

Athena SWAN Bronze department award application

Name of university:	University of Southampton
Department:	Physics & Astronomy
Date of application:	November 2014
Date of university Bronze an	d/or Silver SWAN award: Nov 2012

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

1 Letter of endorsement from the head of department: (maximum 500 words: word count 498)

I am pleased to be writing in support of the application for an Athena SWAN Bronze Award by the department of Physics & Astronomy (P&A) at the University of Southampton.

We believe that P&A at Southampton has always tried hard to give equal opportunities to all its staff and students, and to counteract the male-dominated ethos of physics wherever we were able. We have noted work over a long period from the Institute of Physics and the Royal Astronomical Society that documents and analyses the desperately low representation of women nationally amongst students, researchers and academics in physics. But even set against low national benchmarks, it was profoundly disappointing to realise in the summer of 2013 that the new Southampton physics undergraduate cohort would comprise less than 15% of women, some 5% even below the national average. The need for an urgent reappraisal of the culture and processes of this department could not have been more clear.

In November 2013, therefore, I created a Widening Participation Committee (WPC) in Physics and Astronomy. The launch of the WPC was marked by a well-attended lunchtime meeting for all P&A staff, featuring a presentation by Prof Averil Macdonald, the Diversity Lead for SEPnet (South East Physics Network). I chaired the WPC personally for the next 9 months, while we developed the remit for this group, and recruited a broadly-based and committed membership representing academic staff at all career levels, technical staff, research staff, and postgraduate research students, as well as members of Faculty and University administration. A key member of the WPC is our full-time Public Engagement Officer, who has led and coordinated outreach in P&A since 2004. Her work with schools and colleges has frequently highlighted obstacles that face women interested in the physical sciences. Since 2006, the Education and Outreach division that she leads has been funded through P&A's involvement in SEPnet, itself created in response to a national drop in overall physics undergraduate numbers.

I have set a target for the WPC of doubling our fraction of female undergraduates in P&A over 5 years. More broadly, the WPC is tasked to identify and effect actions within our sphere of influence that will contribute towards bringing more women into P&A at all levels and improving their experience here.

The immediate task for the WPC has been to act as our Self-Assessment Team in constructing this application to you. The process has been in many ways sobering, as we realise how frequently things happen out of expediency or under pressure in ways that fall short of ideal, especially in the aftermath of institutional restructuring. We propose a programme of action that will begin to address our situation, and that will define the continuing remit of the WPC. We include each action point in a short form in the text, where the corresponding issue is identified. A full description of the action points appears in Section 6.

We look forward very much to receiving your feedback on our self-evaluation.

Yours faithfully

Fa Charle

Prof Phil Charles Head of Physics and Astronomy

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2 The self-assessment process: (maximum 1000 words: word count 674 + table)

Describe the self-assessment process. This should include:

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

The self-assessment team (SAT) in Physics and Astronomy (P&A) is identical to the Widening Participation Committee (WPC) that was set up in late 2013 at the urging of the Head of Department. Prof Charles has led P&A in the growing realisation that lack of diversity in our community at all levels is a pressing concern. Prof Charles chaired early meetings of the WPC, at which the scale of the overall project was assessed, and an estimate of the number and type of membership that we needed was formed. He was particularly active in persuading the individuals that we needed to volunteer for the SAT, which reached its final form, described below, by summer of 2014. At the end of the 2013/2014 academic session, as the WPC entered the final phase of the self-assessment process, Prof Charles handed over the Chair role to Prof Anne Tropper, who was released from teaching duties in 2014/5 for this purpose. However, in recognition of the importance of this work, Prof Charles continues as a member of the SAT and works closely with Prof Tropper.

The SAT has 17 members, of which 10 are women and 7 are men. The Head of P&A is an ex-officio member. Member names and roles are listed in the table below, which also summarises work-life balance experiences.

Name	Departmental/SAT Roles & experience of work-life balance
Prof Anne Tropper	Head of Semiconductor Laser Group & Chair of SAT
	Focus group facilitator
	Anne worked full time while bringing up three children, born in 1986, 1989 and 1995, with 3 months statutory maternity leave for each pregnancy. She undertook a term as Head of School from 2002 – 2005 while her youngest child was still in primary school.
Ms Ceris French	P&A Senior Administrative Officer & Secretary of SAT
	Focus group facilitator
Prof Phil Charles	Head of P&A
	Phil has grown-up children, but has arranged for his 92-yr old father to be located in a nearby nursing home, so that he can be involved in his care as his health declines.
Prof David Smith	Head of Nanomaterials Group and Admissions Tutor
	David feels that his job is much more flexible than many other careers, and allows him to take an active role in looking after his 8-year-old son.
Mr Paul Martin	Director of Teaching Laboratories

Dr Mark Sullivan	Principal Research Fellow + Astro Graduate Tutor
	Mark has two young children (one pre-school and one year-R) and his wife also works full-time at the university. This has required a careful balancing and coordination of childcare with work-related travel/duties; this usually means working many evenings during the week once the children are in bed.
Dr Matt Himsworth	Senior Research Fellow Matt Himsworth is a Senior Research Fellow entering the final year of a 5-year fixed-term contract, with as yet no commitment from the university beyond this. He has two pre-school children and his wife works part-time shifts as a nurse, requiring flexibility in Matt's working hours to provide childcare and working most evenings of the week. This also limits travel opportunities for conferences and requires a great deal of organisation.
Dr Vasilios Apostolopoulos	Lecturer and Head of Terahertz Laboratories
Catherine Struggles	Faculty Human Resources Manager
Ms Pearl John	Public Engagement Leader, P&A and SEPnet Outreach Officer Focus group facilitator
	Pearl is a full-time member of staff and a part-time postgraduate student. She is childless/childfree. Pearl has a Mother who is very ill so often travels to support her.
Alexander Melhuish	University Diversity Project Officer
Ms Judith Ineson	PhD Student
	Focus group facilitator
	Judith Ineson is a mature postgraduate student who started full- time in 2009, but then transferred to part-time working when her mother became very ill.
Ms Elena Mavrona	PhD Student
	Focus group facilitator
Ms Jennifer Allerton	Yr 3 Undergraduate Student
Ms Joanna Carthy	PhD student
	Focus group facilitator
Ms Angela Loines	Faculty Marketing officer
Ms Wendy Slack	Faculty Recruitment and Admissions Team Leader
	Focus group facilitator

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 WPC/SAT has met on 9 occasions in the process of preparing our Athena Swan submission and in developing the action plan. We organised 5 focus groups to consult (separately) with undergraduate, postgraduate, and fixed-term contract staff. Since the conduct of focus groups has turned out to be a labour-intensive process, we have concentrated these initial efforts solely on female participants (with female facilitators): one participant (postdoctoral) complained that this was unbalanced. During summer and early autumn we asked staff and research students to complete the online HE STEM Staff Culture survey; 41 individuals responded (and this survey will now be run annually: see **AP 2-2**). The SAT has benefitted from the advice of an independent consultant; Prof Averil Macdonald, University of Reading. On 6th October 2014 Prof Macdonald led a 90-minute introductory session on Unconscious Bias at a lunchtime meeting open to all staff. This voluntary session was attended by 42 staff, representing all P&A research groups, career stages, and job families. An animated Q&A session following the presentation, as well as much positive email feedback to Prof Tropper, attested to the high level of interest.

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.

Following submission of this application, the SAT will meet quarterly to work on delivering the action plan which has been accepted by the Head of P&A. The Chair of the SAT will continue to be accountable to the Head of Academic Unit for delivery of the action plan. The Head of Academic Unit will continue to be a member of the SAT ex officio. The action plan will be updated on an annual basis. Where new action points require the consent of the Faculty, it will be the responsibility of the Head of Academic Unit to take these issues to the Faculty Executive Group, and negotiate an agreement.

The staff survey found that 71% of women and 67% of men did not agree that P&A had made its policies in relation to gender equality clear to them: only 33% of women agreed that they were kept informed about gender equality matters that affected them. It will be an urgent task to put this right. Diversity will therefore be the focus of one P&A lunch forum meeting annually, in which this information will be communicated (**AP 2-1**). In addition, numbers by gender for student recruitment (UG and PG), and for appointments of contract research and academic staff, over the most recent 12-month period, will be presented for the assessment of the whole department; and the Chair of the WPC/SAT will report on timely completion, or otherwise, of the action plan that defines the agenda for this committee. Finally, we will now run an annual staff culture survey to assess year-to-year the impact on staff of our Action Plan (**AP 2-2**).

Action Point 2-1: Institute annual P&A lunchtime Diversity Forum meeting for all staff.

Action Point 2-2: Institute annual staff survey assessing culture and diversity in P&A for review by SAT.

3 A picture of the department (maximum 2000 words: word count 1980)

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

3.1 Pen picture of Physics and Astronomy

The Department of Physics & Astronomy (P&A) is located in a single building (B46) on the Highfield Campus, and is one of three departments within the Faculty of Physical Sciences and Engineering (FPSE), the other two being Electronics & Computer Science (ECS), who hold an Athena SWAN Bronze award, and the Optoelectronics Research Centre (ORC). Until 2010, P&A was an autonomous school, with its own devolved budget; however, following University-wide restructuring, the administration of student programmes, student recruitment, HR, finance, and marketing are organised at faculty level. The University now in principle devolves all budgets to faculties; the Dean signs off new appointments, and sets targets for the departments with respect to student recruitment and research income. The three department heads sit on the Faculty Executive Group (FEG), chaired by the Dean. Other members of FEG include the Associate Deans for Education, Enterprise, and Research, the Faculty Finance Manager, HR Manager and Head of Faculty Operations. Faculty committees determine the overall policy for education, research and enterprise. P&A runs its own undergraduate recruitment days and organises staff appointment panels and shortlisting. The P&A Director of Programmes assigns workload to academic staff.

In 2008, P&A joined six other universities in forming SEPnet¹ (the South East Physics Network): in 2013 SEPnet-2 was launched, now with nine partner and three associate universities. SEPnet-2 works to improve diversity and research impact, and to raise the quality of postgraduate training through shared GRADnet tuition.

Research in P&A spans a broad range of frontier areas of 21st century physics, organised into three groups: Astronomy ('Astro'); Quantum Light and Matter ('QLM'); and Theoretical Elementary Particle Physics ('Theory'). Academic staff members supervise research students of the Faculty Graduate School, which lays down a framework of intermediate assessments for progression towards the doctorate degree, including a hurdle at 18 months when students apply to transfer their registration from MPhil to PhD.

P&A currently has 34 academic staff, 25 postdoctoral researchers, and 88 doctoral students, linemanaged through the three research groups, who organise research colloquia, specialist postgraduate training, and social events. Postgraduate students are also required to undertake generic training at Faculty level. Some subject-specific lectures are available via GRADnet. Two Deputy Heads assist the Head of P&A, one responsible for education and one for research, and, together with the three research group heads and the P&A Technical Resource Manager, they form P&A's Senior Management Team (SMT) overseeing the operation of P&A. SMT meets fortnightly during term-time, and monthly at other times. All these posts (except for the Resource Manager) are appointed for three-year periods. There is a P&A 'lunch forum', held termly, involving all P&A staff for broader consultation on strategy and processes.

¹ See <u>http://www.sepnet.ac.uk/</u>

P&A delivers research-led undergraduate education, offering 11 programmes covering the fundamentals of physics, together with options in photonics, nanotechnology, astronomy, space science and mathematics. Each undergraduate is assigned a Personal Tutor with whom they spend 1 hour per week in the 1st year, studying core physics in a group of 5 students.

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.

3.2 Student data

3.2.1 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 university offers an Engineering, Physics and Geophysics Foundation Year (typical FY intake: 140 students), designed for applicants with non-standard physics-entry A-levels, international students, or entrants from other careers. Successful completion of the course guarantees acceptance onto any engineering, physics or geophysics programme. In 2013/14 there were 5 female and 15 male graduates of the foundation year starting in 1^{st} year physics programmes – a better gender ratio than for conventional entry.

The SAT notes that FY provides a classic route for widening participation, allowing students with non-standard physics-entry backgrounds (e.g., A-level Maths but not A-level Physics) access to our degree courses. The FY course is advertised via P&A², but without any specific material for attracting women. This leads us to **AP 3.2.1-1**:

Action Point 3.2.1-1: Improve future effectiveness of FY for widening participation in Physics degree courses

² See <u>http://www.phys.soton.ac.uk/programmes/f301-bscmphys-physics-foundation-year</u>

3.2.2 Undergraduate male and female numbers – 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.



Figure 3-1: Total number of female (light) and male (dark) undergraduates registered to a physics programme, 2008/09 – 2013/14. Triangles indicate percentage of female students.

Our undergraduate (UG) intake has grown by 40% over 6 years, and by 30% over the period 2008/9 to 2011/12 (**Figure 3-1**). Nationally, the physics UG population grew by 10% between 2008/9 and 2011/12 – the figure was 17% for the Russell Group (RG) of universities.

Over a period in which the national average percentage of female physics UGs has remained stable at close to 20%, we have seen an improvement from a low of 14% in 2008/9 to 19% in 2012/13. In 2013/14, however, an intake with <15% of women reversed this trend. Thus our female percentage remains low, and is indeed one of the lowest within the RG.

We are making a conscious attempt to market our degrees to women. We currently make use of images that feature women at least as often as men (e.g. images of our alumni, of students at Harvard on a year-in-research programme, of students at Tenerife experiencing our astronomy field course, etc.). A long-term commitment for this department is to work towards growth in the anomalously small pool of female A-level physics students via our outreach programme to schools and colleges that includes activities targeted at women (Section 0). We know anecdotally that there are many individual instances of an outreach experience that has transformed a career.

Nevertheless, it is also clear by now that marketing and outreach on their own cannot counteract the prevailing culture strongly enough to increase the penetration of women into A-level physics classes. The IoP has shown that quality of teaching is paramount here, and that female students are disproportionately put off by weak lessons. We offer support to local teachers through delivery of our SEPnet GCSE Outreach Workshops, with female UG Physics students to act as role models and subject specialists in the classroom. In addition, we encourage our UGs to take part in the Undergraduate Ambassadors Scheme, which sends students to work in local schools, and we send female UGs to local college open days to encourage pupils to take up physics at university, which also prompts interested students to consider a career in teaching. It is clear, however, that there is substantial room for improvement in the number of female UGs undertaking degrees in P&A. The SAT is committed to scrutinising and improving our UG admissions process; the relevant action point will be described in Section 3.2.5.

3.2.3 Postgraduate male and female numbers completing taught courses

P&A has not offered taught postgraduate degrees within the submission period.

3.2.4 Postgraduate male and female numbers on research degrees – 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.



Figure 3-2: Numbers of female (light) and male (dark) postgraduate research students each year from 2008/09 – 2013/14. Triangles indicate percentage of female students.

For three years, from 2009 to 2011, we enjoyed a postgraduate research (PGR) student community that was >25% female (**Figure 3-2**); a ratio that we have never achieved in our UG community. Our female PGR number has since dropped back to its previous level, even though the male cohort grew. We are therefore below the national average of 22% for female physics PGR students, and our UG and PGR female fractions are currently comparable. We concede that little is done to solicit PGR applications from women, or to enable female UGs to assess PG research as an option for them. We will address this through **AP 3.2.4-1**:

Action Point 3.2.4-1: Raise profile of PG research amongst our women UGs via an annual targeted event

3.2.5 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.

Undergraduate admissions data

Table 3-1: Ratio of course applications to offers and acceptances ('entrants') by gender for
undergraduate degrees from 2008/9 to 2013/14.

UG Applications		ons		Offers			Entrants			Converted applications		Converted offers	
	М	F	% F	М	F	% F	М	F	% F	М	F	М	F
2008/09	389	99	20%	349	96	22%	86	10	10%	22%	10%	25%	10%
2009/10	425	119	22%	395	113	22%	85	18	17%	20%	15%	22%	16%
2010/11	543	145	21%	498	137	22%	106	26	20%	20%	18%	21%	19%
2011/12	691	175	20%	669	172	20%	110	29	21%	16%	17%	16%	17%
2012/13	664	168	20%	592	156	21%	102	21	17%	15%	13%	17%	13%
2013/14	704	187	21%	608	173	22%	115	22	16%	16%	12%	19%	13%

No clear trend emerges over time: over a period in which our total applications increased 1.8-fold, the proportion of female applicants has stayed fairly constant at around 20 - 22%. The fraction of female applicants to receive an offer is close to 100%, and the fraction of male applicants to receive an offer is generally less than 90%.

However, in five out of the six years presented, the percentage of women who accepted their offers ('Converted Offers') was lower than the corresponding percentage for men. Although in a single year the numbers are sufficiently low that they might arise by chance, the consistently lower female percentage indicates a real effect: female applicants find Southampton P&A less attractive than males. A key issue for the SAT is to identify and remove whatever mechanisms operate here.

At all stages of the annual UCAS recruitment cycle we aim to project a sense of the fair, inclusive and enabling learning environment that we aspire to deliver. Nevertheless, the evidence is clear that we need change, and this area will be addressed via **AP 3.2.5-1**. In particular, we will take measures to improve the female UG experience (see **APs 3.2.4-1, 4.2.3-3**), and draw attention to these measures, once implemented, in our UG recruitment materials.

Action Point 3.2.5-1: Review materials and processes used in UG recruitment, taking measures to improve the female UG experience

The centrally held statistics for PGR admissions in P&A are shown in **Table 3-2**. The numbers raise questions about integrity of the data record: in 2013/14 we appear to have had more entrants than we made offers. It nevertheless appears that in the 4 most recent years, the proportion of female PGR applicants is roughly 20%, consistent with the average of the physics UG population both nationally and in our department.

Postgraduate admissions data:

Table 3-2: Ratio of course applications to offers and acceptances by gender for PG research degrees from 2008/9 to 2013/14.

BC Voor	Applications			Offers			E	ntra	nts	Entrants/Apps	
FG Teal	М	F	% F	Μ	F	% F	М	F	% F	М	F
2008/09	73	33	31%	10	10	50%	9	7	44%	12%	21%
2009/10	93	34	27%	18	4	18%	17	4	19%	18%	12%
2010/11	90	25	22%	16	3	16%	15	3	17%	17%	12%
2011/12	81	18	18%	17	5	23%	16	4	20%	20%	22%
2012/13	123	35	22%	25	6	19%	24	4	14%	20%	11%
2013/14	105	24	19%	17	6	26%	23	5	18%	22%	21%

3.2.6 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.

The charts in **Figure 3-3** show the distribution of UG degree classifications for graduates of all physics programmes for women (left) and men (right). Some do not pass: in 2012/13, for example, there were in addition to the graduates included in the charts, 4 men (and 0 women) of this cohort who had failed to meet the academic criteria for continuing their studies at some point over their 3-or 4-year programmes. In 2013/14, 37% of male graduates and 38% of female graduates achieved 1st class degrees. Accordingly, we find no evidence for any gender bias.



Figure 3-3: Distribution of degree classifications for female and male physics graduates over 5 years, 2008/09 (front) to 2012/13 (back).

PGR	Doctorat	e	MPhi		Withdrew		
	М	F	М	F	М	F	
2008/09	14	4	2	0	1	0	
2009/10	18	2	0	0	0	1	
2010/11	14	3	0	0	1	0	
2011/12	12	5	0	0	3	0	
2012/13	11	9	0	0	1	0	

Table 3-3: Postgraduate research degree outcomes by gender from 2008/9 to 2012/13.

Table 3-3 shows the numbers of men and women graduating from P&A each year with postgraduate research degrees. The right-hand section, headed "Withdrew", in principle also includes candidates who fail at the viva stage; however, this is rare, and SAT members are not currently aware of any such cases. The Faculty Graduate School requires students to submit within 4 years; to the best of our knowledge the 4-year deadline is met in almost all cases.

3.3 Staff data

Figure 3-4 shows the career progression paths for academic staff in the Education, Research and Enterprise (ERE) family, with the current job titles given to staff at Levels 4 – 7 in each of the four pathways. Level 6 is the grade formerly termed Senior Lecturer or Reader. As well as the classical 'balanced pathway', specialist pathways are also available. The University goes to great lengths to publicise career progression along each of these pathways.

Figure 3-4: Southampton University career paths within the Education. Research and Enterprise (ERE) job family.



3.3.1 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 gender balance of ERE staff in P&A across all levels, 4 - 7 has remained almost constant for 5 years (**Figure 3-5**), with the female fraction steady at 17 - 20%. This is slightly higher than the RG average, which hovers around 15% over this period.



Figure 3-5: Numbers of female (light) and male (dark) academic staff, all levels, each year from 2008/09 – 2013/14. Triangles indicate percentage of female staff.



Figure 3-6: Numbers of female (light) and male (dark) academic staff in 2013/14 by grade. Triangles indicate the percentage of female staff.

Figure 3-6 shows the breakdown of our academic staff by gender for the academic year just completed, 2013/14. In 2009/10, 29% of our Level 6 staff were female; since then one of these women was promoted, and a number of male staff at Level 5 received promotions to Level 6. Following the 2012 promotion round, we have had 3 female professors, representing 19% of the Level 7 staff; the mean for the RG in recent years has lain between 6% and 8%.

Level 4 staff in P&A are postdoctoral fellows on fixed-term contracts. The low proportion of women is of particular concern, since this career stage represents the gateway into the profession. (The recruitment issue will be addressed in **AP 4.1.1**.) We shall aim to improve the support that we give to women at this stage, maximizing their chances of progressing into a permanent academic career, via **APs 3.3.1-1** and **3.3.1-2**.

Action Point 3.3.1-1: Provide annual female-only physics-specific workshops on planning a research career, applying for fellowships, and building a competitive publications track record.

Action Point 3.3.1-2: Require the Principal Investigator & HR to report briefly to the SAT 1) on every instance of the termination of a grant employing one or more postdocs (either gender), explaining how the legal requirement to offer first refusal on upcoming new positions has been implemented, case by case, and 2) on every instance of the resignation of a postdoc, with an anecdotal report in confidence of the reasons.

3.3.2 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 turnover of ERE staff, all grades, is shown by year in **Figure 3-7**. The fluctuations are large, and no clear gender-specific trend emerges.



Figure 3-7: Turnover of female (light) and male (dark) staff from 2008/9 to 2013/14, all grades. Staff turnover as percentage is shown by triangles (female), crosses (male).



Figure 3-8: Turnover of female (light) and male (dark) academic staff in 2013/14 by grade. Turnover as percentage is shown by triangles (female), crosses (male).

Figure 3-8 shows turnover of staff by grade for 2013/14. At Level 5 and above, turnover is low for both males and females, with no evidence of a gender bias.

Significant turnover occurs at Level 4, where, in P&A, staff are on fixed-term research contracts funded by external grants. It does appear, however, that the turnover for this group may be higher for women than for men (M/F level 4 turnovers over last 4 years: 44%/43%, 18%/33%, 43%/80%, 20%/22%). Although the University routinely offers an exit interview³ to a staff member who resigns, the take-up in this faculty is essentially zero, and only one instance from the past two years (not P&A) has been recorded. SAT members therefore believe that this group of staff should be included in the reporting process introduced by **AP 3.3.1-2**, so that we can start to acquire some insight into this phenomenon.

³ An opportunity to meet with their HR Manager to discuss their experiences of working for the University.

4 Supporting and advancing women's careers (maximum 5000 words: word count 5026)

4.1 Key career transition points

4.1.1 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.*

2011/12	Ар	plicatio	ons	Shortlisted			Offers			Appointed		
2011/12	М	F	% F	М	F	% F	М	F	% F	Μ	F	% F
Level 4	260	56	18%	60	20	25%	10	6	38%	2	0	0%
Level 5	9	4	31%	4	1	20%	1	0	0%	1	0	0%
Level 6	0	0		0	0		0	0		0	0	
Level 7	0	0		0	0		0	0		0	0	
2012/12	Ар	plicatio	ons	Sh	ortliste	ed	(Offers	5	A	opoin	ted
2012/15	М	F	% F	М	F	% F	М	F	% F	М	F	% F
Level 4	104	26	20%	27	5	16%	12	0	0%	3	0	0%
Level 5	302	46	13%	72	17	19%	10	2	17%	1	1	50%
Level 6	0	0		0	0		0	0		0	0	
Level 7	0	0		0	0		0	0		0	0	
2012/14	Ар	plicatio	ons	Shortlisted			Offers			Appointed		
2015/14	М	F	% F	М	F	% F	М	F	% F	М	F	% F
Level 4	483	90	16%	37	15	29%	11	1	8%	4	1	20%
Level 5	96	22	19%	10	2	17%	2	0	0%	1	0	0%
Level 6	0	0		0	0		0	0		0	0	
Level 7	0	0		0	0		0	0		0	0	

Table 4-1: ERE Job application numbers, shortlisting, & offers by gender, 2011/12 – 2013/14.

Table 4-1 lists job application data for advertised positions held by Faculty HR for the past three years. The numbers are limited to this period as the University only retains records since 2012.

An invaluable, if painful, outcome of the self-assessment process has been the demonstration that the HR appointment data recorded on their new system (Table 4-4) is internally inconsistent and incomplete. Since 2012, P&A has recruited 10 new ERE staff on the mixed research/education pathway (Level 5 or above), which includes 2 women, yet table 4-4 records only 3. In the same time period P&A has recruited 25 Research staff (i.e. Level 4), including only one female – HR data (table 4-4) shows only 8 (1 female). We know that the e-recruitment tool includes only advertised positions, and does not record targeted hires, or internal movements. This limitation, however, cannot account for the discrepancy. It is also true that the e-recruitment tool does not in every case capture informal offers that are routinely made prior to formal offers. If such informal offers are declined, their gender balance information can be lost. E.g. anecdotally we are aware that at least three Level 5 job offers were made to females in 2012/13, but HR only has a record of two of those. Two categories of action are therefore prompted by these findings; the first concerning basic record-keeping (**AP 4.1.1-1**):

Action Point 4.1.1-1: Faculty HR Manager to ensure that all recruitment decisions are accurately reflected in the recruitment system. From 2015 the instructions from HR to each appointment panel chair will include the requirement to report to the Head of P&A and the Chair of the WPC, with a gender breakdown of each stage (formal and informal) of the recruitment process.

The second category concerns active interventions to increase the number of women recruited. Even in the absence of accurate data it is clear that women are gravely under-represented amongst applicants and short-lists. We are not currently proactive in redressing this situation; hence **APs 4.1.1-2/3**:

Action Point 4.1.1-2: From 2015 the Chair of every appointment panel will be accountable to the Head of P&A for ensuring that at least 5 appointable women are personally contacted and urged to apply for each advertised vacancy in the department. This preparatory action will underpin a departmental target to achieve 25% female candidates on every shortlist.

Action Point 4.1.1-3: Ensure that job adverts are worded in a way to maximize engagement with women applicants via consultation with external consultant

A case study sheds some light on this. In a recent hiring process for two permanent positions here, we assembled a shortlist of 16 candidates, including 3 women. We made informal offers to two of those women, but both were turned down because of i) an alternative job offer in North America, and ii) difficulties in partner relocation. In the end, men were hired for both positions.

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

In the staff survey, 83% of women, and 59% of men agreed that they understood the P&A promotion process and criteria. 100% of females agreed that in P&A individuals have equal promotion opportunities irrespective of gender. Permanent academic staff applied for promotion on 14 occasions, 9 involved level $5 \rightarrow 6$, and 5 involved level $6 \rightarrow 7$ (personal chair). These were supported by P&A, and subsequently successful at Faculty/University level, and included two women; one promoted to Level 6, the other a personal chair.

The 100% success rate (of which we are proud) requires comment, not least because it precludes us from drawing any statistical inferences. Potential candidates identify themselves to our internal promotions panel once they believe, based on appraisals and other feedback, that they are likely to meet the university criteria. Heads of research groups are generally responsible for appraising group members via the PPDR process, and outline specific objectives (funding, high-impact publications, innovation in teaching, departmental responsibility, etc.) by which candidates can gauge their readiness for promotion. Good timing of promotion bids is vital – few experiences are more demotivating than rejection on this score.

The SAT must consider, however, what safeguards are in place to ensure that the largely invisible filtering process (at the PPDR stage) is fair, consistent, and sets the threshold for consideration correctly. The SAT chair is anecdotally aware of more than one instance, over a decade ago, where men were overlooked for promotion because they fell between the gaps of a poorly defined research group structure. Since then, three safeguards have been introduced: 1) details of timing, procedure and promotion criteria are circulated annually to all staff; 2) every staff member is assigned to a research group whose Head is a member of the P&A SMT, with clear lines of management; and 3) the Head of Department has a responsibility to prompt each research group head to consider all group members with appropriate care. We do not, however, currently implement any safeguard against unconscious bias, prompting **AP 4.1.2-1**:

Action Point 4.1.2-1: All members of P&A involved in staff appraisal and promotion, recruitment and selection to undergo mandatory 'Unconscious Bias' training

- 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.
 - **4.1.3** 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.

Vacancies are advertised widely and, in addition, academic staff use their professional/research networks to publicise vacancies to known candidates in their field. Job descriptions are drawn up based on University standard templates focusing on the job requirements and the qualifications, skills and experience being sought. Shortlists are compiled independently by the interview panel and marked against these criteria. The interview panel of at least two people (at Level 5 and above, it would be 4-5 people) should have gender balance, but this can be difficult to achieve given the low female staff proportion in P&A. Therefore, **AP 4.1.3-1**:

Action 4.1.3-1: Ensure a mixed gender interview panel (if necessary with staff from other departments or faculties, to avoid overload for female academics) for level 5+ appointments.

Improvements could be made to ensure that job adverts are worded and presented in such a way to encourage female applicants, e.g. by providing clear information about flexible working policies, (see **AP 4.1.1-3**).

Our staff survey highlighted that a high proportion of both male and female staff are not aware of the importance of understanding unconscious bias and promoting gender equality, with the majority of staff not having undertaken equality and diversity training at all. Therefore, AP 4.1.3-2 will ensure that all staff involved in the recruitment and selection process undertake mandatory unconscious bias training:

Action 4.1.3-2: All members of P&A involved in staff appraisal and promotion, recruitment and selection to undergo mandatory 'Unconscious Bias' training

4.1.4 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.

There exist several networking opportunities focused on issues related to women within the University: including 'WiSET' (to support female academics), Theano (bringing together women from all faculties/departments here) and the Parent and Carers Network. WiSET, launched in 2002, aims to support women in Science, Engineering, and Technology (SET) by shaping the University's policies and culture, and includes staff from across the University. WiSET has contributed to reviews of promotion processes, equality and diversity activities, training and development (including mentoring), as well as addressing life-work balance and carer responsibilities. Professor Kaczmarek from P&A is a member of the Steering Group.

The University provides a website <u>'working as a researcher'</u>⁴, which provides quick access to information and various forms of support, such as networks and guidance for carers, with sections dedicated to women researchers at all levels. Previous schemes included 'action learning sets' run by WiSET aimed at mentoring more senior female staff through career progression. However, anecdotally it is abundantly clear to us that very few members of staff are even aware of these resources, and we are unable to give detailed figures.

There is a similar story with regard to the University-provided career guidance for women via the <u>Springboard programme</u>⁵. This course has been available for the last three years and, across the University, is typically over-subscribed. However, there has been no recorded participation by P&A staff! We can only surmise that this is due either to insufficient awareness, or to a sense that a generic university activity may be of limited relevance. Therefore, **AP 4.1.4-1**:

Action 4.1.4-1: Ensure that all women on P&A staff receive personal invitations to participate in relevant career support activities.

The University's Professional Development Unit (PDU) offers >100 online and face-to-face courses covering areas such as grant writing, fellowship interview training, team management and teaching accreditations. Attendance is voluntary (and normally discussed through the annual PPDR).

⁴ http://www.southampton.ac.uk/waar/

⁵ https://www.southampton.ac.uk/pdu/Academic%20Practice/Springboard_for_Academic_Women.html

Figure 4-1 shows a rising trend of participation in these courses from both men and women, and the fraction of women (30-40%) is larger than the fraction of women ERE staff in P&A. However, anecdotally, we have heard that such training courses are considered of lower importance than more immediate research goals.



Figure 4-1: P&A participation in university development programs by gender: men (dark grey) and women (light grey), with the triangles showing the fraction of women participants.

4.2 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.
 - **4.2.1 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 has a standard, institution-wide approach to professional development via the Personal Performance and Development Review (PPDR) - the University's appraisal and personal development framework. The PPDR is designed as a structured dialogue conducted every year, usually by their line manager, although staff may ask for a different reviewer (e.g. Head of Department or other appropriate senior colleague), and is mandatory for all ERE staff. Of respondents to the staff survey, 82% of men and 83% of women said that they had been appraised within the past year.

The PPDR reviews staff achievements, research and teaching goals, career development plans, professional development/training needs and other contributions to P&A, the Faculty and the University. The PPDRs also form the basis of cases for promotion, which is routinely discussed during the PPDR as described earlier.

The University has recently (2014) reviewed and revised its promotion processes. ERE staff seeking promotion may apply on an annual cycle on the basis of research, teaching, or a combination of both, following different career pathways (Figure 3-4). Research-led promotions look at publications, grant awards, supervision of research fellows and PGRs, and national and international esteem, including outreach. Teaching-led promotions look for innovation in teaching methods and development, and leadership of the curriculum. The promotion process takes account of career breaks.

The PPDR process was considered useful by our survey respondents (supported by 85% men, and 100% women); this is consistent with more anecdotal feedback. However, the survey also indicated that the new promotion process is not well understood, with only 70% (59% men, 83% female) indicating they understood it, and more alarmingly some 50% of females indicating that P&A did not value or utilise their full range of skills and experience in considering promotions. The SAT is inclined to link this finding to the further observations that only 33% of female respondents (but 71% of males) agreed with the statement that P&A provided them with useful mentoring opportunities, and that only 20% of females (35% of males) agreed that they were provided with useful career guidance.

4.2.1 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?

Each new academic staff member (level 5) is assigned a mentor, and their teaching load is typically reduced to 50% in the first year, allowing extra time to build up their research. Each group prioritises new staff in the allocation of PGR studentships. All academics can access support for writing grant applications from the Research and Innovation Service.

Local induction is provided by the line manager, professional service specialists (e.g. H&S), and technical and experimental officers, depending on the role. Each new staff member receives an induction pack, which describes flexible working, anti-bullying and career-break policies, and introduces the online induction portal, with information about settling into a new job and possibly a new country/environment. Staff can also attend University induction events, which promote the recently introduced diversity e-learning programme1, as well as other courses provided by the Professional Development Unit. P&A organises local H&S training events that are mandatory for new staff. In principle, annual probation review meetings identify training needs, and these are noted in the probation review paperwork, with a record of courses taken. Anecdotally it seems as if this system may not have survived the transition to the new structures fully intact. We omitted to include a question about induction in the staff survey (which will be rectified via **AP 2-2**).

Action Point 4.2.1-1: SAT to establish how well induction procedures are currently embedded in P&A and correct as required.

4.2.2 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.

One of the most valuable outcomes of this self-assessment process is that it has made us aware that, of all the support provided for UG and PGR students, none is specific to women.

All 1st year UGs are randomly assigned a Personal Tutor (by the Faculty Office), who meets them in their tutor group during induction week. The Physics Society (Physoc) run a long established 'parenting' scheme: on first arriving in P&A as a fresher, a physics student is met by their parent, a higher year UG student who provides care and advice. We have heard strong UG focus group testimony of the particular value of this scheme to women: *"I had a physics mother, obviously... that parenting scheme: that* **works**. *I speak to her about... which module should I take... what did you do here... have you got any advice for this..."* Nevertheless, there is no specific structure in place to offset the laddishness of a predominantly male environment. *"Most of my friends in physics are boys. I mean, the sort of banter... I like to feel I can give as good as I get."* And then, prompting us straight towards **AP 4.2.2-3** described below, *"I know there is the whole Physoc... lots of socials, where everyone goes out together. But it would be* **great** *if there was a couple of girls' physics socials, where everybody gets a chance to talk, make friends – build a network."*

While this student-led support is admirable, we are aware that there are no formal P&A-led mentoring schemes; nor is there any mechanism for female UGs to request female personal tutors.

The environment in which a PGR operates is strongly conditioned by the character of their immediate research group. The graduate school assigns a primary and secondary supervisor to every PGR, and takes responsibility for making them aware of their training commitments and award milestones, and also of the enabling services to which they have access, such as the free University-run counselling service, available to all. In addition to their supervisor(s), PGRs are given additional access to pastoral care through the postgraduate tutor, a senior staff member, who can offer support/advice independently of the supervisors. PGRs can also participate in career-focused University courses, which range from necessary skills such as academic writing to multiple-day training in public engagement at a local school.

A valuable route from PGR to Level 4 is provided by the EPSRC Doctoral Prize Fund, which offers 1year fellowship support post-PhD to the best EPSRC-funded PGRs, awarded through an annual University-wide competition. In the two most recent competitions P&A has won 2 doctoral prize PGRs; 1 male (in 2013), who has since secured further funding, and 1 female (in 2014). Action Point 4.2.2-1: Implement changes to the UG tutor allocation system: provision for women UG entrants to express wish for female tutor

Action Point 4.2.2-2: Cluster women UGs in tutor groups, so any women in a tutor group represent at least 1/3 of the group

Action Point 4.2.2-3: Appoint facilitator tasked to draw together a women's physics network in P&A, of which every woman student and staff member is automatically a member. Initial target of two informal social gatherings each term

4.3 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.
 - **4.3.1 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 P&A Senior Management Team (SMT) described previously in our pen picture currently has 6 men and 1 woman: the woman being the Head of QLM. Prof Malgosia Kaczmarek was appointed to this role last summer, when the previous (male) head completed his 3-year term. Prof Kaczmarek was identified by an internal group consultation process as the consensus candidate for this role.

The P&A WPC/SAT has also been described earlier. All other committees exist at Faculty level, with the Dean responsible for membership. All Faculty staff from the three departments are invited to a termly Faculty Forum, which in principle publicizes our operating structures, processes and issues. A telling comment that arose from our discussion of this issue reads was: *"Despite being here for 11 years, I don't know how the department, or the faculty, is structured. I don't know what committees run what – or what they do, or who's on them or where to find that information out on-line."* We can see, indeed, no reason why P&A staff should have to struggle with a poorly structured University/Faculty intranet to find this basic information. We need a comprehensible organogram for P&A on our intranet (**AP 4.3.1-1**):

Action Point 4.3.1-1: Include clear management information on the P&A intranet

4.3.2 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.

In P&A, as noted previously, our fixed-term research staff are at Level 4, and our permanent academic staff are at Level 5 and above. The imbalance in representation and actions arising are discussed in Sections 4.1.1 and 4.1.3.

- 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.
 - **4.3.3** 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 SAT chair freely confesses that she advises early-career scientists of either gender to prioritise committee work outside their own institution, and go for every opportunity to raise their visibility in the wider community. P&A has provided female members of Research Council funding panels and colleges; of international conference programme committees; of the Royal Society University Research Fellowship panels; and a female chair of the Standing Conference of Physics Professors (IoP). In 2013, Prof Tropper was elected to a 3-year term as Director-at-Large on the Board of the Optical Society of America.

The committee overload experienced by women in physics can be savage, and becomes worse in a department trying hard to widen participation, wishing to have female staff participating in all UCAS days, PGR recruitment, outreach, appointment panels, promotion panels, WISET, Theano, and mentoring of women students and staff. We are not aware of any simple action with which to address this in the short term. The women involved must be able to say 'no'; the department must be content sometimes to have women present as PowerPoint images and not in person; and administrators must draw on networks of females outside the faculty so as to spread the load.

4.3.4 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 P&A workload model is based on teaching and administrative load (including recruitment). Every task is assigned an expected number of hours for carrying it out, many of which (especially teaching) are based on formulae that take into account of student numbers, type and number of assessments associated with particular modules, etc.. Every staff member receives a detailed breakdown of their allocated tasks and loads for each academic year. They also receive information about the average load (across all staff) and their under- or overload relative to this. A strong effort is made to ensure that load is balanced fairly across all staff members, considering cumulative over-

or under-load, rather than just the load in any given year. 83% of women and 88% of men who responded to the staff survey agreed that work is allocated fairly and in a transparent way irrespective of gender.

Each staff member will typically supervise one or two groups of 4-5 UGs, as well as one or two PGRs.

4.3.5 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.

P&A has no formal concept of 'core hours'. However, most seminar series and internal meetings are scheduled between 9.30am-4pm. e.g. the main physics research colloquium is every Friday at 2.30pm, and most group seminars are held between 10am-4pm. An exception is the Astro seminars, which begin at 4pm. This late time can generate problems for group members with childcare responsibilities, and anecdotally they tend not to attend these seminars. Thus an action point (**AP 4.3.5**) is that regular group and departmental seminars and meetings should be restricted to core hours:

Action 4.3.5-1: Establish 'core hours' for departmental seminars and meetings, defined to be 10:00 am to 3:30 pm. Introduce departmental policy that such events should not routinely be scheduled to begin outside these hours.

Most staff social events are also run during these hours. e.g. Astro staff have pub lunches on Fridays to which both male and female staff go; University and Faculty Summer parties end at 4pm. Events run outside these hours tend to be one-off or annual social events (e.g. Technicians BBQ, Skittles evening), scheduled months in advance – which are very popular.

4.3.6 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.

Both our survey data, and anecdotal experience, provide evidence that P&A has an inclusive culture. In our survey, 100% women and 94% men agreed that 'My department uses women as well as men as visible role models': female PGRs and staff are visible in our careers/marketing posters shown around the department, and female UGs act as role models on Open Days and at Outreach events. There is an annual university-wide prestigious lecture celebrating the success of women in STEM (the Campbell Lecture1) that highlights the work of high-quality women scientists, both internationally and at Southampton, and at all career stages.

Our survey reports that 83% women and 82% men agreed that 'unsupportive language and behaviour are not acceptable in the department'. 82% men and 67% women agreed that 'inappropriate images that stereotype women or men are unacceptable'. In response to the comment 'In [P&A], individuals have equal opportunities irrespective of... their gender', 100% females and 88% males agreed (12% males 'did not know').

To our knowledge, there has been one sexual harassment complaint in the last two years that was extensively investigated, included legal services, and was resolved. The circumstances were unusual, so no changes in general procedures were made.

Comments in the survey, and discussions with colleagues, suggest the general belief that rules on sexism and discrimination exist somewhere – but staff did not know where. Other comments include: 'Policies on unsupportive language etc. most likely exist, however I have never seen them. Though this is probably because most staff members (as far as I am aware) are able to conduct themselves in a sufficiently professional manner and do not require explanation of what is acceptable behaviour.'

Nonetheless, the discrimination policies should be more widely available (AP 4.3.6-1).

Action 4.3.6-1: Discrimination policies should be made available on the P&A intranet, and should also be included in induction packs

The ratio of male to female speakers at our weekly colloquia is approximately 10:1, with 6 female speakers out of 61 in the last three years. The organiser notes that, anecdotally, females are less likely to respond to emailed speaking requests.

Two questionnaire respondents claimed that there is an adversarial culture within the University management system, but not within P&A. *"The hostile and aggressive management culture of the Faculty is antagonistic to diversity. Senior Leadership is lacking where units within the faculty clearly suppress diversity, and this raises no concerns at [University] Level." "Physics is staffed by decent people who do not behave unpleasantly. In my experience problems arise in the interaction with senior management outside the department."*

4.3.7 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.

P&A have a dedicated team of two full-time female staff members running an outreach programme, which works with an annual average of 18,000 pupils, college students and members of the general public. Activities include Open Days, UCAS Visit Days, Speakers in Schools talks, hands-on workshops, Astrodome and Laser Light Show talks and demonstrations and work with teachers, trainee teachers and parents. Audiences range from primary school pupils, to college students, to the general public and special interest groups (e.g., amateur astronomy groups).

23% of schools participating in our Outreach activities last year can be described as 'widening participation schools' with an above-average percentage of students receiving free school meals or who are girls-only schools. We contribute Outreach activities for female-only 'Dragonfly' and 'Inspire' outreach events for the WP Outreach and Recruitment team. We work closely with a local girls school (St. Anne's), e.g. promoting their 'Science Girls App' at a stand at our Stargazing Live event. We have provided holography demonstrations/talks to three WI/Science Groups, and we are committed to working closely with the WI as part of a University-wide agreement.

Working in conjunction with our local Wessex 6th Form Physics Teachers Network, we have provided female UGs to act as role models providing information on careers in Physics at college Open Evenings – to try to encourage more female students to study Physics at AS/A Level. We ran a 'Celebrating Women in Astronomy' event linked to International Women's Day during National Astronomy week. Two female academics gave talks and Prof Malcolm Coe referenced female astronomers who had influenced his research. 300 members of the public took part in hands-on workshops and roof observatory tours.

The outreach work is led by the two (female) professional outreach workers, assisted by PGRs and UGs, where care is taken to ensure a 50-50 gender balance. Sixth form outreach by academic staff (other than in astronomy) tends to be done by male academics – to a mostly male audience.

Outreach activities can be reported in the PPDR in the 'achievements' column (which feeds into promotion); however, generally PPDR appraisers do not ask specifically about outreach if a member of staff does not bring it up themselves. Further, such work is not a formal part of the department workload model (Section 4.3.4), hence **AP 4.3.7-1**:

Action 4.3.7-1: Include outreach activities in the departmental workload model

4.4 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.
 - **4.4.1 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.

Since October 2008, one member of the permanent academic staff (Level 5) has taken maternity leave. She subsequently returned to work part-time (25% and later 75%), working mainly from her family home at some distance from Southampton, and visiting us fortnightly. Although happy with her treatment during and after her maternity leave, she has recently "come to the conclusion that there isn't a practical way for me to return to teaching and a full-time role". She will continue as a part-time researcher in the department, and take up a part-time administrative post closer to home.

Profound concerns were raised by the focus group of Level 4 staff on fixed term contracts. These women suspected that their job prospects everywhere would be damaged if they had children. They experienced internationally competitive research, at this stage of their career, as an all-consuming commitment that barely left space for any life outside work. They felt that fixed-term contracts of less than 3 years duration (the norm is 2, limited by funding) did not provide sufficient stability to contemplate pregnancy. Four staff at Level 4 have taken maternity leave since October 2008, all on fixed term contracts which expired during their leave, or shortly after their return.

The University offers all women, whether on fixed-term or permanent contracts, additional maternity provision beyond what is statutorily required. For the first 26 weeks of leave the University will give full contractual pay (CMP), and statutory maternity pay (SMP) thereafter, provided that the woman has been employed for 52 weeks prior to the qualifying week. There is a terrible pitfall, however, for a woman on a fixed-term contract. In order to qualify for CMP she is required to return to work for at least 52 weeks AFTER the leave period, failing which she must repay the difference between CMP and SMP. This is potentially disastrous for a woman on a fixed-term contract if the contract expires and no further job arises at the University within 52 weeks. The University does indeed make "every effort to re-deploy the individual to another funded position within the Group or Department such as a Research Fellow position on another grant or a Teaching Fellow role if available", but in the small and highly specialised research groups of P&A, such re-deployment is relatively unlikely.

On contracts funded by RCUK, it is possible to extend the grant by up to 12 months to cover maternity leave, although cash limits remain in place. For contracts funded by the EU, however, such as the Level 4 posts attached to a European Research Council Fellowship, no such provision exists.

We note with great interest that the University has committed to investigate the development of central policy for funding Principal Investigators with long-term leavers; that a policy has been developed and implemented, and that an evaluation has demonstrated increased uptake & reduction of disruption to research⁶. P&A is eager to learn about this policy, and discover whether our faculty, FPSE, participates in it. In our view, such a policy might take the valuable form of the creation of a general University fund to cover CMP for all employees on fixed-term contracts, hence **AP 4.4.1-1**:

Action Point 4.4.1-1: Head of P&A to explore, with the FPSE Dean in the first instance, the issue of CMP for fixed-term contract staff

PGRs in receipt of a UKRC stipend are entitled to a six-month suspension of their PhD for maternity leave, and receive maternity pay (at the normal stipend rates) during this period. Studentships funded by the University, however, out of Faculty funds, do NOT provide maternity pay: this is currently official University policy. We are mounting a challenge to this discriminatory practice, with the support of the Dean of FPSE (**AP 4.4.1-2**):

Action Point 4.4.1-2: Formal request from Head of P&A via Dean of FPSE and the Chair of the University Diversity Committee to the University Executive Group: change University policy so as to fund maternity cover for internally-resourced PGR studentships

⁶ Action point 4.2, University Action Plan, bronze renewal 2012

4.4.2 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.

Five staff have taken statutory paternity leave since October 2008. None have taken the option of extending their leave unpaid. Adoption leave has the same provisions as maternity/paternity leave; parental leave is unpaid and there have been no formal requests for adoption or parental leave. Parents sometimes bring their children into work if no home care can be arranged, or work at home, but this is managed informally.

We note that the issue highlighted for Level 4 maternity provision (**AP 4.4.1-1**) also potentially penalises fathers because, apart from the two weeks directly after birth, the father can only take leave once the mother has completed her full entitlement for maternity. A woman may therefore be prevented from an early return even if her partner wishes to take leave. In a recent case study of a couple in P&A, both on Level 4 contracts, this dilemma was resolved by the father transferring to a 50% part-time contract – an option which was only available because he happened to be an EU-funded Fellow.

4.4.3 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.

Flexible working is common in P&A, with many staff and students working their hours at preferred times and/or working at home when attendance is not required. There have been numerous instances of people using informal flexible working arrangements to help with caring for aged relatives, and line managers are supportive of caring requirements. In the staff survey, no respondents disagreed with the statement that their line manager was supportive of requests for flexible working. However, since flexible working is managed informally, it is not currently tracked. P&A will devise a method of collating evidence of flexible working practices and any real or perceived problems encountered by staff and students (**AP 4.4.3-1**):

Action Point 4.4.3-1: Ensure accurate recording of flexible working requests

- 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.
 - **4.4.4** 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.

The annual proportion of staff working part-time has varied between about 3% and 15% since October 2008, with no regular trends. There are currently 3 male and 3 female part-time staff at levels 2a, 4, 5 and 7, including senior staff benefitting from flexi-retirement deals. 6 male and 3 female members of staff (levels 4, 5 and 7) have reduced their working hours since October 2008,

with the numbers spread evenly across the years. 4 men and 1 woman (levels 4, 5 and 7) have increased their hours.

4.4.5 Cover for maternity and adoption leave and support on return

(i) 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 'Early Years Centre' on the Highfield campus caters for children from four months to school age, and is open 8am-6pm every day that the University is open. The rates are competitive with private nurseries, and the childcare voucher scheme is accepted; however the University does not run a 'work-place' nursery scheme that would benefit from the HMRC Workplace Nurseries' Salary Exchange Scheme. It is unclear to the SAT why this is the case, as many other universities do run such a scheme. This makes returning to work more expensive and will clearly discourage some parents, leading to **AP 4.4.5-1**:

Action 4.4.5-1: Investigate why the University does not support the work-place nursery salary-sacrifice scheme

Parents (both male and female) sometimes bring their babies into the workplace. Currently there are no rooms suitable for nappy-changing, and breast-feeding is done in the offices. It is clear that if facilities were available, it would make returning from maternity leave easier, hence **AP 4.4.5-2**:

Action 4.4.5-2: Provide nappy-changing, bottle-warming and breast-feeding area in P&A

Finally, there are no special arrangements for car parking for those with very young children. By the time children have been dropped at school, there is usually little car parking available near to P&A. Furthermore, if parents of very young children need to bring their children to P&A for, e.g., breast-feeding, there is no car parking available to facilitate this. Thus we have **AP 4.4.5-3**:

Action 4.4.5-3: Request to University via Faculty for provision of reserved car parking spaces for parents of very young children

5 Any other comments (maximum 500 words: word count 351)

Please comment here on any other elements which are relevant to the application, e.g. other SETspecific 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.

• The SAT notes with great pride that in 2012 P&A academic Dr Anna Scaife was awarded an EU €2M grant from the European Research Council to fund her work in developing new

techniques for detecting and measuring magnetic fields in clusters of galaxies and the cosmic web using radio astronomy. This fine personal achievement was recognised and promoted by the Faculty at the FPSE Dean's Awards for Early Career Researchers reception event on 18 June 2013.

- P&A UG Emma Tattershall completed an 8-week Space Internship Network (SpIN) student placement over the summer. This month she attended the SpIN Showcase at the Royal Society, and was been awarded one of four SpIN Prizes for 2014 students.
- 2 P&A research students have won medals at the Set for Britain poster competition held at the House of Commons each year; both are women, and both hold awards in the Biological and Biomedical Sciences division, reflecting the interdisciplinary character of QLM research. Amelie Heuer Jungemann came 2nd out of 180 short-listed candidates this year, winning a silver medal. Dorota Bartzack came first in this section and won a gold medal in 2010.
- At a meeting in early October, the SAT heard with surprise and dismay that a universityprovided laboratory-demonstrator training session had promoted gendered stereotypes, and given considerable offence to P&A research students of both genders. P&A made a formal complaint to the Faculty, and received a prompt and sympathetic hearing from the Dean, leading to a discussion between members of the SAT and the professional service involved. An apology was made by the professional service to the participating students. We shall in future scrutinize in detail, in advance, the content and ethos of all such courses provided to P&A members.
- 100% of the female respondents to the staff survey agreed with the statement "I feel that my Department is a great place to work... for women", and 100% of male respondents similarly concurred that it was a great place to work... for men. 100% of women and 94% of men agreed that "I feel happy and well-supported in my current role."

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.

6 Action Plan

Accountabilities for leading on action points (APs) in the action plan have been allocated to one or more individuals from the SAT. Responsibilities for APs sometimes lie with University staff not on the SAT. The following initials are used:

PC	Phil Charles (or Head of P&A)
AT	Anne Tropper
MS	Mark Sullivan
DS	David Smith
VA	Vasilis Apostolopoulos
JF	Jonathan Flynn (P&A admissions marketing)
WS	Wendy Slack
MH	Matt Himsworth
AL	Angela Loines
ТВ	Tony Bird (P&A Director of Programmes)
CS	Catherine Struggles

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure							
	2: The self-assessment process													
2-1 p.5	Institute annual P&A lunchtime 'Diversity Forum' meeting for all staff	Staff meeting on 'Unconscious Bias' held on 30/10/14	Develop specific content for October 2015 meeting	AT	PC	11 months	Oct 2015: P&A lunchtime forum on Diversity. Annual forums to follow							
2-2 p.5	Institute annual staff survey assessing culture and diversity in P&A for review by SAT	First 'culture survey' run for this application	Review (by SAT) of questions asked and topics covered	МН	МН	Review of survey questions by SAT in Spring 2015. Survey re-run in Sep 2015	Survey run Sep 2015 and then annually							
			3: A picture of	of the department	t									
3.2.1-1 p.7	Improve future effectiveness of FY for widening participation in Physics degree courses	Current website information reviewed	Approach the current 'owners' of the FY in engineering about marketing this route more effectively to physicists, with revision of the marketing materials.	DS	JF / AL	11 months; for 2016/17 entry	Revised P&A website for FY live for 2016/17 entry							
3.2.4-1 p.9	Raise profile of PG research amongst our women UGs via annual targeted event		Run and evaluate a pilot event for Southampton women UGs informing about research degrees and careers in P&A.	VA	Research group heads supported by careers service	First event in Nov 2015	Aim for attendance by 15% of target audience. Collect feedback from participants on quality of event & use to inform plans for repeat occurrence.							

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure
3.2.5-1 p.10	Review materials and processes used in UG recruitment, taking measures to improve female UG experience	Secured services of an external consultant	Consultant will review materials and processes used in UG recruitment New measures will be featured in recruitment process	DS DS	External consultant DS	Dec 2014 – Jan 2015 Nov 2015	Revised recruitment material/processes available Summer 2015 Evidence of progress towards our 5-year target for number of women undergraduates
3.3.1-1 p.14	Provide annual female-only physics-specific workshops on planning a research career, applying for fellowships, and building a competitive publications track record		Secure consultant, agree content, alert target audience, determine date.	AT	External consultant	First event in March 2015; thereafter 12 – 18 month intervals.	Positive evaluation by participants via feedback forms. Success measure: Increased P&A fellowship applications & job offers.
3.3.1-2 p.14	Require the Principal Investigator & HR to report briefly to the SAT 1) on every instance of the termination of a grant employing one or more postdocs (either gender), explaining how the legal requirement to offer first refusal on upcoming new positions has been implemented, case by case, and 2) on every instance of the resignation of a postdoc, with an anecdotal report in confidence of the reasons.		Design reporting format and process	AT	CS / PC	First reports to SAT in Nov 2015	SAT enabled to evaluate fairness of 'first refusal' process. SAT enabled to estimate the potential value /cost of any bridge funding scheme at Faculty level.

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure		
4: Supporting and advancing women's careers									
4.1.1-1 p.17	Faculty HR Manager to ensure that all recruitment decisions are accurately reflected in the recruitment system. From 2015 the instructions from HR to each appointment panel chair will include the requirement to report to the Head of P&A and the Chair of the WPC, with a gender breakdown of each stage (formal and informal) of the recruitment process.		Agree new instructions from HR to appointment panel chairs. Require chairs to report to the Head of P&A and chair of SAT. Gender breakdown of each stage in recruitment process	PC	CS / Panel chairs	Process in place for Oct 2015. SAT to evaluate data annually starting November 2015	SAT enabled to track fairness of recruitment over long term, assess impact of diversity/unconscious bias training of staff		
4.1.1-2 p.17	From 2015 the Chair of every appointment panel will be accountable to the Head of P&A for ensuring that at least 5 appointable women are personally contacted and urged to apply for each advertised vacancy in the department. This preparatory action will underpin a departmental target to achieve 25% female candidates on every shortlist.		Revised guidance developed by HR, and when agreed by SAT issued to all panel chairs	PC	CS / Panel chairs	SAT agree guidance by Summer 2015. Process in place for Oct 2015. SAT to evaluate data annually starting Nov 2015	Increased fraction of women on shortlists working towards 25% by Autumn 2016		

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure
4.1.1-3 p.17	Ensure that job adverts are worded in a way to maximize engagement with women applicants via consultation with external consultant.		Secure external consultant	AT	External consultant		Increased fraction of women on shortlists working towards 25% by Autumn 2016
4.1.2-1 & 4.1.3-2 p.18, 18	All members of P&A involved in staff appraisal and promotion, recruitment and selection to undergo mandatory 'Unconscious Bias' training	Taster session for all staff with external consultant, 30/10/14	Secure external consultant - schedule training sessions over 2 years	AT	External consultant	All relevant staff trained by November 2016	Assess via annual staff survey
4.1.3-1 p.18	Ensure a mixed gender interview panel (if necessary with staff from other departments or faculties, to avoid overload for female academics) for level 5+ appointments.	Agreement of Head of P&A and HR secured	SAT will monitor panel compositions annually	PC	PC / CS	With immediate effect	By Oct 2015, all level 5+ appointment panels will be mixed gender
4.1.4-1 p.19	Ensure that all women on P&A staff receive personal invitations to participate in relevant career support activities		Compilation and review of all PDU and University level activities	MH	MH / CF	Review complete by Feb 2015. First invitations sent Spring 2015 from P&A office	Invitations sent Spring 2015. Improved uptake by P&A women in PDU courses, e.g. Springboard. Assess awareness and usefulness via annual staff survey
4.2.1-1 p.22	SAT to establish how well induction procedures are currently embedded in P&A and correct as required		Review of all P&A induction material (also AP 4.3.6-1)	CS	CS	Review complete by Summer 2015. Revised material included for Oct 2015 starters	Revised material included Oct 2015 Assess via annual staff survey

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure
4.2.2-1 p.23	Implement changes to the UG tutor allocation system: provision for women UG entrants to express wish for female tutor		SAT will liaise with Registry to obtain tutor gender preference information	PC	WS	Procedure in place for 2016/17 UG entrants	System exists in time for 2016/17 entry
4.2.2-2 p.23	Cluster women UGs in tutor groups, so any women in a tutor group represent at least 1/3 of the group		SAT and faculty office to liaise to achieve women representation	PC	WS	Procedure in place for 2015/16 entry	System operating by Sep 2015
4.2.2-3 p.23	Appoint facilitator tasked to draw together a women's physics network in P&A, of which every woman student and staff member is automatically a member. Initial target of two informal social gatherings each term	First meeting scheduled for 3 rd Dec 2014; invitations issued shortly	Assemble organising committee of UGs, PGRs and staff	AT	AT	Network exists by Summer term 2015	Initial target: two informal social gatherings per term
4.3.1-1 p.23	Include clear P&A management information on the PA& intranet		SAT will liaise with Faculty Office to ensure information is available	PC	Faculty Office	Summer 2015	Information available by Sep 2015
4.3.5-1 p.25	Establish 'core hours' for departmental seminars and meetings, defined to be 10:00 am to 3:30 pm. Introduce departmental policy that such events should not routinely be scheduled to begin outside these hours.	Initial agreement of definition to be 10:00 am to 3:30 pm	Draft and introduce P&A policy that such events should not routinely be scheduled to begin outside these hours.	PC	PC	Policy in place for Oct 2015	No such events scheduled outside of core hours by Oct 2015

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure
4.3.6-1 p.26	Discrimination policies should be made available on the P&A intranet and should also be included in induction packs.		SAT will liaise with Faculty Office to ensure information in available. AP 4.2.1-1 will include discrimination policies	CS	Faculty Office / CS	Summer 2015	Information online and in induction packs by Oct 2015
4.3.7-1 p.27	Include outreach activities in the departmental workload model		Mechanism for including outreach in workload model agreed by SAT liaising with P&A Director of Programmes	PC	ТВ	Summer 2015	Outreach included in 2015/16 workload model
4.4.1-1 p.28	Head of P&A to explore, with the FPSE Dean in the first instance, the issue of CMP for fixed-term contract staff.		Meeting between PC and FPSE Dean	PC	PC	By Summer 2015	Meeting with FPSE Dean to discuss path forwards
4.4.1-2 p.28	Formal request from Head of P&A via Dean of FPSE and the Chair of the University Diversity Committee to the University Executive Group: change University policy so as to fund maternity cover for internally-resourced PGR studentships	Discussion at, and support from, University Diversity Committee	Request to University Executive Group	PC	PC	Ongoing	Change in University maternity policy for internally funded PGRs

АР	Description of Action	Action already taken at November 2014	Further action planned	Accountability (SAT member)	Responsibility	Time-scale	Success Measure
4.4.3-1 p.29	Ensure accurate recording of flexible working requests		SAT to liaise with HR to set-up recording process via line managers	AT	CS / line managers	By Oct 2015	Procedure in place by Oct 2015
4.4.5-1 p.30	Investigate why the University does not support the work- place nursery salary-sacrifice scheme		HR to investigate via Finance	AT	CS	Ongoing	Report to SAT in mid-2015
4.4.5-2 p.30	Provide nappy-changing, bottle-warming and breast- feeding area in P&A		Identify possible space in conjunction with Building Manager	PC	PC / P&A Building Manager	Identify and prepare room during 2015	Room/facilities available from 2016
4.4.5-3 p.30	Request to University via Faculty for provision of reserved car parking spaces for parents of very young children		Request via Faculty to University Diversity Committee	PC	PC	Ongoing	Report to SAT in mid-2015