 2013. Previously Dr Johnson was a member of the teaching committee. We have another female member of the research committee. Currently we have one female member on the teaching committee from the department and another member representing the university’s widening participation team. We had a female student representative on the teaching committee in 2012/13. We have a significant female representation on DSAT (6/10 members).*

*The DEC is formed ex officio. This includes the female Director of Research. The research committee is formed from the representatives of the research groups and currently includes, in addition to the female Chair, the female leader of the Intelligence Systems group. The research committee and teaching committee use a rotating membership system which addresses the “committee overload” issue. The DSAT has the status of a committee within the department and one member of the DSAT is also on the DEC. Postgraduates, PDRAs and academic staff were invited to join (at the departmental meetings and by email), so the DSAT comprises people genuinely interested in the SWAN agenda. As discussed above, there is a female presence on interview panels and similar ad hoc committees. We aim to have women on these committees to reflect the percentage of female academic staff, as it is on the main departmental committees (AP 11.5). Our female staff are also engaged in influential committees at University level: two female academics serve on Senate and one on Council.*

- (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.

*Our quantitative workload model recognises all of the activities that academic staff undertake in their role. A spreadsheet detailing teaching, research, pastoral and administrative load is issued to staff in advance of each academic year. Prior to that academic staff are asked to express their preferences. The model assigns a number of hours to each duty or task. Promotion criteria are set at university level and recognise contributions to research, teaching and administration. In assessing cases, contributions are sought across the board, and both formal (e.g., committee work) and informal (e.g. schools visits) work is recognised. With the exception of our permanent Director of Teaching, all other responsibilities are rotated, with timing often being driven by individuals’ wishes or by events such as sabbatical leave. Staff with caring responsibilities or who need to work flexibly can submit a timetabling request so that they do not teach at specific times during the day. The SDPR and PAP, described above, provide opportunities for staff to express their wishes to the HoD. The full workload for each member of staff is circulated annually in diagrammatic form to all staff for transparency.*

*The department hopes to attract women to senior academic posts via hiring and promotion, which implies leadership and management duties. To make the workload associated with these senior posts more attractive, we plan to introduce job sharing for senior academics. Currently, the HoD has a deputy. We believe that the workload of other roles can be managed in a similar way (AP11.4).*

- (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.

*Most departmental meetings and committees take place after 10.15 am. Staff can apply via the HoD for teaching timetabling that accommodates school runs and other work/life balance issues. A number of such applications were made in 2013/14 and all were granted. The department has a*

*weekly informal staff gathering (coffee and buns) on Mondays at 10.15. Postgraduate students organise a social evening on Fridays at 5pm approximately once a month, which is open to all postgrads, PDRAs and academic staff and is the only event held slightly out of hours. These informal meetings are scheduled to enable most people to attend.*

*The department considers 10.15 to 4.15 as core hours, and does not normally schedule business outside this period. The department does not encourage students and staff to stay beyond working hours and is generally flexible on attendance during hours that are not scheduled for teaching.*

- (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 department has staff and PG students from a wide range of countries and cultures, and in general they work well together. Meetings are typically collegial and are well managed. There is a long-standing ethos of personal respect within the department. Disparaging and out-dated views on equality matters are unheard of; personal lifestyles are respected. In the SWAN survey conducted by the university throughout STEM departments in 2014, 65% of respondents agreed that their department has “a very positive working culture”, 54% agreed that “it is easy to have one’s opinion heard in my department”. Among the respondents, 74% agreed that “people treat each other with respect in my department”, and 75% supported the intention of SWAN to increase the participation of women academics in STEM.*

*A focus group of PDRAs and PhD students, conducted in August 2014, identified several issues related to culture in the department. The lack of social space and of a structure to provide for the social integration of PhD students and new PDRAs was noted and action is planned (**AP 11.1**). They felt that the level of mentoring could be more comprehensive. In particular, in addition to the usual research supervisor some PhD students would like to have a mentor (**AP 7.2**). From the survey we also learned that some PhD students and PDRAs don’t have a clear picture of the support available in the department and at university level. To answer this we will develop departmental manuals (**AP 9.1 and 9.2**). Some participants in the focus group, though acknowledging the support the department provides for scientific networking (conferences, workshops, external seminars) would like to see this support broadened. As a positive model for this, the funded student exchange programme between the department and National Institute of Informatics in Tokyo was given as an example of good practice by the focus group (**AP 11.2**).*

*The department runs a number of research seminar series. We will make sure that the gender balance among the internal speakers and invited external speakers is maintained across the seminars (**AP 11.6**).*

*In the focus group, PDRAs were concerned by insufficient support for their career development. Starting from 2014/15 the university, with support from the department, is addressing this issue by launching the Bath Science Academy programme. Currently three of our researchers are admitted, including one woman. We plan to broaden participation from the department, encouraging PDRAs to enroll (**AP 7.3**). We will also encourage participation in the Bath Scheme, a university process by which staff can gain national recognition from the Higher Education Academy.*

- (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.

*The department is active in outreach work aimed at school students. Examples include:*

*Professor James Davenport is the coordinator for the South West region of the BCS Computing at School network. He has been involved in developing the new national curriculum for Computer Science and has been awarded a National Teaching Fellowship. Through the Computing at Schools network, the department contributes to supporting the work of school teachers in computer science.*

*Dr Paola Bruscoli collaborates, since 2006, with the International Baccalaureate Organisation (IB) for which she is currently Chief Examiner for Computer Science (and was Deputy Chief Examiner before) and has participated in their Computer Science curriculum development. IB is aware of the problem of the “leaking pipe” and is active in addressing the problem in IB schools, for all the STEM subjects, both at institutional level, and at the level of course syllabuses.*

*Dr Joanna Bryson and Dr Paola Bruscoli participated in the “Counting on Girls” project, attending a one day event at Ralph Allen School in Bath in March 2014 (the day before International Women’s Day). The project, funded by the University of Bath, aims to encourage female students in years 9 and 10 to consider a future in science, maths, computing or engineering.*

*The department has close ties with the Royal High School Bath and with Ralph Allen School, working closely with the Head of ICT and Computer Science there (Bath alumnae) and with the CAS network. In all of these activities the role of female staff is prominent. The department plays an essential role in the university’s Open Days, and runs its own Open Days. For the 2015/16 student intake the department will trial women only Open Days **(AP 1.4)**.*

*The department recognises outreach work as one of its core activities. Staff involved in it are seen as “the face of the department”. It plays an essential role in appraisals and promotion. In one of the recent promotions to Senior Lecturer it was one of the decisive factors.*

### **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.

*As shown in Table 15 below, the maternity return rate is 100%. We provide support to returners by not assigning them teaching and administrative roles that they are not familiar with, and allowing them to conduct their non-laboratory research from home. This results in an overall reduction in*

their duties. We will refine this policy in future by giving explicit consideration to the balance of duties, assisting returning staff to re-establish their research profile after a career break.

**Table 15 Maternity returns**

MATERNITY LEAVE	Uptake	Returners	Return rate
2011/12	1	1	100%
2012/13	0	0	-
2013/14	2	2	100%

- (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.

*There has been one application for paternity leave in the last three years and it was granted. Of course all eligible applications will be granted.*

- (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.

*There was one request for flexible working over the past three years, from a female Reader in 2013/14 to facilitate work-life balance, and it was approved.*

- 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.

*In 2013/14 there was one female Reader officially working flexibly to facilitate work-life balance. Staff are told about flexible working opportunities by means of an explicit annual process which informs the teaching timetabling. HoD reminds staff of options for flexible working as listed in the Flexible Working policy at the start of each academic year, and he manages the process. Training has been offered to all managers by HR and relevant managers have attended.*

- (ii) **Cover for maternity and adoption leave and support on return** – explain what the department does, beyond the university maternity policy package, to support female staff before they go on maternity leave, arrangements for covering work



during absence, and to help them achieve a suitable work-life balance on their return.

*The department had very few women taking maternity leave in recent years, as seen in Table 15. In consultation with both recent “leavers” (one PDRA, another academic staff) the current university provision was rated as exceptional. The nature of research in many areas of computer science allows individuals to work from home, which was successfully used. The academic staff “leaver” appreciated the arrangement provided by the department, by which she did not get new unfamiliar administrative roles and new units to teach after return her return to work. We are planning to make this arrangement the departmental policy (AP 14.1).*

[4106 words]

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

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

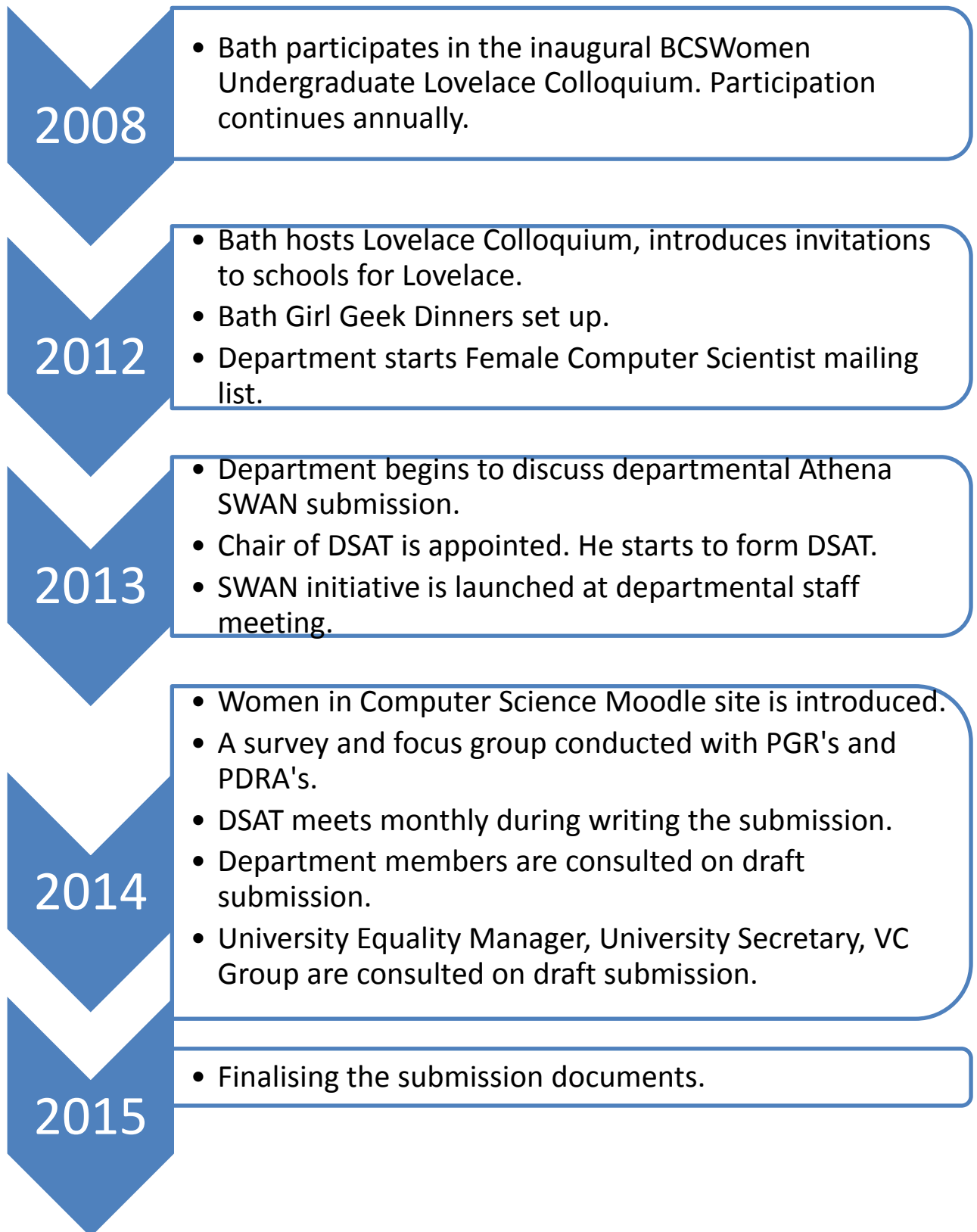
*A survey was conducted by DSAT in 2014 with postgraduate students and PDRAs. The results were fed to a focus group. The group was international by composition and with international experience both at educational and research level. The results presented below specifically mention only experiences at Bath. They were used substantially in completing previous sections of this application and in the Action Plan.*

*The focus group identified the following issues.*

- *The lack of social space and of a structure to provide for the social integration of new postgraduate students and PDRAs. The department’s move to a new building in 2014/15 has provided limited such space; we will seek to improve the situation in the second phase of the move in 2015/16 (AP 11.1).*
- *There is no clear understanding about what support exists for postgraduate students and PDRAs. An improved induction and a handbook will be developed to address this (AP 9).*
- *A suggestion was made to have an academic mentor as well as a supervisor (or principal investigator) which may or may not be the same person. We will provide mentors who are not necessarily the supervisor/PI (AP 7.2).*
- *PDRAs are not sufficiently advised on career pathways. The department has started to provide assistance through mentoring and the university’s Career Service employability programme (“Bath Science Academy”), “Bath Scheme”, and the University’s Learning & Teaching Enhancement Office (AP 6.2 and 7.3).*
- *The importance of academic exchange was highlighted. We will increase support, including financial, from the department for PhD students to participate in conferences, workshops and seminars including travel expenses and childcare support (AP 11.2).*

[266 words]

**Figure 11 Journey to submission 2008-2015**



## 6. Action plan

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

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

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

## Action Plan 2015-2018

Subject/context	Action	Outcome measures	Responsibility	Completion date
<p>1. Undergraduate student recruitment. Increasing female applicant pool for undergraduate programmes</p>	<ol style="list-style-type: none"> <li>1. Participate in outreach activities such as CAS, IB, school visits, and career advice at schools.</li> <li>2. Organise two workshops within girls schools per year.</li> <li>3. Organise at least one role model session with schools/colleges per year.</li> <li>4. Organise all-women departmental Open Days.</li> <li>5. Revise promotional materials with a greater emphasis on female role-models from our placement students and graduates.</li> <li>4.6. Include Open Day attendees on female CS students mailing list.</li> </ol>	<p>Increase in the percentage of female students applying for and achieving undergraduate places to reach national average.</p>	<p>Director of Recruitment, DSAT.</p>	<p>Starting in 2016 then continuous to complete by 2018.</p>

<p>2. Postgraduate taught recruitment. Increasing female applicant pool for postgraduate taught programmes</p>	<ol style="list-style-type: none"> <li>1. Using the current upturn in PG female student numbers ascertain from current cohort the factors that led to their application to Bath.</li> <li>2. Analyse the results of the focus group and disseminate the results for discussion and action within the postgraduate taught recruitment team.</li> <li>3. Revise promotional materials with a greater emphasis on female role-models from our MSc students and graduates.</li> <li>2.4. Seek targeted funding for female MSc students via the alumni office.</li> </ol>	<p>Maintain a recruitment ratio of above the national average for postgraduate taught women in Computer Science each year.</p>	<p>Recruitment officer for MSc programme.</p>	<p>Starting in 2015 then continuous.</p>
<p>3. Postgraduate research student recruitment. Increasing the female applicant</p>	<ol style="list-style-type: none"> <li>1. All people on interview panels will have to pass training in</li> </ol>	<p>All relevant staff trained, with the aim for all research and</p>	<p>All relevant staff, HoD.</p>	<p>Starting 2015 and continuous.</p>

pool for PhDs	Diversity in the Workplace and Unconscious Bias training.	academic staff trained.		
	2. The wording of advertising will include “We are working to improve the gender balance within the student population and particularly welcome applications from women”.	Increase in female:male ratio for PGR students to reach the national ratio in Computer Science by the end of three year period.	Recruitment officer for postgraduate research.	Starting 2015 and continuous
	3. Look into ways to increase the number of PhD bursaries to attract suitable overseas candidates, in particular women.	Increase the number of overseas research students to national average.	Recruitment officer for postgraduate research, HoD.	Starting in 2016 and continuous.

<p>4. Recruitment of female research staff</p>	<p>1. Review the success of 2012/13 in hiring women PDRAs and return to similar percentages. Review where we advertise and the content of advertisements for research staff. Widen the range, methods and publications.</p> <p>2. Closely monitor success rate of female research staff.</p>	<p>Achieve at least 35% female research staff.</p>	<p>Director of Research, principal investigators of research grants.</p>	<p>Starting in 2016 and continuous to complete by 2018.</p>
<p>5. Recruitment of female academic staff</p>	<p>1. Continue our efforts to recruit more female academic staff, including among internal female research staff, strictly on merit.</p> <p>2. Review sources of advertisements with the aim to expand them.</p> <p>3. Engage in proactive search for female candidates when recruiting staff.</p> <p>4. Seek to appoint a female Visiting Professor, both as a role model for female staff</p>	<p>Increase the percentage of female academic staff to at least the national level of 21%.</p>	<p>HoD</p>	<p>Starting in 2016 and continuous to complete by 2018.</p>

	<p>and to assist in search activity.</p> <p>5. Add wording to post advertisements: “Both the Department and the University are committed to providing a supportive and inclusive working environment. We are working to improve the gender balance within the Department and particularly welcome applications from women”.</p>			
	<p>6. All members of interview panels will have to pass training in recruitment and interviewing skills, Diversity in the Workplace and Unconscious Bias training.</p>	<p>100% relevant staff trained.</p>	<p>All staff involved in recruitment, HoD</p>	<p>Starting in 2015 and continuous.</p>
	<p>7. Provide a special justification in each case when all-male short list occurs to explain methods used to recruit and what measures will be</p>	<p>A justification paper will be submitted on every occasion.</p>	<p>Head of Dept., DSAT</p>	<p>Starting in 2015 and continuous.</p>



	taken in future.			
6. Staff turnover	1. Monitor academic staff turnover.	The current positive trend should continue.	HoD	Starting in 2015 and continuous.
	2. Extend the system for advising and mentoring research students and PDRAs on career issues, in particular with the University's Learning & Teaching Enhancement Office and Bath Scheme.	100% employment of research students and PDRAs within 6 months of the graduation or end of research contract as appropriate.	Director of Studies for research students, Director of Research.	Starting in 2015 and continuous.
7. Support at key transition points	1. The process of SDPR will include a focus on development needed for individuals to achieve their career goals.	The completed SDPR forms will inform HoD and senior staff in the department about possibilities of promotions.	HoD	Starting in 2015 and continuous.
	2. Expand the mentoring system from probation lecturers to all academic, research staff, and postgraduates who wish to have a mentor. The mentor should not be a project PI in the case of research	All staff who want a mentor will be offered one.  New staff will be informed about the mentoring system at the induction.	HoD	Starting in 2016 and continuous.

	staff, or PhD supervisor in the case of students.			
	3. Continue to offer Bath Science Academy programme to research staff and encourage them to apply.	At least one member of departmental research staff to be enrolled on the programme at any time provided that places are made available.	Director of Research.	Starting in 2015 and continuous to complete by 2018.
8. Promotion	<p>1. We will encourage all academic staff open to consideration for promotion to develop Personal Action Plans, in conjunction with their line managers.</p> <p>2. Academic staff conducting annual SDPR will encourage applications</p>	The action should result in a more structured promotion stream.	HoD	Starting in 2015 and continuous.

	for promotion when appropriate.			
9. Induction and training	<p>1. Develop departmental manual for new research students.</p> <p>2. Develop departmental manual for new research and academic staff.</p>	Manuals will appear on departmental website and will be given in hardcopy to new research students, research and academic staff.	PhD Director of Studies, Director of Research	By the end of 2015.
10. Support for female students	Continue support and encouragement of participation in British Computer Society Women Undergraduate Lovelace Colloquium.	Increase in number and continue winning prizes at the colloquium.	Director of studies for undergraduates, DSAT	Starting in 2015 and continuous.
11. Organisation and culture	1. Organising a suitable space in the new Computer Science building for postgraduate students and staff to meet informally and enhance the community and culture of the department.	Identifying and providing an appropriate space.	HoD.	<p>By the completion of the move to new building.</p> <p>This is in the past.</p>

	2. Increase support, including financial and childcare, from the department for PhD students to participate in conferences, workshops, seminars. Requires application for support.	At least five students should be supported annually.	HoD	Starting in 2015 and continuous.
	3. Facilitate the arrangement of temporary child care when hosting workshops, conferences and seminars.	Include this provision in conference organisation plans.	HoD, meeting organisers.	Starting in 2016 and continuous.
	4. On the basis of need, introduce job-sharing for administrative duties in the department to reduce overload particularly for senior academic staff.	Administrative workload will be shared by, e.g., introducing deputies, in cases when work/life balance requires it.	HoD, relevant departmental committees.	Starting in 2016 and continuous.
	5. Percentage of women on interview panels and similar ad hoc committees will reflect the percentage of female academic staff.	Percentage will be maintained at the current level among academic staff.	HoD, Chairs of relevant committees.	Starting in 2015 and continuous.
	6. Maintain gender balance among the	Aim at overall 30% female research	Research seminars'	Starting in 2016 and

	internal speakers and invited external speakers at departmental research seminars.	seminars' speakers.	supervisors, director of research.	continuous.
12. Outreach activities	Continue outreach work through CAS, IB, school visits (see item 1 of this plan). Recognition of this work in appraisals, promotions.	Increase the female:male ratio in coming years (see item 1 of this plan).	CAS and IB reps, Director of Recruitment, DSAT, HoD.	Starting in 2015 and continuous.
13. Paternity, adoption and parental leave	To be proactive in offering leave and flexible working around leave.	All potential leavers will be proactively offered the arrangement.	HoD	Starting in 2015 and continuous.
14. Maternity leave	1. To facilitate transition back into work, introduce a departmental policy of balanced administration, pastoral and teaching duties for returners from maternity leave, including possibility to conduct research from home. The assignment of duties should give explicit consideration to the need to re-establish research momentum after a career break.	Introduction of the policy.	HoD	2015