Athena Swan renewal application form for departments

Chris Byrnes note: This is a redacted version with 2 large data appendices removed to protect anonymity.

Applicant information

Name of institution	University of Sussex
Name of department	School of Mathematical and Physical Sciences (MPS)
Date of current application	31 July 2023
Level of previous award	Bronze
Date of previous award	November 2017 (application date)
Contact name	Christian Byrnes
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Section	**Words used**
An overview of the department and its approach to gender equality	2462
An evaluation of the department's progress and issues	3037
Future action plan*	
Appendix 1: Culture survey data*	
Appendix 2: Data tables*	
Appendix 3: Glossary*	
Overall word count	5499

*These sections and appendices should not contain any commentary contributing to the overall word limit

Overall word limit: 5500 words

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Section 1: An overview of the department and its approach to gender equality

In Section 1, applicants should evidence how they meet Criterion A:

- *Structures and processes are in place to underpin and recognise gender equality work*

Recommended word count: 2500 words

1. Letter of endorsement from the head of the department

Please insert (with appropriate letterhead) a signed letter of endorsement from the head of the department.

Department of Mathematics
University of Sussex
Brighton, BN1 9QH, UK

24 July 2023

To Athena Swan committee

Re: Athena Swan Bronze renewal for MPS

I am delighted to write in support of the School of Mathematical and Physical Sciences application to renew our bronze award. Equality, diversity, and inclusion are important to me personally as well as to the culture and processes of MPS and I believe that most people can flourish in MPS, regardless of their background, including their sex and gender identity. Brighton is a famously liberal city, and the University of Sussex has five core values: kindness, integrity, inclusion, collaboration, and courage. Hence, our support for EDI values fits naturally into our local city and university communities.

We in MPS are well aware of the gender imbalance within our student and academic staff communities and take active measures to mitigate this as far as possible. Although such an imbalance is common in STEM subjects, we strive to reduce it and do not accept that this should be the status quo. We have had limited opportunities to hire new academic faculty since the last application and hence the gender balance in this group has not changed significantly. However, change is possible, and I am proud to have contributed in my own way. In August 2021 I was appointed the first female Head of the Mathematics department and in November 2022 became the first female Head of MPS, albeit on an interim basis so far.

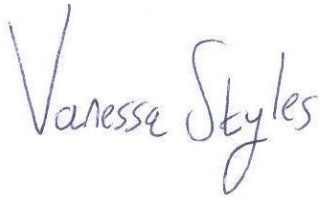
I am not formally part of the Athena Swan SAT, for which the team is requested to reflect the school demographics but became somewhat skewed towards women based on those who wanted to take part. However, I always take part in the Athena Swan/EDI meetings and have regular 1-2-1 meetings with the Athena Swan chair Chris Byrnes, who is also the director of EDI. Furthermore, both Heads of Departments are members of the SAT and I hold weekly meetings with both, in which I raise EDI issues regularly. I also support EDI work by allocating an annual budget to any relevant activities, which can for example pay for staff or students to attend EDI events. MPS is a member of the South East Physics Network and they host several EDI focused events per year.

I have taken active steps to promote the Culture Survey and am pleased to see that in most areas the majority of the MPS community are supportive and happy with the sorts of measures we are taking. For example, we have installed a small fridge which is only used for breast milk in the staff room, we have joined the period dignity project, and we are always supportive of requests for flexible working, which are especially important for those with caring responsibilities. We run an annual promotions workshop with HoS support, and in the current round the promotions committee was almost exactly gender balanced. It's notable that a much larger fraction of academic staff has reached professorship than would be expected in other groups at this university. When judging applications for promotion or the discretionary pay review, we take into account not only performance but also the five Sussex core value, by judging people's behaviours as well as their outcomes. We also pay special attention to anyone with exceptional circumstances, which based on the current round is disproportionately likely to be the case with women (e.g., due to caring responsibilities).

I believe that our support for the Athena Swan award fits naturally into the values of MPS and that it will help us act towards our goal of embracing diversity in all its forms. I am pleased that the SAT contains members from all areas of MPS, including PhD and undergraduate students, HR, professional and technical service staff, and a broad range of academic faculty.

In reading this application, I trust you will understand that we are generally a friendly school embracing progressive values making real efforts to recognise specific issues within MPS and coming up with concrete steps to solve them. The Athena Swan SAT have my full support and I will do my best to help them reach their goals.

Yours faithfully,



Professor Vanessa Styles

Head of School Mathematical and Physical Sciences

University of Sussex

2. Description of the department and its context

Please provide an introduction to the department.

The University of Sussex is a campus-based research-intensive university situated at the foot of the South Downs National Park near the vibrant and diverse city of Brighton. The School of Mathematical and Physical Sciences (MPS) resides within the university as one of its smaller schools. MPS contains two academic departments housed in the same building – the Department of Mathematics and the Department of Physics and Astronomy. Both are supported by the in-house team of Professional Service (PS) and Technical Service (TS) staff.

Brighton is widely recognized as one of the most LGBTQIA+ friendly cities in the UK, with 10.7% of the over 16 population identifying as lesbian, gay, bisexual+ according to the 2021 census - the highest in the UK and three times the national average (https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/sexuality/bulletins/sexualorientationenglandandwales/census2021). The culture survey response shows this diversity is reflected within MPS with 12% of respondents identifying as not-heterosexual and potentially many more, given that 17% preferred not to say (figure 1.4.2). This diversity is also reflected and championed within the university community, for example by holding events focused on minorities, including LGBTQIA+ inclusion. The city's ethnic diversity remains more limited, though, as is reflected in student and staff demographics.

The school is led by Professor Vanessa Styles since 2022. She is the first female head of school for MPS and was previously the first female HoD for mathematics. She succeeded Professor Peter Thomas (appointed 2021). Prior leadership included Professor Philip Harris, HoS during the last Athena SWAN application in November 2017. Key decisions around strategy and finances are informed by the School Management Team (SMT), which meets monthly and is chaired by the HoS. SMT includes active participation from the school's Director of Equality, Diversity and Inclusion (EDI), who also sits on the university-level Athena Swan SAT. Workload allocation is done in a transparent way at the departmental level.

Like many STEM departments, MPS has a gender imbalance skewed toward men among academic faculty and students, though not PS staff (which is skewed towards women). The school recognizes this imbalance and has actively worked to improve gender diversity and inclusion through initiatives like targeted hiring practices, family friendly policies, and supporting women's professional development. While progress has been slower than hoped and budget constraints limited recruitment, the school remains committed to advancing gender equity.

Both the school and university have had numerous changes of leadership in the last 6 years (notably the university has its first female VC – Sasha Roseneil) as well as significant disruption during the Covid pandemic. Fears about the financial viability of the university and especially certain schools such as MPS (strongly disputed by UCU – and there have been regular strikes held at Sussex) led to the threat of compulsory redundancies voluntary redundancy schemes, which led to a loss of staff. Fortunately, there were no compulsory redundancies, and the school is now in a stronger financial position, partly thanks to an extremely popular data science MSc attracting many overseas students. However, there are now serious workload

concerns with excessive workload being highlighted in the last staff survey (held October 2022) as being the biggest concern among academic staff.

The University of Sussex has emphasized diversity, equality and inclusion as core values, including establishing a PVC for Culture, Equality and Inclusion. The university holds a Bronze institutional Athena SWAN award and supports an inclusive campus culture. MPS is active in outreach (with an outreach officer) and our significant team of student outreach helpers has an excellent gender balance. By building on these foundations and learning from past challenges, MPS hopes to make its school an ever more equitable, diverse, and supportive environment for all students and staff.

3. Athena Swan self-assessment process

Please provide an overview of who was involved in the preparation of this application, how it was prepared, and what plans are in place to support the department's future gender equality work.

The SAT which undertook the renewal process are shown in the table below. This was transparently set up, with an open invitation to all in MPS, together with proactive steps taken to ensure there was a balance of seniority, genders, students and representatives from both PS and TS. The SAT spans both HoDs, the Assistant Operations Manager of PS, the head of TS and two PhD students plus two taught students. There is a representative from HR and the Dignity and Respect and EDI champions. There is a balance between people from the two departments, with somewhat more from Physics and Astronomy reflecting the fact that it is larger. Although not part of the SAT, the HoS has shown personal commitment by attending many Athena Swan/EDI meetings and holding useful 1-2-1 meetings with the DEDI. The SAT has people on a mix of permanent and fixed term contracts and several parents and those with caring responsibilities. All MPS staff were emailed a brief version of the new action plan and asked for comments.

Name (pronouns)	University role(s). Contract type if not permanent and full time	AS/EDI roles	Relevant experiences/circumstances
Lily Asquith (she/her)	Senior Lecturer in Physics.	Early Career Researcher representative	EDI chair for the NOvA experiment at Fermilab. I have lived experience in managing caring responsibilities (single parent, single parent student, main carer for adult family members with physical disability,

			chronic illness, mental illness, addiction), workplace culture particularly from ECR perspective, tackling bullying, sexism and sexual violence.
Christian Byrnes (he/him)	Reader in Physics	Director of EDI and Athena Swan Chair for MPS	Has a 1 year old baby with joint caring responsibilities
Conor Boland (he/him)	Lecturer in Materials Physics	Deputy Director of EDI for MPS	Has a young child
Cassandra Churchwell (she/her)	Senior Technical Manager	Technical Services advisor	EDI Champion
Geraldine Gallagher	Human & Social Data Science MSc student	Student representative on SAT	Mature student and parent
Peter Giesl (he/him)	Professor in Mathematics, Head of Department of Mathematics	HoD advisor to AS	Lives with wife and 3 school age children
Aline Amorim Graf (she/her)	Research Fellow, Physics department. Fixed term contract.	PDRA advisor to AS	Was previously a PhD student at Sussex
Patrick Heath	Assistant HR Business Partner, Human Resources. Fixed Term contractor.	HR advisor to HR	
Stephan Huber (he/him)	Professor in Physics, HoD of Physics and Astronomy	HoD advisor	
Helen Ticktin-Smith (she/her)	Senior Research Project Officer (Materials). PS staff. Part Time, 0.5 FTE.	Administrative support for any aspect of the Athena Swan process and application.	Volunteer Dignity and Respect Champion. Physically disabled with particular interest in seeing access and support widened to recognise/include the needs of all of us who come to work on campus.
Jess Lock (she/her)	PhD Student and Doctoral Tutor in Physics	PhD advisor to AS	
Oluwaranti Mercy Oni	MSc Data Science Student	Postgraduate (taught) and	MPS international student rep, with an interest in equality,

		international student advisor	diversity and inclusion
Minmin Wang (she/her)	Senior Lecturer in Mathematics	Department coordinator for EDI. In charge of most data analysis.	
Caley Yardley (she/they)	PhD student and Doctoral Tutor in Physics	PhD and transgender advisor to AS.	An out and visible transgender woman with undergraduate physics experience both pre- and post-social-transition.

SAT process: The SAT (as well as many previous attendees of AS/EDI meetings) have had their work informed by their own lived experience in MPS and science as well as the gender data and culture survey data in the appendices. Previous university staff survey has also been used and the DEDI was also in charge of leading the response from MPS to the last staff survey. SAT members were encouraged to discuss with colleagues to try to reflect their community as far as possible. As highlighted below, small number statistics and confidentiality requirements mean that data analysis cannot be provided about ethnicity, intersectionality, disability. Whilst respecting the feedback on the previous application, we believe that not all data gaps can be usefully filled in a small school. We are also conscious that data collection often falls on the lowest paid (predominantly female) staff. Nonetheless, we remain committed to providing SMART goals as far as practicable. We agree with the advice that we should avoid using a deficit model and aim for an environment and culture which is inclusive to all.

The culture survey

The MPS Cultural Survey took place between the 25th of April to the 9th of May 2023. The survey was an online format via Qualtrics and was disseminated in abbreviated form to the staff of MPS through email. In accordance with the "Transformed UK Athena Swan Charter: Athena Swan University Survey Guidance", the composition of the survey was a blend of the seven core questions and the other 21 suggested questions. The survey was broken into the six suggested themes. To understand the statistical makeup of the respondents of the survey, and thus the school, a seventh section entitled "Identity and Demographic" was added. This question theme investigated the diversity of MPS, and through it, present data with regards to responses in the seven question themes as a function of Sex and Department. This data is presented in Appendix 1.

All MPS staff were invited (and strongly encouraged) to fill in the Staff Surveys and Culture Survey. Staff and students are also invited to take part in regular AS/EDI meetings. PhD students who tutor are treated as staff and included in the surveys. There is also feedback via department/school and SMT meetings.

Overall, there were 65 respondents for the culture survey (although some did not fill in all parts, meaning the totals may be less than 65). The overall response rate was 38%, comparable to previous staff surveys. When asked for their sex (figure 1.4.1), 34 ticked male, 18 female and 13 prefer not to say (PNTS). The response rate from males was 52%

compared to them representing 76% of all staff, while a 28% response rate from females is comparable to 24% of MPS staff being female, meaning they were proportionately more likely to respond. This is consistent with women being more likely to join the SAT. However, one must be cautious about these figures since a substantial 20% ticked PNTS. The small size of MPS mean that while the data can be meaningfully split between the two departments or by sex (as we have done), making a split by gender, ethnicity (figure 1.4.6), department and sex (figure 1.4.4), or studying intersectionality was unfortunately impossible without risking individuals becoming identifiable.

Figure 1.4.5 shows that 70% of PS respondents were female while 67% of academic respondents were male, while figures 1.4.7 shows that there were a good number of respondents at each job level (pay grade) but figure 1.4.8 shows that most respondents on lower paid grades are female whilst level 10 (professoriate) is the most male dominated.

Departmental comparison: Most respondents identified as working for a department, with 12% saying their role is not department specific, of whom all are PS staff (figure 1.4.3). Maths had fewer respondents (6), equally split between men and women. The maths department has far fewer PhD students and PDRAs, even when measured relative to faculty numbers. For the physics department 74% of the 38 total counts were male, 21% were female and 5% PNTS (figure 1.4.4).

The comparison is shown for the 7 core questions in appendix 1.2. These show that the maths department was more satisfied in response to each question. However, these are small number statistics and several previous staff surveys have shown the maths department to be less happy, perhaps due to having had a HoS from the physics department or because the maths department was perceived to be under more threat during the financial squeeze during Covid. Therefore, the action plan normally applies equally to both departments.

EDI implementation: MPS supports EDI work in many ways, including allocating 0.1FTE to the DEDI (with smaller allocations to other key members), proving a £1000 annual EDI budget and generous school office support. The Athena Swan and EDI meetings are normally held as one 2-hour event and there are normally 3 per year. Meetings are normally held in a hybrid formal and during “core” working hours (10-16) to be as inclusive as possible. The school office provides secretarial support and both HoDs plus HoS and the heads of PS and TS normally attend, even if they are not part of the SAT. The meeting has representation from all levels and is always advertised openly to all staff members of the school for transparency. Turnover occurs regularly especially amongst more junior members, and we hold regular calls for new members. Our previous Bronze application was led by Yuliya Kyrychko who was succeeded as DEDI by Max Jensen who has since left the University of Sussex. Having experienced how the turnover of the DEDI and deputy DEDI have made implementation harder we include AP 4.1 (see sections 2.2-2.3) to ameliorate this. Plans for evaluating and updating the action plan are mainly covered in section 2.2. The DEDI also takes part in the university AS SAT and uses this process and contacts made to learn best practise to feedback to the MPS SAT.

Section 2: An evaluation of the department’s progress and issues

In Section 2, applicants should evidence how they meet Criteria B and D:

- *Progress against the applicant’s previously identified priorities has been demonstrated*

- *Evidence-based recognition has been demonstrated of the key issues facing the applicant*

Recommended word count: 3000 words

1. Evaluating progress against the previous action plan

Action number	Issue identified	Actions	Outcome	RAG rating
1	Reduction in applications from women for Foundation Degree	Investigate reasons for reduction in female student numbers Organise a STEM Day with local schools to attract more female students	Data no longer support reduction. Funding for workshop secured; workshop cancelled due to Covid	A
2	Year-on-year decrease in female applicants accepting offers	Interview university and departmental admissions teams to identify why students declined offered places	Comparable rates of declined offers for female and male students	G
3	Encourage more girls to study Mathematics and Physics at A level (only 38% of girls currently study A-level Mathematics and 20% Physics)	Design two real-life masterclasses aimed specifically for schoolgirls and trial them with a number of local schools to assess their efficacy in influencing girls to choose Mathematics/Physics at A-level Develop online activities for girls in both subjects, and run them in collaboration with a number of local schools Review efficacy of masterclasses	Outreach activities were run with local girls school Online activities on mathematical modelling developed and run.	A

		and online activities, identify the most successful, and roll them out to include more schools	Review not held.	
4	Desire to further increase proportion of female undergraduate students	Collate feedback from organisers on Open Day activities and ambience to better meet the needs of female applicants Data collected and analysed to understand the perceptions of applicants with regards to studying Mathematics and Physics and Astronomy in Sussex Continue analysis of applicants vs acceptance by gender	DEDI met School directors of Admission and Student Experience. Proposal of developing "Graduate stories" were not pursued Analysis has taken place; currently the acceptance rates are comparable for males and females.	A
5	Continuous reduction in women applying to postgraduate taught courses in Mathematics	Collate feedback from organisers on Open Day activities and ambience to better meet the needs of women applicants	The reduction has ended.	G
6	Need to increase the number of female undergraduates who apply for PGR courses	Send annual reminder to level 6 & 7 supervisors to talk to and encourage strong female UG students to apply to PGR courses	DEDI send annual reminders to supervisors International Women's Day activities	G

		School to run inspirational workshops on PhD study and academic careers Introduce a termly Athena SWAN newsletter for all UG&PG students	happening annually AS information included in weekly MPS round-up	
7	Male students relative underachievement in Mathematics UG level	Academic Advisers to increase their continuous involvement with students identified as weaker at end of Year 1	All students have a named individual they can contact about any issues they may have Attainment gap currently widening	A
8	Need to increase number of female applicants for all future posts in the School and ensure that our job ads are reaching potential women applicants	Proactively target women applicants through personal contact and women- only mailing lists such as Daphnet	Panels reaching out to suitable female candidates Job ads written in gender neutral term s Female applicant numbers still low	A
9	Follow and implement the recruitment policy of the university for senior appointments	Follow and implement the recruitment policy of the university for senior appointments	University recruitment policy followed Mixed gender panels for lectureship appointment	G

10	Additional support for female staff focused on key transition points	Run annual MPS School promotion workshops with an emphasis on Senior Lecturer-Reader and Reader-Professor transition Review workshop outcomes with SAT committee	Workshops take place annually and are well attended Review took place and workshops concept developed to meet needs	G
11	Only 63% of staff report understanding how an application for promotion is evaluated by the University	Information on staff promotion pages will be checked for completeness Promotion workshops react to issues raised by staff	University webpage on promotion now main point of information Uni process has become more transparent. Better process for exceptional circumstances. Since 2023 the DEDI also sits on the panel.	G
12	Recruitment of female PhD students	Final year project supervisors to encourage female students to apply Develop careers events designed to build students confidence Revision of induction material for all final year UG students to	DEDI sent annual reminders to faculty. Annual events run on International Women's Day Information on PhD part	A

		include information on PhD research	of Career advice Women only 1/5 of all PhD students.	
13	Identify issues preventing a successful conversion from non-permanent postdoc/Teaching Fellows positions to Lectureship level	Ensure staff does not get trapped in zero-hour contracts Help those on fixed-term contacts to move to a permanent basis	No zero-hour contracts in the School All new recruits assigned a mentor on arrival. Professors are encouraged to support this.	G
14	Provide additional support to pregnant and breastfeeding staff	Allocate an office available for pregnant staff to rest, and it can also be used for breastfeeding and expressing	A room with fridge to store expressed milk is designated and used as/when needed by pregnant staff to rest and breastfeed.	G
15	Improved communication with Research Staff to prevent women potentially leaving at these grades	Promote the Mentoring Circles scheme for postdocs Establish Research Staff forum	Mentoring Circles operating with volunteers from MPS Research staff forum now running School now has an Early	A

		Establish a fully operational School- wide mentoring scheme for Research Staff Introduce role of research staff rep	Career Research Representative	
16	Increase number of women appointed to permanent positions (Lecturer and above)	1-2-1 Coaching Offer training in teaching in higher education Masterclass on “Public Speaking and Communicating your Research”	All new recruits assigned a mentor on arrival. Professors are encouraged to support this. Training on teaching offered in the School. University runs several trainings on communication skills.	A
17	Appraisers may not have sufficient training	All appraisers will complete appraiser training, along with Equality & Diversity training Review appraisal guidelines and forms to improve quality of appraisals	Policy implemented that all appraisers receive training New university appraisal process to start in Oct. 2023	G
18	This action has been dropped			N/A
19	This action has been dropped			N/A
20	Increase women representation on key	Composition of Undergraduate Exam Board in	Balanced representation on	A

	committees whilst avoiding role overload	Mathematics and Admissions for Physics and Astronomy reviewed by gender	departmental committees, but role overload still an issue.	
21	Ensuring our newly established workload model delivers equality & diversity outcomes	Monitor formal workload model by gender	HoDs annually review workload by gender.	A
22	Making sure that potential staff and students know about our positive School culture and working practices	Update our externally accessible School Athena SWAN webpage Introduce Well-being champions who pro-actively support a positive School culture	Information available to potential students and job applicants Well-being champion recruited and has been organising regular events.	G
23	Wide range of outreach activities are taking place but need to clarify which have most impact	Monitor outreach activities to ensure transparency, gender balance, and to encourage wider participation	Initial review held in 2018. No further review held.	A
24	Staff and students are not trained to react to discriminatory behaviour by others	Offer Bystander Intervention Training to students and staff	Training is offered, take-up rate is currently low.	A
25	Effective transitioning from part-time to full-time work	Develop an MPS policy for effective transitioning of staff from part-time to full-time work	There is a university wide policy. At least 80% of staff requesting a change from PT to FT work have	G

			their request approved.	

Overview of the progress achieved in implementing the previous action plan

Progress in achieving an improved gender balance in the School presents a mixed picture. On the one hand, several positive actions have been implemented as part of the previous action plan, leading to a better gender balance in some areas. On the other hand, data indicate that gender ratios have remained stagnant in most key areas (such as undergraduate students and academic staff) over the past five years, and they remain far from equal. Whilst we are unfortunately yet to see significant shifts in our gender demographics as a school, there are some signs of improvement in our undergraduate and PhD student population. We have made meaningful changes that may translate into improved gender equality longer term. Issues slowing progress include frequent change in personnel within MPS PS staff and the Athena Swan team and external disruptions caused by Covid, as discussed elsewhere. We highlight the following areas.

Outreach and Open days

Addressing the issue of underrepresentation of female undergraduate students (Actions 1-4), MPS has developed a wide range of outreach activities aimed at schoolgirls. For instance, the maths department has been running activities with a local girl's school (Davison high school) for the past two years, and they secured funding from the London Mathematics Society to organise a Girls in Mathematics Event, which unfortunately had to be cancelled due to the Covid lockdown. The Astronomy centre secured an STFC Spark Award to support Guide Stars, designed to engage members of the Guiding community (who all identify as female) with astronomy and space science, holding 2 events during 2019 but further events were cancelled due to Covid. During Open days and Applicant visit days, MPS selects a gender balanced student team, based on feedback from the School Admissions team (Actions 4 & 23). Female academics are encouraged to participate in these events, but workload management needs to be taken into consideration. Since the last award, the School has seen more female students applying and being offered a place to study a PhD with us (Actions 6 & 12, **Error! Reference source not found.**). Furthermore, the decrease in female UG applicants accepting offers (Action 2), has been reversed, and the acceptance rates are now similar for female and for male applicants (**Error! Reference source not found.**). Similarly, the proportion of female applicants for our PGT courses in maths have remained stable around 35% (Action 5), while the absolute numbers almost doubled since 2016 (**Error! Reference source not found.**).

Academic advising and engaging with students

Academic advisors in maths and academic advisors and/or year convenors in physics serve as the first point of contact for students. Year convenors partake in regular meetings with student reps to ensure students are being listened to and liaise with module convenors (Action 7). DEDI sends annual reminders to final year/MSc project supervisors, urging them to consider whether their students are suitable for a PhD programme (Action 6). This initiative resulted in at least one female student pursuing a PhD who lacked confidence and would not have applied otherwise. MPS

has organised activities on International Women's Day to highlight successful careers in STEM enjoyed by women scientists (Actions 6 & 12).

Disseminating Athena Swan information and the EDI champion

Since the last award, MPS has appointed an EDI/well-being champion, who organises regular events such as boundary walks (Action 22). MPS have set up an environment, morale and wellbeing working group to which all can apply for seed funding to set up a group. One recent success was a football club we supported, who organised a student's vs staff charity football match which raised an incredible £1,000 for Macmillan Cancer Support. Crafting activities offer a less sporty alternative. The School Athena Swan webpage serves as a platform for disseminating information, and it is accessible externally. Internally, both the MPS news Padlet, which is distributed to the staff, and the regular MPS round-up, which reaches all students, contain AS information (Actions 6 & 22).

Promotion, recruitment, and transition to permanent positions

Since 2019, promotion workshops led jointly by the DEDI and HoS take place (Actions 10 & 11). The DEDI now takes part in the promotions panel and ensures individual circumstances are fully accounted for (action 10), which disproportionately impact women. The use of zero-hour contracts has been eliminated since the last award (Action 13). In a positive development, the percentage of female staff in permanent positions at MPS has increased from 20% in 2016/17 to 24% in 2020/21 (**Error! Reference source not found.**). MPS also offers a "Starting to Teach" training course for postgraduate researchers and ECR to help them develop their academic careers (Action 16). New academic staff are offered a mentor and the university organised a mentoring circle for early career researchers (partly aimed at helping them get promoted) and many from MPS volunteered to be mentors (with a good gender balance), including the DEDI (Actions 15, 16). MPS follows university recruitment policies of mandatory unconscious bias training and having a gender diverse panel (Action 9).

A subgroup of the Environment, Morale and Wellbeing working group led a review about the annual appraisals with the aim of improving satisfaction with this process (measured via the Staff Surveys, Action 17). However, the university in parallel ran their own review leading to significant changes for the upcoming round. A major new feature is that this will include several follow up meetings during the year to help mentor performance. Another positive development is the new scheme includes

> *All conversations should include … a discussion around development, wellbeing and EDI considerations. (https://www.sussex.ac.uk/organisational-development/planning/adr).*

Representation in key committees and workload

MPS maintains a gender-balanced representation in most committees (Action 20, **Error! Reference source not found.**). The exam boards have a poorer gender balance, but they deal with anonymised data which carries no gender information. Workload is monitored by the HoDs (Action 21) and the data is shared with all departmental staff. The latest data (2022) show that female academics in physics spend on average 755 hours on recorded teaching and administrative duties, against an average of 768 hours across the department. In mathematics (excluding the

HoS), the numbers are 860 hours among the females compared to an average of 837 hours.

Support for pregnant and breastfeeding staff

Since September 2019, a designated room with a fridge reserved for baby milk has been made available for pregnant and new mothers (Action 14).

Actions undertaken outside the previous action plan

Several actions have also been implemented that were not initially part of the action plan, including:

- Encouraging and facilitating staff to include their preferred pronouns on their official university profile, door signs, and email signoffs.

- Avoiding scheduling meetings outside of core working hours (10-16h) whenever possible, to better support staff with caring responsibilities.

Alongside the progress mentioned above, several issues have been identified. Despite a modest increase in female applicants for postgraduate physics degrees, the proportion of female students studying at MPS has not shown significant improvement (Actions 1, 3, 4, 12,**Error! Reference source not found.**,**Error! Reference source not found.**,**Error! Reference source not found.**). Improved monitoring is needed to understand the impact of our outreach activities (Action 23), but this is hard to effectively implement. The current academic advising system has not addressed the widening gender attainment gap amongst undergraduates (Action 7). The proportion of female students graduating with good honours (first and 2i) has steadily increased from approximately 80% to around 90%, the numbers for male students have remained relatively stable around 80%. Regarding academic appointments made over the past five years, data show that female applicants constitute only 20% of applicants, which is not increasing (Action 8).
Thanks to lobbying from the DEDI, bystander training has been made available to all university staff via an online platform and students are expected to undertake some basic training (action 24). HR records show 8 staff have a transitioned from PT to FT work since 2017 and there is no record such requests being refused (action 25).

Past and current DEDIs and the SAT played a central role in driving the implementation of the action plan, working closely with other key personnel in the school management. To track progress on each action, an online spreadsheet was used, which allowed for real-time monitoring and transparent evaluation. Regular AS/EDI meetings open to all MPS took place, up to four per year. The achievements and challenges to the action plan were discussed and assessed. The implementation of our self-assessment process has brought to light various issues with the previous action plan. Actions 18 and 19 were removed, as they did not bear significant relevance with AS aims. The rationale behind the original Action 24 was also questioned, leading to a complete overhaul. Furthermore, expected outcomes were

reassessed and modified. For instance, original targets such as achieving a 50:50 gender balance for UG students and a 20% increase in female application numbers, were considered unrealistic and outside of our control. Therefore, these targets were dropped and replaced with achievable objectives. External circumstances such as Covid and financial pressures have posed challenges to the School's implementation of the action plan.

2. Key priorities for future action

Please describe the department's key issues relating to gender equality, and explain the key priorities for action.

Data analysis (of appendix 1 data)

Student profile: Broadly speaking, there is no increase nor decrease for the proportions of female students studying UG, PGT or PGR degrees at MPS. There seems to be a slight increase in female UG students studying physics at MPS, from 20% to about 25% (**Error! Reference source not found.**). At the same time, for both UG and PGT students, female students make up a bigger proportion in maths than in physics. The UG numbers are 33-35% in maths and 20-25% in physics (**Error! Reference source not found.**,**Error! Reference source not found.**), which is slightly below the 26% national average (HESA data 2020/21). PGT numbers are 31-43% in maths and 14-28% in physics (**Error! Reference source not found.**,**Error! Reference source not found.**). For PGR students, numbers from both departments are similar, averaging around 20% (**Error! Reference source not found.**,**Error! Reference source not found.**).

Admissions: For the undergraduate programmes, application numbers have drastically decreased, from 411 in 2017/18 to 187 in 2021/22 (**Error! Reference source not found.**). Against this drop, the proportion of female applicants remain roughly stable around 30%. The acceptance rates are respectively 19.8% for females and 21.4% for males (**Error! Reference source not found.**). By contrast, PGT application numbers have almost doubled since the last application, with female applicants constituting around 37% of applicants (**Error! Reference source not found.**). Physics has seen a significant increase in female applicants, from 25% of all applicants in 2017 to 34% in 2021 (**Error! Reference source not found.**). The proportions of female applicants for our PGT maths degrees have decreased from 40% to 35% (**Error! Reference source not found.**). For PGR admission, the numbers appear stable, with maths having more female applicants than physics. Amongst those who accepted, numbers for the two departments are similar (**Error! Reference source not found.**,**Error! Reference source not found.**,**Error! Reference source not found.**).

Attainment: Female attainment among the UG students has improved: latest data show that around 90% of our female UG students graduated with either a first or a 2:1. By comparison, 80% of male UG students graduated with the same classifications (**Error! Reference source not found.**). For PGT students, there are improvements in both sexes and no gender attainment gap (**Error! Reference source not found.**).

Staff profile: Among the academic staff, the proportion of female staff has slightly dropped (from 23% to 19%) in the past five years (**Error! Reference source not found.**). The number of female staff has changed from 40 to 36, while male staff increased from 138 to 152 (mostly driven by a larger number of male staff on fixed term contracts, **Error! Reference source not found.**). A closer look at the data suggests that the most drastic decrease occurs among research only staff: the

school had 13 FTE female staff in research only contracts in 2016/17; that number went down to 7 in 2020/21 (**Error! Reference source not found.**). However, there is an increase for female staff in permanent positions: in 2016/17, female staff made up 20% of those on permanent contracts; going up to 24% in 2020/21 (**Error! Reference source not found.**). Among PS staff, overall, there is a good gender balance, ranging between 42-60% over the past five years. However, female staff make up a much larger proportion in lower grades (**Error! Reference source not found.**).

Recruitment and promotion: For academic staff recruitment, it is rather difficult to decipher the data as the numbers of interviewed and appointed staff are small. A higher proportion of female applicants leads to a higher proportion of female interviewees and appointees (**Error! Reference source not found.**). In recruiting PS staff the average proportions of female applicants, interviewees and appointees are respectively 59%, 59.5%, and 69%, although the rates become lower for positions at higher grades (**Error! Reference source not found.**). For academic promotions, apart from 2020/21 which appears to an "outlier", the proportions of applications from female staff are consistent with the overall proportion of female staff in the school (around 20%), but they have a slightly lower success rate than their male colleagues, although this is far from certain as the data set is small (**Error! Reference source not found.**).

Future action plan

We have identified the 5 new key priorities described below. Whilst the action plan requires separated goals, they are intertwined and success in one may improve other successes. Reflecting on our previous action plan, we considered it to have many Action Points (APs), some relatively vague and/or overlapping. We therefore aim for a smaller number of clearer APs. Where possible, we have created SMART goals, whilst recognising that data collection and analysis should not place an unreasonable burden on future events and the next SAT.

1. Poor gender representation in MPS: As demonstrated by the data analysis at the start of this section, there is a substantial gender imbalance within MPS at most levels (largely excluding PS staff). AP 1.1 aims to increase the female promotion rate (**Error! Reference source not found.**). Since the DEDI has been included in the promotions panel for the first time this year, better and more targeted advice will be offered, especially with regards the procedure for individual circumstances which are more likely to apply to carers (often women). AP 1.2 targets an improved annual review process. Changes are already being made but satisfaction levels need to be monitored (figure 1.3.24 shows 28% disagreed that they aided their career development). AP 1.3 will encourage all research groups to openly advertise fellowship opportunities using EDI friendly text, e.g., https://www.sussex.ac.uk/tpp/index. Since many groups grow faculty numbers primarily via successful fellowship applicants this is important for their future gender balance.

AP 1.4 recognises that invited seminar/colloquia speakers are potential role models and aims for a gender balanced representation. AP 1.5 aims for a better gender balance amongst our students, although we recognise that targeted outreach is

valuable but cannot be expected to measurably change the gender ratio in MPS. AP 1.6 seeks to provide students with a space that staff can use for breastfeeding/expressed milk storage.

2. Workload: Both past staff surveys and the culture survey demonstrate that workload is a major and arguably the biggest concern among academic staff (figure 1.3.25). Whilst true in general, certain tasks are intrinsically gender unfair given our unbalanced gender representation. A major one is sitting on interview panels for which we rightly expect gender diversity. However, this creates an unbalanced workload, especially in physics which is less gender balanced and where more interviews are held. Related issues apply to open day attendance. **Error! Reference source not found.** also shows that the committee gender balance is generally more equal than the academic balance. We therefore have AP 2.1 to include the impact of such work in future workload models. An analysis of the workload split by gender did not show an imbalance in either department, but incomplete statistics can tell a misleading tale.
Related to workload as well as mental health (figures 1.3.26-1.3.28) and valuing of EDI perspectives, AP 2.2 is for the DEDI to lobby against EDI unfriendly deadlines. For example, the universities promotion deadline was 9am on a Monday whilst a PVC position deadline was on Easter Sunday. Although there is no requirement to apply at the last minute, a lot of work does get completed at the last minute and hence deadlines placed during or shortly after a weekend may discriminate against those with caring responsibilities (disproportionally many of whom are women). In the same theme, there have been regular issues with the timetabling team being unable to meet flexible working requirements, see AP 2.3.

3. Lack of EDI awareness: As suggested by culture survey responses a significant minority of staff do not think that EDI issues are relevant to them, and/or do not think MPS takes such issues very seriously. Figure 1.1.3 shows a huge 44% of academic staff didn't think the question about whether the dept had taken action to mitigate the gendered impact of Covid was applicable or didn't know (and for females the figure was even higher at 50%). This is but one example, see also figures 1.3.6-1.3.10 about EDI questions where a huge number ticked NA/don't know. AP 3.1 aims to show (rather than say) in a practical way we care about gender issues by providing period products in most MPS toilets. AP 3.2 is to advertise our relevant champions in MPS, whose presence should be valued. AP 3.3 and 3.4 aim to provide practical EDI advice, awareness, and knowledge and to showcase the importance of this work to everyone, with AP 3.6 being specific to ECRs. AP 3.5 has the specific goal of encouraging many more people to share their gender pronouns. We intend to explain the motivation and normalise this practise, as a way to making the environment more inclusive to trans and non-binary people.

4. Achieving our APs: As explained in the previous section we could not give a green rating to as many of our previous APs as desired, with about half being amber instead. AP 4.1 aims to provide more continuity within the SAT whilst AP 4.2 aims to make transitions easier.

5. Bullying and Harassment: B&H remains a significant concern within MPS, demonstrated by the responses in figures 1.3.16-1.3.20. Figures 1.3.19-1.3.20 show that females are disproportionately likely to be unhappy with the MPS process. For the core question about how B&H is addressed by the department, figure 1.1.5

shows that 23% of academics are dissatisfied. AP 5.2 aims to explain the MPS (as opposed to university) process and raise awareness. The promotion of bystander training and a conference code of conduct should demonstrate that everyone can be part of the solution. AP 5.1 relates to figure 1.3.18 which shows that 4/6 staff who did not know how to report B&H were female.

Section 3: Future action plan

In Section 3, applicants should evidence how they meet Criterion C:

- *An action plan is in place to address identified key issues*

1. Action plan

Please provide an action plan covering the five-year award period.

Number	Issue identified and action(s)	Timescale	Action officer(s)	Desired outcome
Key Issue 1: Poor gender representation in MPS				
1.1	Low proportion of women amongst academic staff. Use mentoring and promotions workshop to encourage more people to apply for promotion, especially minority groups.	Annually for promotions workshop. Promotions workshop to continue to run annually until (at least) 2028.	DEDI/HoS/mentors	More women hired and/or promoted. The ratio of women with permanent contracts to increase from 24% to 30%. The proportion of women applying for and being promoted to increase.
1.2	Many did not find annual review helpful. Monitor change in satisfaction to new annual review process + lobby if change needed.	Annually following reviews (October deadline).	Appraisers, ECR representative, DEDI to monitor	Increased satisfaction measured via surveys. Reduce the number who found appraisal unhelpful for career development from 28% to <15% (measured via the culture survey).
1.3	Not all research groups reach a broad pool of fellowship applicants. Strongly encourage all research groups to openly advertise openings with EDI friendly wording.	Whenever applicable, start in the next academic year.	Director of research and knowledge exchange to monitor. Heads of research groups to implement this.	More open advertising of all fellowship positions.
1.4	Gender balance of invited seminar speakers may be unbalanced. Monitor balance and introduce minimum target if too unbalanced.	Request to monitor has recently been made to heads of research groups. During the 2022-23	HoDs and research group leaders who organise seminars	Gender balance is monitored and not too far from parity. Monitor the academic year 2023-24 (many speakers have already been arranged) and target a minimum of

		academic year 27% of invited Physics Dept speakers were women, with a big spread between research groups, and 17% of maths speakers we women.		30% women speakers in Physics and 25% in Maths overall for year 2024-25 (ideally already in 2023-24), with a minimum of 15% per research group.
1.5	Lack of women applying for or joining our courses. Encourage the use of open days/AVDs to showcase diversity. Run outreach events for girls to encourage them to study STEM subjects.	Annually 2024 and beyond	Director of recruitment and admissions. Outreach officer/ Director of Public Engagement.	An improved ratio of women taking our courses (measured overall). Aim for the proportion of female applicants to increase from the current 30% to 35% by 2028. Determine better metrics to measure the success of our vigorous outreach programme, such as asking new students whether outreach influenced their decision to study STEM. Continue supporting outreach targeting girls/women, such as girl guides, girls state schools and soapbox science.
1.6	Student mothers do not have a space for breastfeeding or storing expressed milk in MPS. Either make the existing space for staff also available to students or find another space.	2024	DEDI	Students with babies have access to a safe space in MPS suitable for breastfeeding. This has already been implemented in October 2023. This will be advertised via email to all students.

Key Issue 2: Workload				
2.1	Some workloads not currently counted which targets minority groups (e.g., providing gender balanced interview panels).	Starting 2023. Update: Physics has started implementing this from autumn 2023.	HoDs, HoS	All “gender unfair” work to be counted in the academic workload model. Decrease the number who disagree their contributions are valued by their department from 16% to <10% (measured via the culture survey).
2.2	Some deadlines set at EDI unfriendly hours (e.g., Monday 9am). Many deadlines are not within control of MPS, but we have e.g., successfully requested some university set deadlines be changed.	continuous	DEDI to lobby those who set such deadline and give guidelines.	All such deadlines within MPS control to be set at a more “family friendly” time. Increase the percentage who believe departmental leadership supports gender equality from 74% to >85%.
2.3	Timetabling does not always respect granted flexible working requests.	Annual monitoring when timetable is released each summer for the duration of the AS award – then review this target.	DEDI	DEDI to monitor and minimise as far as possible instances of this occurring. The exact number of such cases have not been monitored but are known to be non-zero.
Key issue 3: Lack of awareness of EDI work and importance in MPS				
3.1	Until recently no period products available in MPS. MPS joined the	Continuous stocking of free period	Student Experience Coordinator/DEDI	Period products continuously available in MPS toilets. Increase

	Period Dignity project in August 2023 – providing free period products to everyone in most toilets in our buildings.	products until 2028 subject to funding and then review as part of our next AS application.		the percentage who believe departmental leadership supports gender equality from 74% to >85%.
3.2	Lack of EDI awareness + better support for staff. Produce posters to advertise the EDI and D&R champions.	By 2024 and updated afterwards.	MPS school office	Posters advertising both champions to be visible within MPS. Increase the percentage who believe departmental leadership supports gender equality from 74% to >85%.
3.3	No MPS talks on EDI issues. Many unaware that MPS includes several staff with EDI expertise (e.g., see the table of SAT members).	Start by 2024.	DEDI to form a small organising team.	Some EDI talks from internal and/or external speakers, widely advertised and with attendance monitored. Increase the percentage who believe departmental leadership supports gender equality from 74% to >85%. Measured via culture survey + staff survey if they ask the equivalent question (this is not under MPS control).
3.4	Limited EDI training apart from automated online training. Limited awareness of what is available.	Offer a new training by 2024-25. Advertise existing offer in school meeting November 2023.	DEDI + SAT	Offer a short training led by an expert, e.g., on inclusive teaching. Aim of increased awareness of EDI work to be measured via the culture survey and/or the next staff survey and compare them to our 2023 results.
3.5	Many students and staff members do not routinely share their pronouns. We want to make doing this as easy	MPS school meeting taking place in November 2023. This	Caley from the SAT + DEDI support.	Monitor and increase % of door signs stating pronouns, whilst ensuring nobody feels compelled to do so.

	as possible and to explain its importance (but never compel anyone to do so). Hold event MPS school meeting to explain why taking part is relevant for all to create an inclusive environment.	will include guidance on how to share pronouns on door signs, zoom and Canvas.		Provide simple guidance on our internal staff webpages and pronoun stickers for people to attach to office doors.
3.6	Advertise the importance of EDI work to an increasing number of fellowships.	Academic year 2024-25.	ECR academic lead to become part of the Athena Swan SAT.	ECR to be aware of this importance, to motivate more engagement in EDI work, especially amongst ECRs.
Key issue 4: A need to meet more of our Athena Swan targets				
4.1	Large turnover in SAT between applications making it hard to meet previous targets. We note that it is standard university practise to rotate between roles every 3 years, whilst the Athena Swan application rhythm is 5 years. We will discuss with senior management whether the duration of some roles can and should be extended (provided the people in those roles are happy to continue for longer).	Before and by the next application deadline	DEDI/SMT	Encourage one of the current 3 “core” SAT members take part in the next application – being mindful of possible work overload. Impact to be determined by those taking part in the 2028 application and then reviewed – the current SAT team can confirm it was quite often hard to understand/monitor the past action plan. Provide a title to SAT members and for ECRs count hours working on EDI towards their allocation of teaching hours.
4.2	DEDI/SAT role and processes not clearly documented	Before next handover of DEDI role, which is currently due in August 2024	DEDI/deputy DEDI/SAT	Prepare a document with job description, tips, and links to all collected data. This information will be stored in a university Box folder accessible to all current and future

				SAT members as well as HoS and HoDs.
Key issue 5: bullying and harassment (B&H)				
5.1	Lack of awareness about how to report B&H. Put up posters advertising the process + Bystander training. Note the link to AP 3.2.	By 2024	DEDI	Halve the number reporting they don't know how to report B&H (to be measured via the culture survey, comparing the 2023 to 2028 results, and ideally to be measured at intermediate times via university staff surveys, but these are not under MPS control).
5.2	Lack of awareness/unhappiness of MPS B&H response. Not all conferences/workshops have a code of conduct. Athena Swan SAT to suggest and promote a code of conduct.	During 2024-25 academic year or earlier if senior management have the capacity. By summer 2024.	HoDs and/or HoS. Seek organisational development help with training. Rep. from SAT to monitor.	Hold MPS faculty event about B&H to explain our processes. Reduce by 10% the number of respondents unhappy with MPS response to B&H. To be measured via the culture survey, comparing the 2023 to 2028 results. Begin monitoring what fraction of Sussex run workshops/conferences have a code of conduct and set a concrete goal once we have such numbers.

Appendix 1: Culture survey data

Please present the results of the core culture survey questions, and if desired, the results of any additional survey questions or consultation.

THIS SECTION HAS BEEN REDACTED

Small number statistics make it impossible to share this data in a useful format while properly protecting anonymity.

Appendix 2: Data tables

Please present the mandatory data tables, and if desired, any additional datasets.

THIS SECTION HAS BEEN REDACTED

Small number statistics make it impossible to share this data in a useful format while properly protecting anonymity.

Appendix 3: Glossary

Please provide a glossary of abbreviations and acronyms used in the application.

AP = Action Point

AS = Athena Swan

BAME = Black, Asian, or an Minority Ethnic

B&H = Bullying and Harassment

DEDI = Director of Equality, Diversity and Inclusion

D&R = Dignity and Respect

EDI = Equality, Diversity and Inclusion

FT = Full Time

FTE = Full Time Equivalent

HoD = Head of Department

HoS = Head of School

HR = Human Resources

LGBTQIA = lesbian, gay, bisexual, transgender, queer, questioning, intersex, or asexual

MAB = Module Assessment Board

MPS = School of Mathematical and Physical Sciences

PAB = Progression and Award (exam) Board

PGT = Postgraduate Taught

PNTS = Prefer Not To Say (possible culture survey response)

PS= Professional Service (staff)

PT= Part Time

SAT = Self-Assessment Team

SMART = Specific, Measurable, Achievable, Relevant and Time-bound

SMT = School Management Team

SSEG = School Student Experience Group

STEM = Science, Technology, Engineering and Mathematics

TS = Technical Services (staff)

TWD = Temporary Withdrawal

UG = Undergraduate

PGT = Postgraduate Taught

PGR = Postgraduate Research

PVC = Pro Vice Chancellor