

Juno Champion Application / Athena SWAN Silver conversion

School of Physics, Astronomy and Mathematics, University of Hertfordshire

April 2019

The School of Physics, Astronomy and Mathematics (PAM) declared itself a Juno Supporter in March 2013, and was awarded Practitioner status in January 2015, which was renewed in January 2018. We also gained an Athena SWAN Departmental Bronze Award in April 2015. We welcomed a mid-Practitioner visit on 13 March 2018, and the site visit was invaluable in helping crystallise our discussion in order to put together a revised (and much stronger) action plan to feed into our Athena SWAN Silver departmental award that was submitted in April 2018. We were informed of our success in Athena SWAN Silver departmental award in November 2018. We are now seeking to use our 2018 Athena SWAN Silver departmental award to ‘fast track’ a Juno Champion application. Upon enquiry with the IOP Juno team, we were advised we could submit a Champion application as follows (in view of the subject makeup of the School):

- A letter from the Head of Department making the commitment to the Juno principles;
- The Athena SWAN Silver paperwork and action plan, with annotations to demonstrate how the action plan links to the Juno principles;
- Data disaggregated for Physics/Astrophysics (appended at the end of this document);
- A supplementary document giving detailed commentary against each of Juno’s six principles with respect to Physics/Astrophysics (guideline 1-2 pages each) (included in this document)

The period since the Practitioner renewal has seen further embedding and maturation of the Juno principles within PAM. Particular effort has been put into addressing Juno Principle 6 in the past couple of years. Overall, we feel that we have made good progress in embedding the 6 Principles, which was commented on at the mid-Practitioner visit. Although some of our new action plan items from our 2018 Athena SWAN Silver award have already been implemented, insufficient time has elapsed since then (a few months to a year) to be able to robustly quantify the effectiveness of some of these. Therefore, we refrain from commenting on their impact unless it is already evidenced in some way.

In this supplementary document we elaborate on how we are addressing each Juno principle with actions specific to Physics/Astrophysics (P&A), while the Athena SWAN Silver application provides a narrative around our broader gender equality work in the School (which also applies to P&A). As explained in our original Juno Practitioner application, PAM operates with an integrated academic identity, i.e. there is no distinct ‘Physics Department,’ and School staff often teach on both the Physics and Mathematics programmes. So, while we can easily disaggregate undergraduate students into these two programmes (P&A and Maths) — and we have performed this disaggregation (see p.23-25 in this document), since in our Athena SWAN Silver submission Tables 1, 6, 7 and 8 will also include maths students — we make no attempt to disaggregate staff as physicist/non-physicist, as this distinction would be arbitrary and masks the great benefits that arise from our integrated identity. Moreover, our integrated identity aligns exceptionally well with Juno Principles 4 and 5, which is to establish a departmental structure and culture that are inclusive and encourage the participation of all staff, and to adopt flexible approaches that enable individuals to optimise their contribution to their department. We argue that it would be counterproductive to split off academic members of our School community as ‘not-one-of-us’ for the purposes of this application. Note that all postgraduate students (PGR) in PAM are either Astrophysics or Physics, so no further disaggregation of that group is required either.

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Major developments since the award of Practitioner renewal status in 2018

We set out some of the major activities and developments here since our Juno Practitioner renewal and our Athena SWAN Silver submission:

- Implementation of a new School policy that all staff recruitment panels must have at least a 40% female fraction (or a minimum of 2 females), with a front-loaded workload adjustment to compensate for the resulting extra burden on female staff (effective from March 2018, but ongoing);
- A major update to our School webpages to include images of our own students and highlighting our diverse student and staff populations, with particular attention to the representation of female and BAME students (August 2018);
- The expansion of our School Equality Champion roles in September 2019: including 1 male and 1 female PAM Equality Champion, a new BAME champion and a new LGBT+ champion (half of these posts are held by Physicists/Astronomers and also half are female);
- A major overhaul and update of the public-facing PAM Equality pages and of our internal PAM Handbook 'wiki' with all local policies and procedures (family friendly and our terms of reference), with specific reference to not just our gender equality work, but to the PAM LGBT+ community explicitly (January 2019);
- The adoption of a formal workload tapering policy for research-active PAM staff post-career break (January 2019);
- Conducted our biennial PAM Staff Equality Survey (February 2019), which we have used in the supplementary document provided here to support our impact case;
- The adoption of an out-of-hours email policy in PAM, implemented and communicated to staff (March 2019);
- Held a PAM Athena SWAN Silver success celebration event in conjunction with International Women's Day (March 2019);
- Conducted a PAM-wide (all staff and students) bullying and harassment survey (January 2019), followed up by an informative campaign including a mandatory bespoke bullying and harassment awareness training session for all PAM staff and PGR students, with all PAM undergraduates also invited (March 2019);
- We report on a 30% female intake this year for our P&A undergraduate programme (2018/2019), up from 22% in 2017/2018.

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Supplementary information with detailed commentary against each of the six Juno principles with respect to physics/astrophysics, to be read in conjunction with our Athena SWAN Silver paperwork & Action Plan

Juno Principle 1: A robust organisational framework to deliver equality of opportunity and reward

1.1 Establish organisational framework

The enlarged (20+ member) Equality Committee (EC) continues to meet several (typically four) times per year and operates on an agreed terms of reference. The EC now oversees and leads a wider range of activities, such as organising and promoting relevant Equality and Diversity (E&D) training and events¹ within the School and engaging with external Juno-related workshops² to promote women in physics and to monitor equality and lead the debate in the School on E&D issues. The EC Chair reports on equality matters to the School quarterly via a standing item on the School staff meeting agenda, at the annual autumn Staff Development (“Away”) Day, as well as formal membership of the School Executive Group (SEG) and the Learning & Teaching (L&T) Committee, where key policy changes are debated and formulated.

1.1.1 Evidence of senior management commitment

The EC is chaired by a senior female academic (Reader in Astrophysics), and the membership includes the current Dean of School (DoS), the former Dean of School, an associate Dean, the former EC Chair, and the director of the School’s largest research centre (Centre for Astrophysics Research; CAR). Four of these senior staff are physics or astrophysics researchers. Five of these have caring responsibilities for school-age children, and two are also members of the University’s Athena SWAN Self-Assessment Team (SAT). The Chair, along with the Dean, associate Dean, and the Director of CAR, are members of SEG, and provide four direct linkages between the SEG and the EC. As an example of recent senior management external engagement in this process, our DoS recently attended the SEPnet (South East Physics Network) ‘Developing Diversity in Physics Good Practice’ Workshop in December 2018.

Status: **Embedded**

1.1.2 Effective consultation, communication, monitoring, evaluation and reporting mechanisms

The PAM Equality Committee undertook a PAM Staff Equality Survey in 2017, a major finding from which has been that published policies (e.g., relating to promotions) are perceived as being not widely known or transparent. To address this, considerable effort has been invested by EC members over 2018 in developing a staff ‘wiki’ (an online editable handbook ‘living document’) to identify, summarise and provide links to policies affecting all manner of equality-related policy information, e.g., on flexible working policies (with some local examples provided). This is updated regularly (and preceded by a School-wide announcement) as new policies are adopted (e.g., the recent PAM out-of-hours email policy), primarily by a few members of the EC and SEG. The purpose and contents of the staff wiki have been actively promoted by the DoS and EC Chair verbally at School meetings, and email reminders are regularly sent to help embed its usefulness by raising awareness of its existence to staff. The EC has also invited staff to provide feedback on its content; the wiki has received approximately 3700 (non-editing) views in the year preceding the Athena SWAN Silver submission (April 2018), which is a guide to its usefulness as an important resource.

Status: **Embedded**

1.1.3 Clear accountability for implementation and resources allocated (time and money)

The School has a fully transparent and shared workload allocation model, which includes explicit allowances

¹ E.g. see Section 4.1.2

² E.g. see Table 5 in the PAM Athena SWAN Silver application, in addition to the Professional Conduct in STEM workshop in Manchester in August 2018 (EC astro PGR member attended), the SEPnet Diversity in Physics workshop (DoS attended), and the upcoming Juno Practitioner workshop at the IOP in May 2019 (EC Chair to attend)

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for major EC roles (e.g. 0.2 FTE for the Chair), and enables all staff to see what workload allocations are made. Since 2015, we have had an explicit Women in Science programme, with funding for these activities provided by the School. This has evolved into a regular, mature programme, with about 50 PAM staff and students attending the 2017 PAM International Women's Day³, around 50 PAM staff and students attending our PAM International Women's Day & Athena SWAN Silver celebration in 2019, and a catered Women in PAM Lunch (about 20 attendees) running once per semester⁴. Attendance at these events is heavily skewed towards physics/astrophysics since a large proportion of attendees are our postdocs and PGRs who are entirely working either in physics or astronomy. Our Daphne Jackson fellow was funded as a delegate to attend the International Women in Physics Conference in Birmingham in 2017, and an astronomy PGR (who is also a member of the EC) was funded to attend the University of Manchester's workshop on professional conduct in STEM in August 2018. Both shared their experiences of these activities with the EC⁵.

Since 2014/15, we have achieved >40% women speakers⁶ in our astrophysics seminar series, and the PAM 'Prestige' colloquium series (which also began in 2014/2015) has been used to profile the work of senior female scientists and to develop more cross-School interaction (e.g., between physics and astrophysics researchers). This has helped diminish discipline/silo borders and promote networking (with 57% female representation overall). As of 2017, seminars have been advertised more widely, for example on a public calendar, on the PAM foyer display screen, and – this term – we have trialled a seminar schedule poster in the PAM u/g student common room. Our aim is to raise more awareness of research seminars among our undergraduates who may wish to attend. Astrophysics students have shown particular enthusiasm for attending the weekly astrophysics seminars, for example.

Status: [Embedded](#)

1.2 Monitoring and Evidence Base

1.2.1 Monitor over time, quantitative data by gender: all student admissions and performance; all staff applications, shortlists, appointment and promotion, looking at the proportion of women at each stage

For this section we refer the panel to our disaggregated data tables (provided on p.23-25), when looking at our u/g student data (since in the Athena SWAN Silver submission Tables 1, 6, 7 and 8 will also include maths students). Notably, our P&A undergraduate intake was 30% female this academic year (2018/2019)⁷ up from 22% (roughly the SEPnet benchmark target) the year before and marks the top end of what we have achieved in PAM, and what other SEPnet institutes have achieved in recruitment (see Table 7 on p. 24 and also Table 6 on p.23). We will continue to monitor this, to deduce whether this upturn could be due to the PAM pages' relaunch over summer 2018 that included an EC-led initiative (from our Juno/Athena SWAN Silver action plan) to include more diverse imagery of our own staff and students (including a high fraction of women and BAME students) engaged in their studies, rather than stock images. For PGRs, we have not seen a large increase in our female intake⁸. The reason for this is likely because the pool of female PGR students is still small, and prospective students receive multiple offers. We continue to monitor this and emphasise to prospective PGR students that UH is a good place to work and study (Action A08). To help increase our pool of potential internal PGR candidates, and hopefully a higher fraction of female applicants, in 2017 and 2018

³ E.g. EC minute 10.4, 8/6/2017

⁴ These termly lunches evolved in 2018 (due to feedback) to include men every other time so it would be more inclusive, while still focussed on women in the School

⁵ EC meeting 29/11/2018

⁶ Please refer to Table 26 in the Athena SWAN Silver application

⁷ EC meeting 29/11/2018

⁸ See Table 9 in the Athena SWAN Silver application

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our undergraduate physics society (PAMSoc) and astronomy staff co-organised a “Research Odyssey” series of short talks by invited staff (to continue annually). This event was open to all students potentially interested in pursuing research to postgraduate level and beyond (Action A18). Our PGR tutor also initiated a funded summer undergraduate research programme open to PAM students (all projects undertaken were all either physics or astrophysics) which proved very popular, with 19 participants in total across all years, 30% of whom were female. This programme is set to continue and expand this summer (Action A19).

The EC has also regularly monitored and discussed trends in undergraduate and PGR recruitment⁹, success rates (for example in showing that female P&A students do proportionally as well or better than male students in achieving ‘good’ degrees¹⁰). We find that the percentage of females with good degrees has increased steadily over the past ~7 years, and the last 3 academic years are well-matched or exceeding the HESA benchmark (see Table 8 on p.25). The EC has also started to audit withdrawals from our P&A PhD programme, in conjunction with the Doctoral College, to determine if withdrawals occur disproportionately more often for female students compared to male students. This project is ongoing¹¹, and the statistics are rather small and there is a great deal of variation from year to year, but there is an indicative trend that there has been a (~50%) higher proportion of female PGR suspensions/withdrawals in some of the past 5 years. In 2017, we attempted to interview two female PAM PGR students who withdrew from their degrees during 2016/2017, but our attempts at exit interviews (by our Associate Dean of Research and by the EC Chair) were unsuccessful (e-mails were met with no response). One action we would like to implement is to continue monitoring PGR non-completions and to discuss with the Doctoral College about how to enact a procedure to best conduct exit interviews (New Action J1.2.1a).

For staff, the systematic tracking, reporting and reviewing of the makeup of recruitment and selection panels has been more sporadic since these do not follow a regular annual reporting cycle (although data is held and provided by HR annually on candidate shortlisting and outcomes), in contrast to student recruitment and progression. In fact, one of our revised actions from our Juno Practitioner Renewal submission was to continue to improve our review of staff recruitment and selection exercises. The EC have proposed a more formalised way to ensure complete staff recruitment (and panel composition) records are kept by the panel chairs, and held locally by our PAM Administrative Manager who will oversee the database (Action J1.2.1b). In the meantime, and as part of our new Athena Silver plan, we have also implemented a new policy with the support of the DoS to ensure a >40% female fraction on all staff recruitment panels, with a minimum of 2 females¹². Since participation in such panels will be an additional burden on the rather small number of female P&A staff, the DoS has agreed to front-load extra administrative workload hours to all female staff to compensate for this, but the burden can also be alleviated by ‘borrowing’ female staff from other Schools when necessary or also to involve senior female postdocs when appropriate. We will continue to monitor the implementation and effectiveness of this action (Action A12).

Our visitor data shows a good balance between male and female seminar and colloquium speakers (see Table 26 in our Athena SWAN Silver application). This has continued into 2019, despite annual changes in the seminar organisational team, demonstrating that this is now an embedded practice.

⁹ E.g. EC meetings 12/12/2016 & 8/6/2017

¹⁰ E.g. EC meetings 12/12/2016 & 26/1/2017

¹¹ On the EC agenda for our next meeting in June 2019

¹² This action came about due a consultation with female staff at a Women in PAM lunch, suggesting females sometimes felt like they had a weaker voice on recruitment panels if they were the sole female present. The DoS has agreed that we could increase female staff workloads to accommodate the additional admin burden, or also to borrow female academic staff from other schools, if necessary, and in addition to begin including more senior female postdocs on panels, where appropriate.

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Action: A08: Ensure that the School environment is one in which women interviewed for PGR places will wish to join as they embark upon their research careers as PGR students – Status: **ongoing**

Action: A12: Increase the proportion of females (>40%, but at least two women) on all staff recruitment panels – Status: **embedded/ongoing**

Action: A18: Create opportunities to help UGs learn about PGR opportunities and research in PAM and beyond – Status: **embedded** via the Research Odyssey and summer u/g research scheme

Action A19: Promote and review gender balance in the u/g summer research programme - Status: **ongoing**

NEW Action J1.2.1a: Continue monitoring P&A PGR completion and withdrawal rates and to implement a procedure in cooperation with the Doctoral College for automatic exit interviews to take place in order to get insight into how we can better support our female PGR students - Status: **NEW** - Timescale: annually - Person Responsible: PGR tutor - Success measure: 50% decrease in fraction of female PGR withdrawals/non completions

NEW Action J1.2.1b: To systematically track and review the makeup of recruitment and selection panels, as well as the outcomes of staff recruitment - Status: **NEW** - Timescale: annually - Person Responsible: Interview Panel Chairs, and with our PAM Administrative Manager overseeing and holding the records - Success measure: 80% complete records for recruitment and selection exercises

1.2.2 Obtain qualitative data from staff

Besides participating in a University-wide staff survey in 2017, in Spring 2017 the PAM EC conducted a separate School Staff Equality Survey (39 respondents), and held focus groups and/or interviews with undergraduate students, PGR students and Senior Lecturers, the results of which were all discussed by the EC¹³ to review progress and inform future plans (Action A02). As part of our data-informed action plan, we plan to run interviews and focus groups with postdocs (who are all physicists or astronomers) and part-time staff or staff who work flexibly, so to better understand their experiences in the School (Actions A11 & A16). The PAM Equality Staff Survey was repeated recently in 2019 to track any changes (32 respondents) and one notable improvement was that 97% of staff are now aware that we are working towards further Athena SWAN and Juno awards (up from 90% in 2017), with 72% of staff feeling they have had a positive effect on the School (80% of women vs. 72% of men), compared with just 62% in 2017. Notably, there has been an overall +20% increase of positive views of Athena SWAN and Juno from men, indicating a real culture shift: there is more awareness and willingness to address equality issues and this is becoming embedded within the School. Overall findings from the staff surveys are communicated to staff via staff meetings and followed up with e-mail summary, and proposed actions are presented for discussion. Findings from the 2019 survey have been used in the narrative here and as evidence for new or revised actions since our Juno Practitioner renewal / Athena SWAN Silver applications were made.

Action: A02: Continue our biennial PAM Equality Staff Survey and UG/PGR focus groups – Status: **embedded/ongoing**

Action A11: Understand the basis of perceptions that part-time and flexible working delay career progression, staff experience of induction, and act to ensure that part-time or flexible working options are promoted to staff and potential applicants - Status: **ongoing** (via focus groups/interviews)

¹³ EC meetings 6/9/2016 & 8/6/2017

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Action A16: Evaluate and maximise usefulness of the Researcher Development Framework (RDF) to postdocs (specifically) – Status: **ongoing** (via postdoc focus groups/interviews)

1.2.3 School Action Plan and its development, informed by outputs from quantitative and qualitative data

The EC continuously monitors and adjusts the action plans¹⁴, informed by HR and academic registry annual reports sent to PAM, EC members' experiences, PAM Women in Science lunches (which we use to discuss relevant issues which are reported back to the EC for consideration), the biennial staff interviews and student focus groups (2017, 2019), and the biennial PAM Equality Staff Survey (2017, 2019) - (Actions A02 & A07). For u/gs there is also the annual L&T student focus groups, and from now on we are planning to embed our biennial undergraduate equality focus group into this activity due to the difficulty of recruiting student volunteers to run two separate events. The staff survey results have been analysed by the EC Chair and a report has been sent to EC members and presented to SEG (Action A04) to seek further input prior to it being discussed as an agenda item at the next EC meeting in June 2019. We note that our current actions may be further revised or new actions defined, once we have been able to fully reflect on the data together as a team. A few examples of new Athena SWAN Silver actions which have been implemented following discussions at a Women in PAM lunch (normally around 20 attendees, the vast majority of which are female postdocs and PGRs, all physics and astrophysics) include the >40% fraction of women on faculty recruitment panels (in April 2018), a recently implemented School 'out of hours' email policy (implemented March 2019, with the majority of staff in support; 72%¹⁵) to help promote a better work-life balance, and holding a mandatory 2-hour bullying & harassment (B&H) training session in March 2019 for all PAM staff and PGRs.

Action: A02: Continue our biennial PAM Equality Staff Survey and UG/PGR focus groups – Status: **embedded**

Action A04: Ensure that E&D matters are incorporated into strategic and operational planning in the School (EC Chair has a direct line to School managers and DoS via the SEG) – Status: **embedded**

Action A07: Participate in the University's BAME Success Project to understand and overcome factors that influence lower success rates for some BAME students – Status: **ongoing** (/embedded as our school BAME champion now sits on the EC)

Juno Principle 2: Appointment and selection processes and procedures that encourage men and women to apply for academic posts at all levels

2.1 Ensure that processes and procedures are fully inclusive

As previously stated, our u/g students separate unambiguously into distinct Physics (& Astrophysics), and Mathematics programmes. Since our School does not have distinct Physics and Maths departments, there is no formal definition of "physics staff" as distinct from "maths staff", and all PGRs and postdocs are either physicists or astronomers. Therefore, for this Juno application, we have included all staff members who teach or support the Physics Programme (including Maths within the Physics Programme) or undertake research in physics, since these are the people who Physics students, staff and visitors will interact with most. In light of this, essentially all of what is written in our Athena SWAN Silver application in Section 5.1 (i) Recruitment; and (ii) Induction and (iii) Promotion will also be applicable to this section, and should be read alongside, so we only briefly summarise these points here.

2.1.1 *Ensure career breaks are taken into consideration*

Because of the long timescales associated with planning and undertaking publishable research projects, and the rapid pace at which a research field can advance during an extended period of absence, a long career break can uniquely affect PAM researchers in a way that other roles in the School are not. To address this,

¹⁴ E.g. EC meetings 2/7/2015, 9/6/2016, 6/9/2016, 8/6/2017, subgroup 18/7/2017, subgroup 05/05/2018, 25/04/2019

¹⁵ Data from the 2019 PAM Equality Staff Survey

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the SEG has implemented (from January 2019) an EC-initiated workload tapering policy for career break returners (with a guideline 50% reduction in teaching/admin upon their return for the same length of time as any leave exceeding 3 months). No staff have since taken extended leave to benefit from this policy, so its impact has yet to be tested. However, our 2019 Staff Equality survey revealed that 30% of PAM staff (41% of men and 22% of women) have taken some form of maternity, paternity or parental leave (including several senior male staff), which is helpful for normalising career breaks due to caring responsibilities for both sexes. Although 43% of men and 50% of women thought that taking these types of leave would (or were unsure if it would) damage their career, the reality showed a different picture: of those that did take the leave, some women thought it had damaged their career, but none of the men thought it had damaged theirs. The difference is most likely because men typically take less than 6 months of this type of caring-related leave, and so it is less likely to be detrimental to their research careers compared to the longer leave of >6-12 months which women typically take. For this reason, the policy is expected to be more beneficial to female staff, but could also encourage more take-up of the shared parental leave provision by men. Naturally, this will require more long-term monitoring to determine if it has had a positive impact on the fraction, career progression and promotion rates of female staff (Action A21). Postdocs are particularly vulnerable due to the nature of the typically 2-3 year fixed term contracts (which are usually externally funded), so taking leave must be even more carefully considered as part of their career plan. The EC chair is pushing for contracts to automatically be extended by the University at the central level via the SAT, in the event of a member of staff on a fixed term contract taking an extended career break (Action A20, but revised). Since all of our postdocs are either in physics or astrophysics, this is an action specific to physics, but could be applicable to any other type of fixed term contracts within PAM, e.g., our astronomy outreach officer or technical or teaching-only staff.

Another of our Athena SWAN Silver actions (Action A10) is to have an annual promotions round taken at the senior management level (in addition to allowing staff to self-select themselves for consideration for promotion). This is designed to capture staff who would not self-select, or might wait longer for promotion due to, for example, having taken a long leave (as has been evidenced for women and other underrepresented groups). This will be clarified at our in-house annual PAM promotions seminar that is now planned for our 2019 Staff Away Day as part of our Athena SWAN Silver (and Juno) action plans (Action A13).

Action A10: Ensure that promotions criteria are understood by all staff and staff are encouraged to plan their progression to higher grades – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Action A13: Raise awareness of different pathways to develop one's career to work towards promotion – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Action A20: Lobby the University-wide SAT to help better support women's careers - Status: **ongoing** (Update: revised to include also (iv) lobbying the University to automatically extend fixed term contracts when they are taking an extended career break)

Action A21: Help research-active women's transition back to work from long career breaks via teaching relief (workload tapering) - Status: implemented/ongoing (impact and take-up to be monitored)

2.1.2 Gender awareness included in training for all staff who interview

All staff already undergo mandatory centralised E&D and unconscious bias training¹⁶. Recruitment panels have long had at least one female member, in line with central UH policy, but now due to concerns raised about the 'lone female voice' by our own female staff and our Dean of School, since April 2018 the School

¹⁶ The offer of unconscious bias training has been relatively recent, and there was a major drive within PAM in 2014 (initiated by the then DoS) where it was made mandatory for existing staff to catch up with this training.

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has implemented a minimum 40% female fraction (and no less than 2) for all staff interviews (with the additional workload front-loaded to account for the extra burden on female staff; Action A12). Central recruitment and selection training is currently required for all panel chairs (which PAM is compliant with) and the majority (currently 75%) panel members have also undertaken this training, but not all (see New Action J2.1.2).

Action A12: Increase the proportion of females on staff recruitment panels – Status: **implemented (ongoing)**

New Action J2.1.2: EC will take the issue to next SEG meeting whether the School should make it mandatory for all staff (not just the chairs) on interview panels to have taken the University's central recruitment & selection training (this would be in addition to the central unconscious bias training which is already mandatory for new starters) - Status: **NEW** (Timescale: June 2019 - Success measure: School to implement a policy for mandatory R&S training for all panel members, not just for panel chairs)

2.1.3 *Provide induction for all new staff, including research assistants, on appointment*

All new staff and postdocs participate in a UH-wide induction programme, as well as an in-depth local induction with their line manager. This local induction has been enhanced with the creation of a comprehensive and growing PAM staff handbook (wiki) in 2017 which is accessible via our intranet to everyone in PAM. Line managers are expected to inform new starters about this during their induction. However, we recognise that we cannot be over-reliant on a staff handbook, since, for example, despite local guidance being provided in the wiki, some staff still claim to be unaware of the promotions process and criteria (5/17; 30%) and flexible working policies (5/18; 30%)¹⁷. In the recent PAM Staff Equality Survey, 6/8 (75%) of staff who joined UH 0-3 years ago indicated they felt their induction was adequate, compared with 6/7 (86%) of staff that joined 3-6 years ago and just 9/16 (56%) of staff that joined 6+ years ago. Reassuringly, the survey responses indicate a positive trend towards those joining more recently feeling they had a useful induction¹⁸. In addition, the EC has suggested the creation of an induction checklist in collaboration with line managers via SEG (New Action J.2.1.3), which will not only ensure more uniformity to the local induction experience for new staff, but it will be particularly useful to specifically highlight local policies and procedures in PAM which may be overlooked (with a particular focus on Juno-related themes). The use of the wiki as a valuable post-induction resource continues to become more embedded within the School as a variety of staff are more habitually updating it with new key School policies and/or procedures with the link circulated by email (e.g. most recently our out-of-hours email policy) to all staff and PGRs.

New Action J2.1.3: EC Chair and SEG to jointly draft a local induction checklist for line managers – Status: **NEW** (Timescale: by Dec 2019 – Success measure: >20% increase in the positive views of new staff towards the usefulness of induction)

2.2 *Take positive action to encourage under-represented groups to apply for jobs*

Since the representation of women in physics is the worst among the STEM subjects¹⁹, we need to do more here. The proportion of female P&A staff in our School has remained static at about 25% over the past few years (see Table 1, p. 23), and the proportion of *permanent* female P&A staff hires is even lower at only 20% over the past 6 years²⁰. Whenever possible, the School advertises that full-time posts could be offered on a less-than-full-time basis to encourage applicants (e.g. those with caring responsibilities) who might be

¹⁷ Data provided by the 2019 PAM Equality Staff Survey

¹⁸ Also, as part of the institutional Athena SWAN Bronze action plan, UH are planning to instigate a central induction questionnaire to be disseminated to all new starters across the University and feedback sent to individual Schools, which the EC can help monitor to inform the effectiveness of our local induction "checklist"

¹⁹ Gender gap in physics among highest in science, April 2018, Physics World /Diversity and Inclusion (IOP Publishing) <https://physicsworld.com/a/gender-gap-in-physics-amongst-highest-in-science/>

²⁰ See Tables 13 & 14 in the Athena SWAN Silver application

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looking for <1.0 FTE (e.g. see Case Study 2 in the Athena SWAN Silver application, p. 57). In addition, the EC routinely consults on the phrasing of job adverts for gender-neutrality and positive E&D statements, with an aim to encourage under-represented groups to apply. The DoS noted that on the last two interview panels he chaired, the female applicants gave some very positive feedback about the gender-aware wording of the job adverts. We intend that the EC will write a code of “best practice” for job adverts to advertise to staff and put in the staff handbook, and that we will continue to consult on advert wording in order to raise awareness (New Action J2.2). Internally, committee “roles” in the School and University (e.g. EC Chair, academic board, placement tutor, Director of the Bayfordbury Observatory, etc.), which are often useful for promotional cases, are advertised to all staff (encouraging transparency and openness), and there is evidence of people deemed to possess the right mix of qualities being actively encouraged to apply. For example, in the 2019 Staff Equality Survey women cited a 13% higher likelihood of being approached than their male colleagues (an overall change of 20% since 2017, when men felt they were 6% more likely to be approached). This could be due to the conscious embedded effort towards better gender balance on committees within the School, and the greater awareness in the School of the Juno commitments and the positive influence that it is having (97% awareness, and 72% viewing it as having made a positive difference; see Section 1.2.2).

New Action J2.2: EC Chair to write a code of “best practice” for job adverts to share with all staff – Status: **NEW** (Timescale: by Dec 2019 - Success measure: >20% increase in proportion of female applicants and hence fraction of new staff by 2022)

2.2.1 *Monitor applications, shortlists and appointments, looking at the proportion of women (internal and external) at each stage*

This monitoring and related actions are an ongoing EC activity, but we are still seeing a rather limited impact of these (see Section 1.2.1 for more discussion and suggested action). Although our P&A undergraduate female intake has increased to 30% this year (2018/2019), our female staff fraction recruitment has remained steady at 38%. Anecdotally, as one of the very few senior female staff in P&A (and one of the beneficiaries of a ‘two-body problem’ hire), the EC Chair has been involved in the vast majority of the astronomy recruitment exercises (mostly of postdocs) and can confirm that all the processes and shortlisting and interviewing has been fair and balanced as far as applications versus shortlisting and offers (without the need for intervention), but we need to do further work to ensure this is embedded uniformly throughout the School (Actions A23 & J1.2.1b).

Action A23: Review gender balance on committees and in important School roles to help revise and consider processes for filling vacancies – status: **embedded/ongoing**

NEW Action J1.2.1b: To more systematically track and review the makeup of recruitment and selection panels, as well as the outcomes of staff recruitment - Status: **NEW** (Timescale: annually - Person Responsible: Interview Panel Chairs, and with our PAM Administrative Manager overseeing and holding the records - Success measure: 80% complete local records for recruitment and selection exercises)

2.2.2 *Identify any discrepancies and investigate why this might be the case, taking action as necessary*

The suggested action here is to make UH as attractive to female applicants as possible, through our public website materials, attention to the job advert wording and by demonstrating balance on panels (Actions 06 & 09). We also have some experience of addressing the common ‘two-body’ problem, with 2 physics/astrophysics couple hires in the past 5 years. In January 2019 we undertook a major update and enhancement of our School Equality webpages, which now showcases some of our female staff and students, promotes our Athena SWAN and Juno applications, includes a statement of commitment from our DoS, as well as including information about our new PAM LGBT+ network. Feedback from recently recruited

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female postdocs to the EC chair stated that the Athena SWAN and Juno work as well as publicly demonstrating commitment to being diverse in other ways (e.g. LGBT+) was attractive and important to their overall decision to take up the post, which demonstrates the positive impact this strategy is already having.

Action A06: Ensure continued high visibility of women on outreach and recruitment activities – recognising that achieving social change of the required magnitude is a long-term - Status: **embedded**

Action A09: Encourage more women (and other underrepresented groups) to take up posts in the School – Status: – **embedded/ongoing**

Juno Principle 3: Departmental structures and systems which support and encourage the career progression and promotion of all staff and enable men and women to progress and continue in their careers

3. 1 Transparent appraisal and development

3.1.1 Appraise all staff, including researchers and PDRAs

It is UH policy that all staff are expected to have annual appraisals with their line managers. This has long been the case for all staff in PAM, including postdocs/researchers (see Section 5.3 ii in the Athena SWAN Silver application for details). However, it was found via our 2017 Staff Equality Survey that appraisals were not happening annually for a large proportion of the staff, and it was decided by SEG to streamline the line management tree in 2018 (Action A15). Unfortunately, our 2019 survey reveals no overall improvement in the frequency or perceived usefulness of appraisals: 20% of staff have not had an appraisal in the past 2 years. 70% of staff feel that career progression and workload are usefully discussed during appraisals (90% of women vs. 70% of men; a small improvement of 10% overall from 2017), but 54% of respondents did not find appraisals useful for career development (67% of men vs. 33% of women; 10% worse overall but 33% worse for women and 10% worse for men compared with the 2017 survey results).

A proposed and ongoing action from our Athena SWAN Silver application which might help address this shortcoming is a proposed career development / promotions information workshop for all PAM staff (including postdocs). We will run this jointly with HR as part of the annual Staff Away Day in September 2019 (Action A13). Since 2018, the University has opened up a new track for promotion on an Associate Professor route (similar to Reader level) operating on an annual-round basis, and has run annual information sessions for all staff. The University also plans to extend this to the Senior Lecturer/Reader/Professor route in the near future. Central communication was very good at highlighting this opportunity and we have already had one eligible male member of staff pass through this route with a successful outcome.

Action A13: Raise awareness of different pathways to develop one's career to work towards promotion – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Action A15: Review effectiveness of the revised appraisal system – Status: **ongoing** – Update: no positive impact seen so far (e.g. 2019 PAM Staff Equality Survey). Update: DoS proposes to hold an annual line managers meeting (promotions round) in September 2019 (to coincide with the promotions workshop in A13 above) to consider all staff that might be eligible for promotion.

Action A16: Evaluate and maximise usefulness of the Researcher Development Framework to postdocs (specifically) – Status: **ongoing**

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3.1.2 *Mentoring scheme in place with training and guidance available for both mentors and mentees*

Mentors are normally only assigned for new permanent members of staff during their first year, with line managers or supervisors typically acting as mentors for postdocs: 17% of staff report to have a mentor (12% men vs. 30% women). Our most recent Staff Equality Survey indicates that the majority (57%) of staff do not have and do not want a mentor, leaving 27% who do not currently have a mentor but would like one. The latter statistic is predominantly females in the School (50% women vs. 12% men), and most likely early-career researchers (postdocs or fixed term contract staff) who think they would benefit from being mentored. Part of our Athena SWAN Silver action plan is to implement a wider more formalised mentoring scheme within PAM (Action A17). We are currently seeking support from the University in the first instance, but if the University is unable to support us in the implementation of expanded mentoring we will set up a scheme internally in the School relying on our own resources.

In the meantime, informal mentoring for our P&A staff (and students) already takes place via several networking opportunities (Action A03), which include weekly CAR coffee, broad subject meetings (e.g., Extragalactic Group), seasonal social events (CAR Christmas Dinner), CAR and PAM seminars, outreach events, and our Women in Science programme of activities (e.g., termly lunches, annual PAM International Women's Day event) where all grades of staff and undergraduate and PGR students are invited and welcomed to participate and interact. In February 2019, the EC Chair was invited to a postdoc/PhDs careers event in the Oxford Physics & Astronomy department as a panel member, to share her experience in academia and how to 'make it work' with caring responsibilities. A mix of research and career trajectory stories such as this are shared by academic staff and PGR students at our (now) annual internal PAM 'Research Odyssey' organised by PAMSoc, and the PGR Conference run by the Doctoral College in 2018. In 2018, the EC also initiated a regular 'meet the speaker' session every week for the PGRs (with u/gs also welcome to attend) and this has successfully become an integral (and embedded) part of the regular CAR seminar series. This weekly special informal session is chaired by our P&A PGRs and enables them to pose questions to the visitor (without any local staff present) in order to gain career-valuable access to a diverse (~40% female) pool of active researchers in their field of study.

Action A03: Continue our series of women's forums and similar activities – Status: **embedded**

Action A17: Develop re-invigorated mentorship programme for new staff and PGR students (also open to existing staff) – Status: **ongoing**

3.1.3 *Ensure all staff, including PDRAs, have access to impartial career guidance*

The vast majority of School staff (80%; 90% of women vs. 76% of men) feel they are able to access training and development opportunities for career advancement (no change from 2017)²¹. Of items not currently offered in the School/University, 44% of women cited "career advice" as the item that would be most beneficial to their career development, with 38% of men citing "effective appraisals". We encourage our postdocs to participate in the University's Researcher Development Programme (RDF), which provides training on writing, research, public speaking and grant writing, and they have an opportunity to gain teaching experience and to undertake the University's L&T course which can qualify them to Associate Fellowship of the HEA, in support of their academic career progression (Action A14). Career support to all staff is also provided through the biannual appraisal system, which underwent a major overhaul in the School in 2017 in an attempt to increase its usefulness for individuals (Action A15). While the offer of mentoring was not widely supported by staff, the EC is currently considering how to configure a new scheme for those staff or postdocs who would value it (Action A17), as mentioned in 3.1.2.

²¹ Some of the UH-wide central careers training include a workshop for writing an HEA fellowship application, "developing your career" course, and the Aurora programme aimed at developing female leaders

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Action A14: Ensure that female (and male) researchers are supported in their career development through a wide range of professional (RDF) and E&D (Juno/AS) activities – Status: **embedded/ongoing**

Action A15: Review the effectiveness of the revised appraisals system – Status: **ongoing** – Update: no positive impact seen so far (e.g. 2019 PAM Staff Equality Survey). Update: DoS proposes to hold an annual line managers meeting (promotions round) in September 2019 to consider all staff that might be eligible for promotion, including postdocs on fixed term contracts.

Action A17: Develop re-invigorated mentorship programme for new staff and PGR students (also open to existing staff) – Status: **ongoing**

3.2 Transparent promotion processes and procedures

3.2.1 *Ensure the promotions process is transparent and fair to all staff at all levels, including those who have had a career break*

Guidance for promotions processes are published centrally, but also have been extensively revised and advertised to staff on our local staff handbook 'wiki' pages. Appraisers have also been encouraged by the DoS via SEG to discuss promotions policies and procedures with staff in the revamped appraisals scheme (Action A15). Despite these efforts, a significant number of staff (30%) claim not to understand the promotions process or criteria (28% of men vs. 40% of women; effectively no change from 2017), and 32% of respondents do not think it is transparent or fair (35% of men vs. 20% of women split, although there has been an improvement seen for women by 15% since 2017). This could well reflect newer staff members who have never been through the promotions process at UH, but all staff would likely benefit from our proposed promotions and career paths workshop, scheduled to take place during our annual Staff Away Day in September 2019 (Action A13).

As mentioned above, about 50% of staff thought, or were not sure, that taking some form of maternity, paternity or parental leave would damage their career. Similarly, 63% of staff (60% of women vs. 78% of men) think working part time would negatively affect their career, with 55% of staff believing it would take longer to progress if one worked part-time or flexibly. To counter this, we will reiterate at the PAM promotions/career development information session that working part-time or flexibly or taking career breaks should not negatively affect career progression (Actions A10 & A13). To help mitigate this for research-active career-break returners from leaves of 3 months or longer, the DoS and SEG has implemented a workload tapering policy for staff, including a guidance of approximately 50% reduction in teaching and administrative responsibilities for a similar amount of time they were absent. This group would otherwise see their research efforts diminished over their period of leave, and would return to a full teaching load; the new policy will help to accelerate their research upon returning to work, and at the same time remove the perception that returners need to wait longer for promotion on an academic route (Action A21).

Action A10: Ensure that promotions criteria are understood by all staff and staff are encouraged to plan their progression to higher grades – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Action A13: Raise awareness of different pathways to develop one's career to work towards promotion – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Action A21: Help research-active women's transition back to work from long career breaks via teaching relief (workload tapering) - Status: **implemented/ongoing** (impact and take-up to be monitored)

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3.2.2 *Ensure all staff are aware of promotion criteria and process and the support available to them throughout the process*

As mentioned above, the central policies on the promotions criteria are published and available to all staff, and also the information has been collected locally in our PAM wiki / staff handbook.

Of staff that have entered into the promotions process, 90% of respondents felt they received appropriate and useful feedback when they applied for promotion (a +20% change compared with 2017). However, 42% of staff (no discernible gender difference) feel they have not received support or do not feel encouraged to apply for promotion or internal jobs (similar as in 2017). Of the 40% of staff that have not put themselves up for promotion yet, around 25% of these stated they did not want to, with 40% stating a variety of reasons, including they did not think it was possible given the contract type/role or waiting for the right opportunity (50% of women), or only joined relatively recently (33% of men).

Action A13: Raise awareness of different pathways to develop one's career to work towards promotion – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

3.2.3 *Take steps to identify and encourage potential candidates for promotion*

To avoid an over-reliance on central policies surrounding promotions, a decision to institute an annual round of promotions within PAM (at the annual line managers' meeting) was taken at SEG in 2017. The first round will be launched in September 2019 in concert with the inaugural annual promotions workshop (Action A10). This will be beneficial to everyone, but especially to women and other under-represented groups in particular, who are known to be less likely to put themselves forward for promotion or to take longer on average to do so compared with men. We will recommend that postdocs or other staff on fixed-term contracts are included in the process to look at conversion to permanent posts during this round.

Related to this, the EC suggested to the Research Committee (which comprises the main subject group Heads and the Associate Dean of Research; 75% of who are in Physics/Astronomy) to seek out and nominate eligible staff for medals, awards and fellowships, to help bolster their career development and promotion cases. The Research Committee Chair (ADoR) has been proactively sending out emails when opportunities arise, but this makes it difficult to monitor if uptake has increased or had any impact. The Research Committee is now considering whether to allocate this task to a particular member of staff, and the EC will monitor the situation.

Action A10: Ensure that promotions criteria are understood by all staff and staff are encouraged to plan their progression to higher grades – Status: **ongoing** (Update: inaugural annual PAM promotions workshop and the first annual PAM promotions round both scheduled for September 2019)

Juno Principle 4: Departmental organisation, structure, management arrangements and culture that are open, inclusive and transparent and encourage the participation of all staff

4.1 Promote an inclusive culture

4.1.1 *Ensure departmental processes, procedures and practices are fully inclusive*

A successful example of this being enacted is that the appraisal structure was overhauled in response to the 2017 Staff Survey, but a less successful outcome is seen in the perceptions of transparency. Our most recent (2019) PAM Staff Equality Survey revealed that 63% of staff disagree with the statement "decision making in my department is transparent" (50% male, 80% women), similar to 2017. This could reflect the fact that there is a higher proportion of men on SEG or senior decision-making committees. The data have yet to be fully considered/analysed by the EC data team, but this has already been brought to the attention of SEG

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(March 2019) by the EC Chair, and the EC will consider and recommend further action to SEG to address this. Minutes of School meetings, notes from staff away days, and Programme Committee minutes are already emailed to all School staff after they occur, but the majority of major School management decisions are made at SEG meetings, and SEG minutes (with confidential items redacted) are only sporadically circulated. Action will be taken to improve this, and also to consider alternatives such as regular face-to-face DoS coffee briefings with staff, or tabling more items for discussion at School meetings (Action A04). These recommendations have been made to SEG and will be further discussed by the EC/SEG. Although the CAR management committee and the EC include postdoc representatives (and now also senior postdocs will be considered for membership to interview panels too, see 1.2.1 and 2.1.2), we recognise that we could do better to engage postdocs in more decision-making processes. Senior management felt that because postdocs are generally fixed-term it is better for them to 'get on with research', however, at a minimum they could be invited to staff Away Days and School Meetings (New Action J4.1).

Action A04: Ensure that E&D matters are incorporated into strategic and operational planning in the School, and that these address students directly, not just indirectly – status: **embedded/ongoing**

New Action J4.1: Inviting postdocs to the annual Staff Away Day, and also to regular School meetings – Status: **NEW** (take-up and feedback to be monitored) - Timescale: with immediate effect - Person(s) responsible: DoS, PAM Administrative Manager

4.1.2 Gender awareness included in the training for all staff and demonstrators

E&D and unconscious bias training is required for all staff and PGR students at induction and is thus embedded, as many of our PGRs do some teaching and outreach. Since 2016, the EC has also led a topical E&D-related session during the annual Staff Away Day: for example, (i) a WISE "People Like Me" activity (2016), (ii) a summary of PAM Equality Staff Survey results "you said...we did" discussion session (2017), (iii) inviting two guest speakers about supporting LGBT+ staff and students (2018), and (iv) a promotions and career pathways seminar with HR (2019, planned). This year our LGBT+ Champion invited a physics seminar speaker for LGBT+ month (February 2019) from the Pride in STEM organisation, which had a particularly high turnout among our undergraduates. Many of our PGRs are demonstrators or run problems classes and interact with undergraduates, so we trail-blazed unconscious-bias training for PGRs in our School. This has now been taken up by the Doctoral College for all PGR students in the University since 2017/2018. In light of the IOP/RAS Policy Briefing (2015)²², it is worth mentioning that our most recent female P&A PGR interviews in 2017 (and also informally communicated at our termly Women in PAM [WiPAM] lunches) revealed that all felt they had an equal opportunity, are encouraged, and that the School promotes a positive view of female scientists and seeks out female representatives for activities, outreach and committees. U/gs are actively engaged in many outreach activities, but they are not formally required to receive any formal E&D training as part of this role. In response to feedback received from our female u/g focus groups and outreach teams, our action plan (Action A04 i) stipulates that we will provide E&D awareness training (and revised to now also include bullying and harassment training) from September 2019 onwards to all incoming u/g cohorts, with the intention of this becoming embedded into the regular induction via the Programme Tutors.

Action A02: PGR focus groups to see females feel encouraged. Status - **ongoing**

Action A04: Ensure that E&D matters are incorporated into strategic and operational planning in the School, and that these address students directly, not just indirectly – status: **embedded/ongoing**

4.1.3 Promote inclusive social activities and other opportunities for mutual support and interaction

Postdoc representatives sit on the EC and also attend our WiPAM lunches in larger numbers. The WiPAM

²² Gazing at the Future, IOP/RAS Policy Briefing, May 2015

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lunches now serve as a focus-group forum for exploring equality issues in a safe, supportive and open environment. We have developed a range of Women in Science activities which support our postdocs, and postdocs have also participated in UH-led and EC-led staff surveys helping steer the School towards its diversity goals (Action A03).

Action A03: Continue our series of women's forums and similar activities – status: **embedded/ongoing**

4.1.4 Use positive, inclusive images in both internal and external communications

The admissions tutor is a member of the EC and recently organised the promotional photography campaign of our own students, with a high proportion of female and BAME students. This was to make sure we send a positive message of inclusion to all prospective students. These images have been used in our programme prospectus, along with Athena SWAN Silver and Juno Practitioner logos, as well as in our School webpages, which includes a page dedicated to equality work in the School to demonstrate our commitment. Our School webpages were completely overhauled in the summer of 2018 to include more diversity in its imagery, so this is now strongly embedded (Action A06).

The admissions tutor also organises open days and student ambassadors for the P&A programmes and has consistently had at least one female academic (this is work-loaded) or student ambassador in attendance on open days since 2014. We also have a rather high fraction of women (>30%) involved in P&A outreach activities (26% in 2016/2017 and 37% in 2017/2018; please refer to p.54 of our Athena SWAN Silver submission).

Action A06: Ensure continued high visibility of women on outreach and recruitment activities (& retroactively workloaded) and a high proportion of women included in School imagery – Status: **embedded**

4.1.5 Encourage and support female seminar speakers

The main weekly seminar series is organised by a team (normally postdocs) within the Centre for Astrophysics (CAR) and there are usually 1-2 PAM Prestige Colloquia each term on topics more broadly applicable to PAM research. Despite a turnover in postdoc seminar organisers we have been able to maintain a high fraction of female speakers (30-40%, with 50% being the target; See Athena SWAN p. 53 Table 26), demonstrating that this is embedded practice. Our own postdocs and final year PGRs are strongly encouraged to give a seminar to help them gain experience giving seminars and raise their internal profile. For example, our Astrophysics Daphne Jackson Fellow (career break returner / retraining scheme) recently gave a seminar on her completed project undertaken at UH and at other departments.

Status: **embedded**

4.2 Transparent work allocation model

4.2.1 Recognise the full range of types of contribution and departmental role, including administration, welfare and outreach activities

The School workload spreadsheet details a very wide range of teaching, research, outreach, recruitment, pastoral care and academic administrative roles (including year tutors, PGR tutor, admissions tutor, programme tutors, EC Chair and deputy chair) undertaken by staff and the hours allocated to each role²³. The School workload allocation calculations are shared transparently with all academic staff. Despite this clarity, a rather higher proportion of men (83%, vs 30% female) cite that they regularly work longer than their contracted hours, with 45% of all respondents (45% of men vs. 30% of women) stating that they do not feel

²³ See p. 52 of the Athena SWAN Silver award application

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that this excess work is recognised or appreciated by their line manager or School (this latter point is up 11% from 2017). It follows that 61% of men feel they do not have the time to complete their work to the standard they would wish (vs. 30% of females). It is likely that these results are skewed towards men since there are a higher proportion of men in more senior roles in the School (and with an increase in workload generally expected and 'accepted' as a function of seniority), but note that this dissatisfaction with one's own work standards has seen a general increase by 20% since 2017 for both genders. The idea that an increase in workload as a function of seniority is generally accepted as part of the increase in responsibility is one that the EC feels should be challenged. Some serious consideration should be given to this, as it may dissuade certain members of staff from taking on more senior roles, such as academics who aspire to seniority but who also have caring responsibilities (and females in particular) and who could not practically commit to both working these 'expected' extra hours and to delivering on their caring responsibilities. On the heels of this point being raised at SEG, the DoS has since recently embarked on reducing the workload allocations of all senior members of staff who were significantly over the 1.0 FTE mark (or equivalent if part-time), and this will be communicated to the staff at the next staff meeting (June 2019). We propose to take our findings and action to our central SAT and our other networks (SEPnet Diversity, the IOP Juno network) to share good practice and to try to influence a culture change throughout the University and beyond (New Action J4.2.1).

New Action J4.2.1: To have a wider discussion in the school in order to better understand the perceptions of staff towards workload and balance when the staff survey results are presented at the staff meeting in June 2019 by the EC, and to extend this discussion to the University Athena SWAN SAT and our other networks (SEPnet Diversity Team, Juno Practitioner's Network, etc.) throughout 2019/2020 - Success measures: future staff survey show a >75% increase in positive views towards perceived workload and balance by 2021, and adoption of a similar model by other schools within UH and external physics departments

4.2.2 Ensure all staff are aware of the criteria used to develop the model and that the allocation is transparent

Our most recent 2019 PAM Equality Staff Survey reveals that there is a general consensus that the workload model is fair and transparent (75%; no change from 2017). Again, it is positive to see that the majority (65% of men and 80% of women) feel they are given fair allocations (+20% change for women, no change for men since 2017). 35% of men feel they are given either too much teaching or admin, while 20% of women feel they are given disproportionate amounts of admin only. This could well be reflecting the higher proportion of men in more senior roles in the School. On a positive note, 90% of staff (100% females and 83% of males) feel comfortable raising workload issues. In 2017 a new L&T committee was created (of which the EC Chair is a member) to discuss L&T topics, including staffing on modules.

Status: [embedded](#)

Juno Principle 5: Flexible approaches and provisions that enable individuals, at all career and life stages, to optimise their contribution to their department, institution and to SET

5.1 Support and promote flexible working practices

Our 2019 Staff Equality Survey reveals that 70% of staff feel flexible working is supported and encouraged in the School in general (80% of women vs. 67% of men), with 47% of staff (56% of women vs. 47% of men) currently using or having previously used this provision. This demonstrates that flexible working is truly embedded in the culture of the School²⁴. Only a small (10%) minority (20% of women and 6% of men) think flexible working would be detrimental to their careers; only a few staff were unaware that we have a flexible

²⁴ See p. 47-48 in the Athena SWAN Silver award application

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working policy in the School at all. These policies are also promoted to PGRs and we have several part-time and full-time research students who need to work flexibly for personal reasons.

5.1.1. Clear support from the Head of Department for flexible and part-time working

Our Dean of School uses flexible/home working himself, as he has caring responsibilities. Our DoS has taken paternity leave, and one of our Associate Deans has taken both paternity and parental leave and many staff benefit from having flexible working provisions in place (including several senior female and male staff), so this helps to normalise the use of flexible working and parental leave. Many examples of these arrangements are given in the “flexible working” section of the staff handbook.

Status: [embedded](#)

5.1.2 Consistently applied policy on part-time and flexible working

Flexible working agreements that are not public or monitored and could be viewed with suspicion, particularly any informal arrangements made. The staff handbook (wiki) is our approach to formalising our locally-adopted informal “family friendly” and “flexible or home working” policies²⁵ which stipulate the working policies and procedures for setting up or requesting informal flexible working within PAM. The staff wiki also provides a few examples of flexible working arrangements in place for staff, including senior male and female staff. The School feels this preserves the flexibility and achieves a balance between transparency and staff rights to privacy. The guidance for flexible working is currently being looked at by the EC and SEG to see that it is fit for purpose or if a more formalised approach to this is needed (such as a register). Postdocs and PGRs are less likely to need to have any formalised flexible working in place since they mainly perform research which by its nature can be done quite flexibly (except for lab or field work) and they have few or no teaching duties to work around. However, the existence of a flexible working policy sets a good example of a healthy work culture for our more junior colleagues who may be concerned about having a good work-life balance as they progress in academia.

For part-time staff the commonly cited worry (from the 2019 Staff Equality Survey) is the feeling that work needs to be caught up on time ‘off’ work, but with the positive corollary of the potential for added flexibility and allowing for more diversity. Only female respondents indicated that they worked part-time (with 60% of the women currently working or having previously worked part-time) so this mainly affects women in PAM. We have recently implemented an ‘out-of-hours’ email policy (advertised by the DoS in March 2019) stating that staff should refrain when possible from sending emails requiring any action during evenings and weekend, and that staff receiving these emails should not feel obliged to answer emails during non-working hours, to help staff develop a healthier work-life balance. This would have an even greater positive effect on part-time staff. 60% of part-time staff stated that meetings are scheduled at times they can attend, with 40% stating they are usually (but not always) in core hours. The EC will present these survey results at the next school meeting and endeavour to stress the message that meetings and development sessions should be scheduled only within core hours (which PAM has already adopted as a policy) and that consideration to part-time workers should be given when scheduling meetings or working deadlines.

Status: [embedded](#)

5.1.3 Promote the benefits of flexible working for both women and men, particularly for those with caring responsibilities

Flexible working has been part of the PAM culture for some time and is highly valued, but has been recently more formalised for transparency and accessibility reasons via a written policy in the PAM staff handbook

²⁵ Our Athena SWAN application outlines the flexible working approach in PAM in detail, (e.g. timetabling of teaching activities around childcare provision, etc.).

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(along with the procedure of how to access flexible working and examples of it working in practice). The 2019 Staff Equality Survey revealed a greater awareness of flexible working arrangements in the School: 68% of staff are aware of flexible working within UH/School (no gender difference; up from 51% overall in 2017), with 47% of staff (56% of women vs. 47% of men) currently using or having used this provision. The majority of staff cite that it has impacted positively on their career development and work/life balance, and still the School has continued to achieve key operational targets even with flexible working practices in place.

Action A01: Raise awareness amongst staff and students of E&D activities and positive outcomes for both men and women (in particular, (iii) add a wider range of case studies of flexible-working by men (not just women to the wiki and Equality website) – Status: **ongoing**

Action A11: Understand the basis and perceptions that part-time and flexible working delay career progression, staff experience of induction, and act to ensure that part-time/flexible working options are promoted to staff and potential applicants – Status: **ongoing**

5.1.4 Explicit support for those returning from career breaks or maternity leave

Our 2019 PAM Equality Staff Survey shows that 30% of PAM staff (41% of men vs. 22% of women) have taken some form of maternity, paternity or parental leave, and that a small minority of women and men did not feel well supported by the School either before, during or after their leave. The main reason stated was a heavy administration or teaching load on returning from their career break. In response, as of March 2019 PAM has implemented a new explicit workload tapering policy for career-break returners, stipulating that a member of staff can request a reasonable redistribution of their duties upon their return, making it clear to all staff that this does not extend the period of leave nor reduce their working hours, but merely alters the mix of work they will undertake for a short timescale (Action A21). The policy stipulates a guideline of 50% overall reduction in a research-active member of staff's normal teaching and administration duties for them to reengage with research after a period of leave. The School is also committed to put in place teaching replacement cover, when possible, for staff on long, planned periods of maternity or parental leave of 6 months (one semester) or more, so as not to put undue burden and strain on colleagues. Due to budgetary restrictions this might be challenging, and the EC will continue to lobby the central Athena SWAN SAT for this to be centrally resourced (Action A20).

Action A20: Lobby the UH SAT to better support women's careers through teaching cover and carer's fund during/after leave – status: **ongoing**

Action A21: Help research-active women's transition back to work from long career breaks via teaching relief (workload tapering) – Status: **embedded/ongoing** (Policy adopted, but yet to be monitored)

5.1.5 Encourage take up of shared parental, paternity and other caring leave

The PAM wiki links to all central UH policies on these types of leave and the 2019 PAM Staff Equality Survey reveals that 72% of staff are aware of shared parental leave (vs. 51% in 2017; this improvement may be due to it having been a rather new policy at the time of the last survey). 30% of PAM staff (41% of men vs. 22% of women) have taken some form of maternity, paternity or parental leave. Several senior members of staff have taken these types of leave, which sets a good example that it is acceptable.

Status: **embedded**, but can be even further embedded and reiterated during the annual promotions seminar (Action A10)

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Juno Principle 6: An environment where professional conduct is embedded into departmental culture and behaviour

6.1 Ensure that all staff and students are aware of expected professional conduct

Our PAM Staff Equality Surveys (2017, 2019) reveal a “welcoming, friendly, and collegiate” culture²⁶. Induction activities such as the central induction, E&D, and unconscious bias training (all mandatory) are useful for new staff and PGR students who may be unfamiliar with the culture and expectations at UH/PAM. This has been enhanced recently by a bespoke departmental bullying and harassment training course held in March 2019, run jointly by our School’s HR business partner and the Equality Office (Action A22). The DoS and management do also send reminders via email to PAM staff and students when appropriate (e.g. following the widely publicised recent divisive presentation made by a certain male physicist at CERN).

As part of their registration process, all undergraduates sign up to a Student Charter, and the UH “Graduate Attributes” are integrated into each course and referred to within individual modules as part of the learning outcomes. The Student Charter and the Graduate Attributes both cover expectations of students and staff in their conduct and interactions with one another and with society. These are strongly emphasised by the programme tutors (Action A05) and student union representatives that visit and speak with students during induction week, and they are widely displayed and promoted around the university. A module taken by all students in second year (“Graduate Skills”, which includes a component on unconscious bias since 2017) is important for further embedding the idea of professional conduct at university and in the world of work after their degrees (Action A04). U/g focus groups in 2017 and discussions at EC meetings suggest that more could be done to tackle micro-aggressions, and as a result it was decided that all u/g students should also be invited to the recent PAM Bullying & Harassment (B&H) training session. Having the training delivered in-house sends a strong message to all that B&H is taken seriously within the School (even if all the u/g students do not necessarily attend).

Action A04: Ensure that E&D matters are incorporated into strategic planning in the School, and that these address students directly, not just indirectly (in particular, (i) providing E&D awareness training during UG/PGR induction, and revised here to enhance the current provision with B&H training to UG/PGR during induction week starting in fall 2019) – Status: **ongoing**

Action A05: Further promote our PAM Equality Champion as a confidential contact to staff and students – Status: **ongoing**

Action A22: Increase of awareness of zero tolerance towards B&H and how to deal with issues – Status: **embedded/ongoing** – (including to now re-survey staff and students in May to see if perceptions have changed)

6.2 Address bullying, harassment and misconduct

The University has a zero tolerance policy towards B&H and has set up a network of 10 dignity and respect advisors throughout the university, is currently revising the relevant University policy, and has offered central B&H training which the PAM Equality Champion, the former Dean and EC Chair have all undertaken.

The EC brought Juno Principle 6 to the attention of the School and to SEG, and it was decided to draft a local policy for promotion to staff and students. B&H posters were put up around the School from early 2018, and our local B&H policy, which reaffirms central policy in a PM context, has been emailed to staff and students, put in the staff and student handbooks, and provides a list of contact points both in and outside the School

²⁶ These were by far the top three descriptors out of a pre-defined list from the survey

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for raising any concerns. A female EC PGR member attended the IOP Professional Conduct in STEM workshop in Manchester on 30 August 2018 on behalf of PAM and brought back some ideas of good practice, including an idea to have a poll to gauge awareness specifically on this issue, followed up by School-wide B&H training, with annual reminders of the policies and procedures. In response, the EC organised a PAM-only 2-hr B&H training session in March 2019, and SEG agreed make this mandatory for all PAM staff and PGRs (Action A22; partially complete). The impact and further course of action to take as a School will be discussed at the next EC and SEG meetings.

Action A22: Increase of awareness of zero tolerance towards B&H and how to deal with issues – Status: **embedded/ongoing** – (including to now re-survey staff and students in May to see if perceptions have changed)

6.2.1 Ensure all staff and students are aware of how complaints of bullying, harassment or other misconduct will be dealt with through an enforceable formal policy

We held a short 3-question staff and student B&H survey at the start of 2019 (Are you aware of policies and procedures? I would feel able to report B&H? Have you been subject to B&H in PAM/UH?) and we received 100 responses; (31 staff; 69 students – 34 female; 58 male; 8 prefer not to say). Despite the efforts in the previous year to raise awareness through School meetings and follow-up emails and posters, the survey results demonstrated:

- the proportion of respondents who are not aware (or are not sure) of our policy regarding B&H is quite high: around 40% for staff and >60% for students.
- a higher proportion of female respondents are unaware or not sure about the B&H policy compared to males
- the majority of respondents have not been subject to B&H at UH, but around 20% of staff and around of 10% of students have.
- of those that have been bullied or harassed, the majority are female+other/prefer not to say
- 60% of those who have been bullied/harassed are aware of the policy and procedures, but only 40% would feel able to report without worrying it would have a negative impact.

In response to these results, it was suggested by the EC and agreed at the SEG/DoS that B&H training should be made mandatory²⁷ for all PAM staff and PGR students (not just for line managers as had been previously agreed at SEG), and that undergraduates would also be invited. B&H training was provided by the Equality Office and HR, and covered all aspects of B&H including the legislative framework and the Equality Act, what we can do if we experience or see it happening, and the resources and policies in place, and how complaints are dealt with. The attendance was approximately 90% for staff and PGRs, and several u/g students also attended (around 100 people in attendance). Materials and contact details were later emailed to staff and students for future reference. We have also recorded the session so that short excerpts/videos can be used to complement future u/g or PGR student induction sessions and/or as a resource for new staff, alongside annual reminders about the local policy.

Action A04: Ensure that E&D matters are incorporated into strategic planning in the School, and that these address students directly, not just indirectly (in particular, (i) providing E&D awareness training during

²⁷ This action has been revised from our Athena SWAN submission (which was to make the B&H training mandatory for only all line managers to start with and then roll out to all staff). But our survey results suggested we should speed up the process and try to capture everyone at once, and to follow this up with annual reminders of the policies and procedures at student inductions and staff meetings.

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UG/PGR induction, and revised here to enhance the current provision with B&H training to UG/PGR during induction week starting in fall 2019) – Status: **ongoing**

Action A22: Increase of awareness of zero tolerance towards B&H and how to deal with issues – Status: **embedded/ongoing** – (including to now re-survey staff and students in May to see if perceptions have changed)

6.2.2 Ensure there is a transparent reporting mechanism within the department to address any complaints

PAM has published advice on our staff/PGR and u/g handbooks regarding who to contact with any complaints of bullying, harassment or misconduct (which has been advertised during the B&H training, at School meetings, via emails, and posters around the School common areas). It is in line with the UH official policy which covers all forms of bullying and harassment and applies to both staff and students (amongst others). The University and PAM encourage informal action to begin with, but if this is ineffective the issue can be moved to a formal complaint under the procedure detailed in the written policy available to all UH staff and students online.

Status: **embedded**

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**Amended relevant u/g student data tables extracted from our Athena SWAN Silver award application:
disaggregated to include only Physics & Astronomy u/g statistics, as requested**

| PAM membership | Total | Male # (%) | Female # (%) | | F% Benchmarks |
|--------------------------------------|--------------|------------|--------------|-----------|-----------------------------|
| | | | 2018 | cf. 2014 | |
| Academic Staff | 46 | 39 (85%) | 7 (15%) | 8 (20%) | 18% (IOP/HESA) |
| Research Staff | 25 | 16 (64%) | 9 (36%) | 1 (7%) | |
| PGR Students (FTE) | 32 | 25 (78%) | 7 (22%) | 8 (21%) | 29% (IOP/HESA) |
| UG students (FTE) | 350 | 222 (63%) | 128 (37%) | 134 (43%) | |
| UG Maths (FTE): | 188 (54%) | 104 (55%) | 84 (45%) | 99 (39%) | 38% (ECU) 36% (IOP/HESA) |
| UG P&A (FTE): | 162 (46%) | 118 (73%) | 44 (27%) | 35 (19%) | 23% (IOP/HESA) |
| Professional & Technical (P&T) Staff | 7 | 2 (29%) | 5 (71%) | 3 (50%) | n/a |

Notes: The numbers and % are for FTEs, but P/T numbers are small so these figures are broadly representative of F/T figures

AS Table 1. Numbers and gender percentages of staff and students. Disaggregated P&A u/g student numbers were already provided in the Athena SWAN submission, but have been updated here for accuracy (shown here in red).

| Year | Full-time | | | Part-time | | | Benchmark* |
|---------|-----------|-----|-----|-----------|---|-----|------------|
| | F | M | F% | F | M | F% | Female% |
| 2015/16 | 36 | 138 | 21% | 2 | 6 | 25% | 21% (HESA) |
| 2016/17 | 43 | 129 | 25% | 1 | 2 | 33% | 23% (HESA) |
| 2017/18 | 43 | 115 | 27% | 2 | 6 | 25% | |

Notes: *Benchmark data are P&A percentages, for first-year UG only.

AS Table 6. PAM UG student numbers (all years of study) - updated in red to include only centrally-provided Physics & Astronomy UG student numbers here (cf. Athena SWAN Silver which included Maths in the tally, but we do not have the disaggregated data readily available over the same timescale). We have also included 2017/2018 P&A data here (not available at the time of the Athena SWAN Silver application).

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| Year @L4 | | Appln's | Offers | Acceptances | Benchmarks | |
|-------------|-------------|---------|--------|-------------|-----------------------------|---------------------------------|
| | | | | | UK Accept. ²⁸ | SEPnet Accept. ²⁹ |
| 2008/09 | Female | 31 | 30 | 5 | | |
| | Male | 128 | 113 | 30 | | |
| | Female %age | 19% | 21% | 14% | 20% | 20% |
| 2009/10 | Female | 24 | 19 | 10 | | |
| | Male | 147 | 128 | 48 | | |
| | Female %age | 14% | 13% | 17% | 20% | 21% |
| 2010/11 | Female | 39 | 20 | 2 | | |
| | Male | 184 | 129 | 24 | | |
| | Female %age | 17% | 13% | 8% | 21% | 23% |
| 2011/12 | Female | 49 | 42 | 11 | | |
| | Male | 294 | 214 | 60 | | |
| | Female %age | 14% | 16% | 15% | 19% | 22% |
| 2012/13 | Female | 73 | 59 | 10 | | |
| | Male | 373 | 267 | 56 | | |
| | Female %age | 16% | 18% | 15% | | 21% |
| 2013/14 | Female | 55 | 46 | 12 | | |
| | Male | 242 | 196 | 42 | | |
| | Female %age | 19% | 19% | 22% | | |
| 2014/15 | Female | 77 | 62 | 14 | | |
| | Male | 289 | 188 | 48 | | |
| | Female %age | 21% | 25% | 23% | | |
| 2015/2016 | Female | 82 | 69 | 15 | | |
| | Male | 292 | 240 | 60 | | |
| | Female %age | 22% | 22% | 20% | | |
| 2016/2017 | Female | 84 | 74 | 20 | | |
| | Male | 274 | 233 | 41 | | |
| | Female %age | 23% | 24% | 33% | | |
| 2017/2018 | Female | 66 | 59 | 11 | | 23% ³⁰ |
| | Male | 199 | 166 | 40 | | |
| | Female %age | 25% | 26% | 22% | | |
| 2018/2019 | Female | | | 14 | | |
| | Male | | | 33 | | |
| | Female %age | | | 30% | | 25% ³⁰ |

AS Table 7. UG application, offer and acceptance data, by year of entry and gender - the table has been updated to include only Physics & Astronomy percentages (2008-2014 have been extracted from our original Juno Practitioner application in 2014 - based on AMER Appendix A 2006-2010 and SRS reports 2011-2014), and have just been **updated here in red** with centrally-provided data from academic registry, and local admissions/headcount data only for the newest/current academic year 2018/2019. Data are for all Level 4, full-time students (UK, EU and o/s) on the BSc (Hons) Physics & Astrophysics programme. The School did not run an MPhys prior to 2013/14. *We note that in 2 of the past 3 years we have seen a ~30% female intake, which will need to be measured over the longer-term to confirm its significance.*

²⁸ "Accepted Applicants to Degree Courses in UK Higher Education Institutions – Statistical Report", IoP June 2012, Table 2

²⁹ SEPnet Phase 1 Report (covering Kent, Southampton, Surrey, Sussex, RHUL, QMUL, Portsmouth)

³⁰ SEPnet Diversity email list (~Nov 2018) - priv. comm. V. Benson

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| Year @ L6 | Typical entry years | Female Awards | | Male Awards | | Female % | | Average female % in entry years* (refer to AS Table 7) | 1 st +2:1 ``good'' degree benchmark** |
|--------------|---------------------|----------------------|---------------------|----------------------|---------------------|-------------------|-----------------------------------|--|--|
| | | 1 st ,2:1 | 2:2,3 rd | 1 st ,2:1 | 2:2,3 rd | Total completions | Total "good" 1 st +2:1 | | |
| 2011/12 | 2008/09 & 2009/10 | 2 | 1 | 23 | 7 | 9% | 67% | 16% | |
| 2012/13 | 2009/10 & 2010/11 | 3 | 1 | 12 | 3 | 21% | 75% | 13% | |
| 2013/14 | 2010/11 & 2011/12 | 2 | 1 | 32 | 3 | 8% | 67% | 12% | |
| TOTAL | | 7 | 3 | 68 | 13 | 11% | 70% | | |
| 2014/15 | 2011/12 & 2012/13 | 3 | 2 | 24 | 10 | 13% | 60% | 15% | |
| 2015/16 | 2012/13 & 2013/14 | 10 | 1 | 26 | 2 | 28% | 91% | 19% | 78% |
| 2016/17 | 2013/14 & 2014/15 | 7 | 1 | 16 | 9 | 24% | 88% | 22% | 79% |
| 2017/18 | 2014/15 & 2015/16 | 6 | 2 | 19 | 19 | 17% | 75% | 21% | |
| TOTAL | | 26 | 6 | 85 | 40 | 20% | 81% | | |

**Benchmark data are for Physics & Astronomy only, from HESA

AS Table 8. UG degree classifications by year of completion and gender. We have amended our original table to provide disaggregated data for Physics & Astronomy only here, and give the number and percentage of female u/g awards and "good" degree classifications, compared against the relevant available benchmarks. Since our numbers are small, multi-year totals are also provided for 2011/12-2013/14 (using data from Programme Board of Examiners Pass List from our old 2014 Juno Practitioner Application), and 2014/15-2017/18 (using new centrally provided data from Academic Registry, in red) which should be more indicative. Overall, we see an average trend of % of female completion "gap" narrowing (compared to the average % of females in relevant entry years), while the % females with good degrees has also increased on average by 10% over the same baseline, which is now well matched or exceeding the HESA benchmark.