Athena Swan renewal application form for departments

Applicant information

Name of institution	Queen Mary University of London
Name of department	School of Mathematical Sciences
Date of current application	May 2022
Level of previous award	Bronze
Date of previous award	November 2016
Contact name	
Contact email	
Contact telephone	

Section	Words used
An overview of the department and its approach to gender equality	2479
An evaluation of the department's progress and issues	3384
Future action plan*	
Appendix 1: Culture survey data*	
Appendix 2: Data tables*	
Appendix 3: Glossary*	
Overall word count**	5863

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

** 500 extra words allowed to describe the impact of Covid

Table of Contents

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.

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Professor Alex Clark
Head of School

30 May 2021

Dear Head of Athena SWAN,

It is my pleasure to endorse this Athena SWAN Bronze renewal application. Following our Athena SWAN Bronze Renewal in 2016 and in line with University's 2030 Strategy, our Athena SWAN Committee broadened its remit to become the Equality, Diversity and Inclusion (EDI) Committee in 2019, adding Inclusion as one of its core values.

Not only am I a member of the EDI committee, but for a semester I also served as its chair, in accordance with a common practice at Queen Mary. This reflects our level of commitment to EDI and provided me insights into the barriers to achieving our EDI goals. However, the SMT believed the School and EDI are better served by having an independent academic as its chair, both to receive full credit for their achievements but also to have the time and different perspective to enhance our performance. The current chair of our EDI committee is one of 8 members of our Senior Management Team (SMT) and is a member of the School's Promotion Panel. This demonstrates our commitment to the AS principles, to ensuring that gender equality work is distributed appropriately, recognised and properly rewarded.

I would like to highlight some notable achievement since our 2016 award:

- We have created gender balance in our SMT which now has 4 men and 4 women. This also affects the composition of appointment panels and the general leadership image in the School.

- The number of female academic staff has grown from 17.6% in 2017/2018 (15F, 70M) to 23.2% in 2021/2022 (26F, 86M). We have achieved this by making our School more visible to prospective female applicants (the percentage of female speakers invited at our seminars has double in the last five years) and by actively recruiting female academics via our Talent Scheme.

- We have tripled the number of successful female promotions in the last 5 years. It is now also standard practice for the Deputy HoS or HoS to attend the probation and appraisal meetings of all staff. This way staff receive consistent, well-informed advice about how to best progress their careers and staff are encouraged to apply for promotion when appropriate.

- For the first time, a female Head of Research Group was appointed.

- In 2019, we hosted an LMS Women in Mathematics Day with 70 participants from other institutions.

- The School has successfully run maths outreach activities focused on A-level female students and the percentage of female PGT students has increased to 42% in the last two years.

While it has been difficult to implement further improvements in the EDI agenda over the course of the pandemic, we are now well positioned to continue the good work done so far and to make significant progress in the areas which still need development:

- the gender balance in our UG and PGR population (Priority Objective 2 and 3 in the future AP)

- the gender balance of academic staff at all seniority level (Priority Objective 1)

- the general feeling of inclusion and belonging in our School (Priority Objective 4).

Our EDI action plan is regularly reviewed at both the committee and SMT levels. This informs our School's policy and actions. Our EDI Committee's structure is kept under review to ensure it remains relevant, and we now have deputies in place for all key roles, including the EDI chair, to ensure smooth transitions for all key roles and to provide opportunities for leadership advancement.

Overall, we commit to strengthening the monitoring systems in place to improve our targeting and impact, challenging ourselves to reach the ambitious targets set out in our action plan aiming to grow from Bronze to Silver in the next five years.

Yours sincerely,

Professor Alex Clark
Head of School | Professor of Mathematics

2. Description of the department and its context

The School is one of five Schools in the University's Faculty of Science and Engineering, based on our Mile End Campus in a newly refurbished building. The building features single occupancy academic offices, a large open plan for PS staff, academic hubs, lecture rooms and a staff common room. In line with the School's commitment to the EDI principles, all academic offices are the same size.

Figure 1: School building, Mile End Road, E1 4NS

Figure 2: Staff Common Room

The School was awarded its first Athena SWAN Bronze award in 2013 which was renewed in 2016. Over this period, it has grown considerably in both staff and student numbers. As of 1 May 2022, the School comprises 133 staff members (Table 1) with the distribution of academic level and gender as detailed in Figure 3. Before the end of 2022 another 3 male lecturers and 1 female senior lecturer will join the School. At the moment, 7 academic staff members are on a part-time contract and <redacted> maternity leave.

Table 1: Current headcount of students and staff by gender (May 2022)

Figure 3: Distribution of academic level and gender (May 2022)

The number of female academic appointments decreased from 40% in 2016/2017 to 0% in 2018/2019 but increased to 28% in 2020/2021 (Table A18) with a total of 11 female academic appointments. Between 2016-2021 we had 37 academic promotions within the school of which 6 were of female academics (Table A20-A27).

The School comprises 7 research groups:

- Algebra and Number Theory
- Combinatorics
- Complex Systems and Networks
- Dynamical Systems and Statistical Physics
- Geometry, Analysis and Gravitation
- Probability and Applications
- Statistics and Data Science (added in September 2020)

These groups were established to nurture and ensure optimisation of the School's strengths in research and to proactively address the diverse opportunities in the UK research landscape. The formation of these groups was a dynamic and collective exercise to ensure that the result had the support of the majority of the School. Each group comprises a Head of Group, academic staff, associated researchers and PGR students. Heads of Group have delegated line management responsibility for academic staff in their group. The Director of Education manages Teaching Fellows, and Principal Investigators line manage their PDRAs. Academic staff are encouraged to join more than one group as secondary members if it intersects with their interests. The figure below reflects our School's management structure.

SMS Academic Staff Line Management Structure
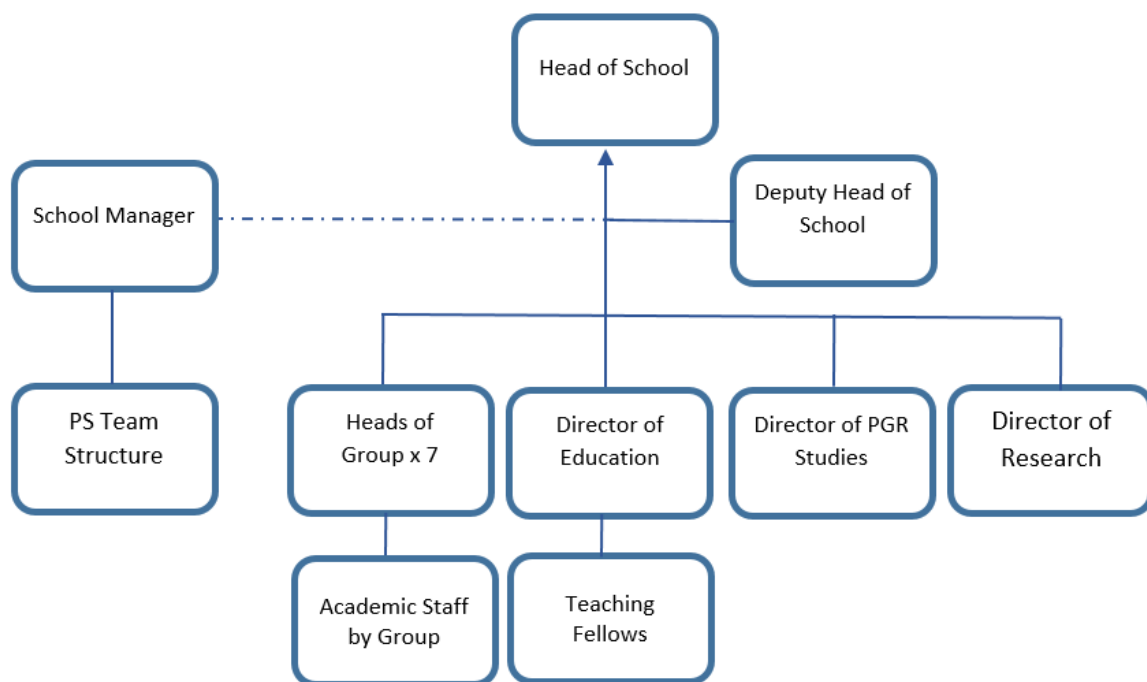
To ensure the best management and further development of our growing School and staff, a new governance structure was also implemented in September 2018 following consultation with all staff. The composition of our Senior Management Team (SMT) was widened and now comprises the Head of School, Deputy Head of School, Director of Education, Director of Research, Director of Postgraduate Research Studies, the EDI Lead and the School Manager. They are supported by the School's Executive Officer. Each of the SMT members head up a committee in their respective area of responsibility, and report back to the SMT for updates or points of escalation and strategic decision-making (Figure 4).

Figure 4: Committee Reporting Structure (May 2022)

Committee Structure
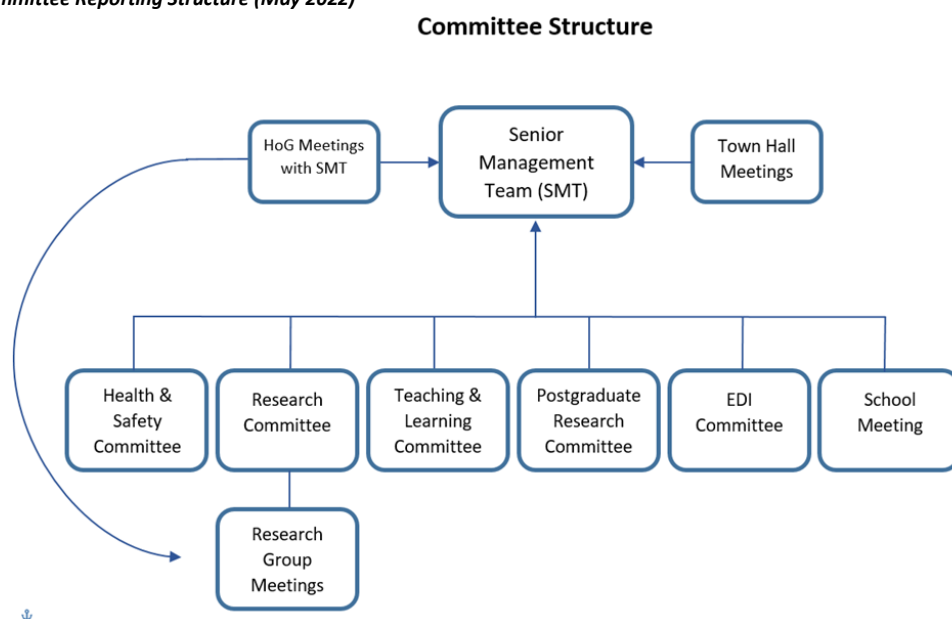
The School holds approximately 3-4 all-staff School Meetings per year which are intended to provide updates. Additionally, the SMT hosts a further 3-4 Town Hall Meetings per year; these form an open forum to which any staff members can bring items for discussion. Finally, the Head of School holds weekly drop-in sessions open to all staff.

The School has a team of 21 Professional Services staff headed by a School Manager and including support for research, HR and recruitment, finance, education services, e-learning, student support, student recruitment and outreach, and marketing and communications. For the recruitment data, see Table A28-A29.

We offer programmes at UG, PGT and PGR level, and our current cohorts comprise around 1400 students. Additionally, we offer a joint foundation course, although the number of students is small (see Table A1). The distribution of students and the gender balance at each level is reported in Table 1. In the last five years the School has invested in widening our offer at UG and PGT level, with the creation of new programmes in Actuarial Science and Financial Mathematics. As a result, from the academic year 2017/18 to the academic year 2021/22 the number of students at UG and PGT level increased by 33% and 284%, respectively (Table A2 and Table A8). We have seen a substantial increase in the percentage of female UG students attaining first class honour (+27.18% from 2017/18 to 2019/2020, Table A11-A13), despite an overall decrease of the female intake in our UG programmes by 7.5% overall (Table A2). In the last five years the gender balance of students at PGT level has fluctuated somewhat, partially due to the introduction of two new PGT Programmes in Data Analytics. At present, females make up 42.2% of the PGT cohort (Table A8).

Our PGR students form an active community within the School, engaging with research groups, attending School Meetings and participating in committees. Our current PGR community consists of 82 students of whom 24.4% are female, roughly in line with the national average. Given the small numbers, the percentage female cohort varies slightly from year to year (Table A9).

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 Athena SWAN Committee and SAT changed to the Equality, Diversity and Inclusion Committee (EDIC) in September 2019 to widen its remit and give representation to all protected characteristics. The EDIC is committed to equal opportunities, sees gender as a spectrum and recognises its intersectionality with other protected characteristics. The committee has 15 members (8F, 7M) with different grades and roles within the School (Table 2). There are 6 academics (on T&R and T&S contracts), one PDRA, 3 PhD students and 4 members of the professional services. Note that:

- <redacted> members of the committee have caring responsibilities (children of school and/or pre-school age)
- <redacted> members of the committee give representation to the LGTBQA+ community and X members are from an ethnic minority background.

The HoS is also a member of the committee to ensure the School's senior commitment to EDI issues and the implementation of the Action Plan. The committee is supported by the School's EO and the Faculty EDI Officer. The workload allocated to the EDI Lead is 320 hours per year while the Deputy has an allocation of 35 hours per year. The self-assessment of progress in advancing gender equality was undertaken by a representative team, comprising the EDI lead, deputy EDI lead, HoS, EO, SM and the EDIC. It was further informed by the wider School via the EDI Staff Surveys in 2020 and 2022.

Table 2. EDIC

The EDIC meets on average three to five times per year. Standing agenda items include reports from the Chair, reports from University and School Athena Swan and EDI activities, and discussions on selected objectives of the Action Plan. Since 2019 the EDIC meetings have been open and advertised to the whole School, to promote wider engagement with the EDI agenda. UG representatives are also invited when the meeting agenda concerns student matters. From March 2020 to March 2022 meetings were held online. In the last EDI survey (February 2022), holding such meetings in hybrid mode (in person and online mode) was described as *best suiting the needs of the institution and preferences of staff*. We have therefore switched to hybrid mode from May 2022.

In January 2022, a specific writing group was established to write the application which comprised the EDI Lead, Deputy, and Executive Officer, who met weekly until the May submission. Additional support was provided by the EDI Faculty Officer. A draft of the AS application as well as the future action plan have been shared with the EDIC and feedback has been collected during the March and May EDIC meetings.

Clear EDIC reporting structures are in place as follows:

Figure 5. EDIC reporting structure.

The EDI Lead is a member of the School's SMT, which ensures close cooperation throughout the School and expedites the decision-making process. EDI is a standing agenda item at SMT and School meetings. The EDI Lead and Deputy, as well as the Secretary of the EDIC, are School representatives at the Faculty EDIC. EDI news is shared via a monthly School newsletter (see an excerpt below).

Figure 6; Excerpt from the April staff newsletter
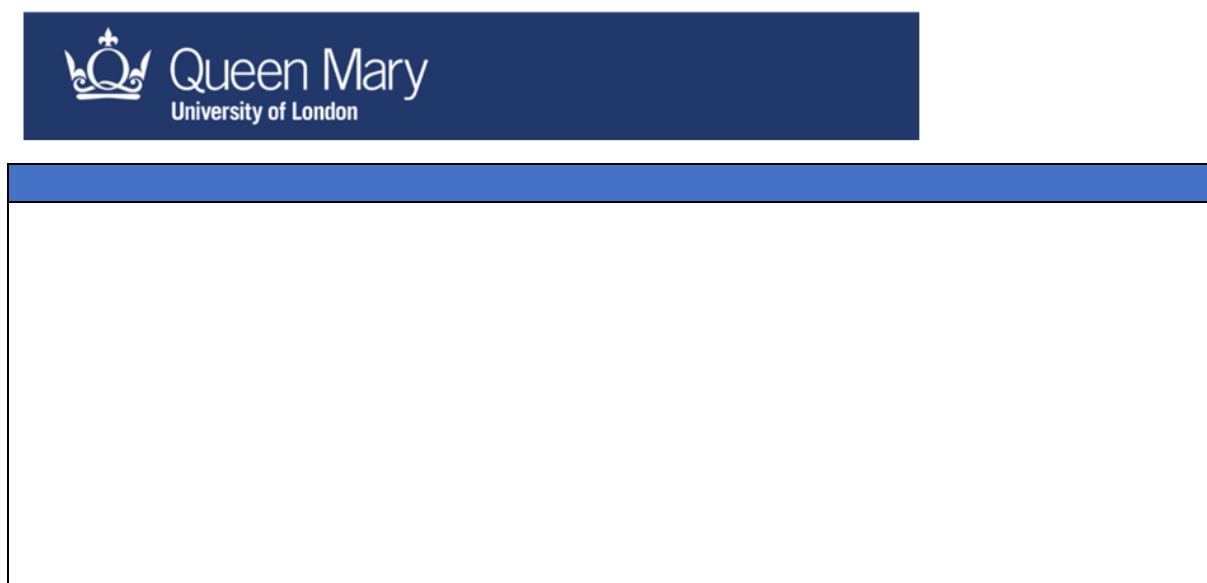
Reminders

Women's Lunches are back!

The first one of the new year took place on Friday and moving forward, all staff who identify as female and/or non-binary are invited to bring lunch and meet in room MB502 one a month.

Upcoming dates for your diary:

Tuesday 17th of May, MB502, 12:30-13:30

Wednesday 1st of June, MB502, 12:30-13:30

The School EDI webpage contains information on our committee, its vision, events, as well as signposts to HR and School policies and benefits (see Table 3).

Table 3: Current EDI policies

Leave returner policy (School policy)	To facilitate re-establishing of research momentum, academic staff returning from a period of long absence as maternity leave, paternity leave, other parental leave or sick leave are eligible for reduced (or no) admin load, reduced (or no) teaching load for an agreed period (up to 12 months) and an agreed amount of School support for visiting collaborators.
Extended maternity leave policy (School and University policy)	To support a member of staff who gave birth to a premature baby at 28 weeks the School lobbied for an extended maternity leave policy providing additional leave equivalent to the number of weeks spent in NICU. This policy **was initiated in February 2022 in the School** and extended to the whole university with all HR staff briefed to apply a consistent approach until a formal neo-natal policy is brought in in line with the legislative time-frame set out by the government.
Flexible Teaching Guidelines (School policy)	Since 2018 Staff with caring responsibilities can submit a request for Flexible Teaching. Such requests include an availability for teaching of at least 35 hours per week (or a pro-rata for part-time staff), during the hours of 9:00-18:00, Monday-Friday.
Flexible Working (University policy)	Any Queen Mary employee can apply to work flexibly by requesting a change to their contract.
Core hours policy (School and University policy)	Meetings are held between core hours (10am-4pm). Since January 2022, online meetings start 5 minutes after the hour and finish 5 minutes before the hour to allow a break before the next meeting.
Childcare Conference Fund (School policy since 2014)	The School has an annual EDI budget of £2000. Part of this budget is reserved for a childcare conference fund (up to £150 per person, per year). These small awards are

	available to PhD students, research, academic and professional services staff to help support the extra childcare costs when attending conferences and trainings.
Gender balanced panels (University policy)	The University has a policy ensuring gender diversity in all recruitment, selection and promotion panels. The EDI Lead in the School sits on the School promotion panel as well as on the PhD Scholarship Allocation panel.
Introducing Inclusion training and Active Bystander Training (University policy)	An Introducing Inclusion and Active Bystander Training (and subsequent refresher) is mandatory for all university staff.

The School takes a pro-active approach to improving gender balance in research seminars. At the beginning of each academic year, the EDI Lead writes to Research Group Heads and seminar organisers to emphasise the importance of a diverse and gender-balanced list of invited speakers. Data are collected by the School Research Manager and monitored annually (Table A30-A31).

In the next 5 years the EDIC will continue to meet three-to-five times a year. We will review our progress and actions and look for new opportunities to promote the EDI agenda, and to maintain, encourage, reward, and celebrate our best practices. We will monitor the implementation of the 2022-2027 Action Plan annually and revise it as needed to meet our EDI targets (see Figure 9 and AP for detailed actions and responsibilities).

Figure 9: Timeline of AP reviews and EDI Staff surveys

July 2023: annual review → July 2024: annual review → October 2021: EDI Staff Survey → July 2025: annual review → July 2026: annual review → October 2026: EDI Staff Survey → July 2027: annual review

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

Please provide a critical evaluation of your most recent action plan and any other actions you have initiated since your award.

The 2016-2020 Action Plan had 3 priority areas. The self-assessment team in consultation with the EDIC critically evaluated the actions implemented during the last 5 years and produced the RAG assessment below. Please refer to the old AP 2016-2020 at the end of this subsection (not included in the word count).

Priority 1: The Self-Assessment Team

Actions 1.1, 1.2, 1.3, 1.4

Actions 1.1, 1.2, 1.3 in our 2016-2020 AP were devoted to maintaining and future-proofing the SAT obtaining greater visibility at Faculty and University level. Following the feedback received after our 2016 submission, we expanded the SAT membership with representation across all levels of seniority, academic and professional staff, as well as PGR students and UG students.

In the last 5 years the School has changed EDI lead 4 times, with the current lead being appointed in December 2021. This was mainly due to changes in workload. To future-proof the SAT and ensure continuity of activity regardless of individuals (Action 1.2), the Athena SWAN role descriptor has been incorporated in the School governance, and hand-over protocols exist for smooth transitioning of responsibilities.

Since 2016, the School is represented by the EDI Lead, Deputy Lead and Secretary at S&E EDI meetings (Action 1.3). Moreover, a new cooperation with the office of the Vice-Principal for people, culture and inclusion was established in February 2022, resulting in a draft for an extended neo-natal leave policy, written by the EDI Lead and Secretary, which has been approved and shared at University level (see Table 3).

Since 2019-2020 the data for staff and students are available via a central University dashboard. The EDI Lead and Secretary both have access to staff data while the Deputy lead has access to student data. However, accurate in-house additional data are also collected by the EO and the Research Manager in the School, and have been reviewed annually since 2017. Examples include data on female percentage of applications, offers and acceptances at PGR level (Table A10) and data on seminar speakers (Table A30). This in-house record keeping has allowed us to take immediate action when needed and possible. For instance, the percentage of female speakers in our seminars dropped from 22.18% in 2018-2019 to 18.66% in 2019-2020. It was immediately brought back to 23.40% in 2020-2021, also thanks

to effective communication between the EDI Lead, the heads of research groups, and the seminar organisers (Action 1.4).

Action 1.5

To further improve awareness of and communication about Athena SWAN activities in the School, we aimed to maintain the EDI School webpage regularly and to run a bi-annual survey on staff awareness of Athena SWAN and satisfaction with EDI activities in the School. We achieved partial progress in this area mainly due to the impact that COVID-19 had on the School and the increased staff workload. As a result, regular meetings of the EDI committee were suspended from March 2020 until January 2021. A renovation of the School EDI webpage is currently in progress thanks to the close collaboration between the EDI Lead and the newly appointed Marketing and Communications Officer. The page now contains a staff world map celebrating the diversity of our staff, as well as links to useful external resources celebrating the contribution to maths of different minority groups.

Staff surveys have taken place regularly, with the most recent two in October 2020 and February 2022. In the last survey over 89% of respondents (92.3% F, 84.8% M) reported being aware of the permanent EDI committee although only 64% (69.3% F, 57.3% M) were aware of its activities. This is likely a consequence of some EDI activities being suspended between March 2020 and March 2022 (e.g. Women's Lunches) and the arrival of new staff during this time or of events being moved online (e.g. Girls in Mathematics Event). This fact also underlines the need of further improving the EDI webpage obtaining more visibility at the School and University level. This links to **Priority Objective 4** in our future action plan.

Priority 2: Student Recruitment, Support and Culture

Action 2.1

We have continuously monitored student data by gender, but the percentage of female UG students has steadily decreased from 46.8% in 2017/2018 to 39.3% in 2021/2022. The percentage of female PGT students has increased from 37% in 2020/2021 to 42.2% in 2021/2022. The School has put significant effort into organising outreach activities dedicated to female UG students and prospective students; however the high percentage of male UG students recruited via clearing has had an overall decreasing effect. This motivates the **Priority Objective 2** in our future action plan.

Action 2.2

The School has successfully supported our students by ensuring that initiatives proposed by SEWG (Student Experience Working Group), CAISE (Centre for Academic Inclusion in Science and Engineering) and other education-focused groups in the University and the S&E Faculty are advertised amongst the students and assessed in terms of their effectiveness. The EDI Lead is the School representative in CAISE for inclusive curriculum.
Overall, the percentage of 1st honours has increased from 29.15% in 2015 to 60.42% in 2020. The percentage of female students achieving a 1st has increased from 22.62% to 66.20%. See Tables A11-A13. The personal support from staff is regularly acknowledged by our students, particularly during the pandemic. One of our female students who graduated in 2020 *describes the constant encouragement of her final year project supervisor as the main reason she continued to do a Master.*

Actions 2.3

We planned to survey UG and PGT student's outlook on EDI matters via incorporating EDI questions into the existing surveys in Spring 2017 and then annually. This was not implemented based on the low student engagement in previous surveys. We need to stress

that since the move to online teaching or MME the general student engagement in teaching activities and surveys (such as NSS) have decreased substantially, and the negative impact of the pandemic in this respect is very tangible and undeniable. This links to **Priority Objective 4, Actions 4.1 and 4.3**.

Actions 2.4 and 2.5

These actions were devoted to promoting our PGT and PGR route to our UG students, to review the advertising process of our PGR studentships to ensure that part-time options are more visible, and to improve gender balance. PhD Opportunity days have been advertised to our UG and PGT students, however our UG and PGT students preferentially move to other institutions rather than continuing towards a PhD at QMUL. One of the obstacles encountered here is the limited number of research-oriented modules in year 3 or 4, or research-oriented final year projects, which would naturally inspire students to apply for a PhD. This links to **Priority Objective 3, Action 3.5**.

The advertisement of our PGR positions mentions a part-time option as well, as part of our commitment to EDI. However, the percentage of female PGR applicants has decreased from 37% in 2015/2016 to 21% in 2021/2022, although it had been stable around 24-30% from 2016 until 2019. It is reasonable to think that the uncertainty of the pandemic is the reason behind such decrease, and we hope to reverse this effect via our future actions in **Priority Objective 3**.

Action 2.6

We have reviewed our PGR recruitment and selection process, and the EDI lead now sits in the scholarship allocation panel to oversee the fair assessment of candidates. We have also recently updated all the PGR forms to ensure gender neutral language. The percentage of female PhD applicants is consistent through all stages of the process (applications, offers, acceptances, enrolments). From 2018 until 2021 offers have been in line with applications, with percentage of offers to women higher than the percentage of female applicants. Enrolments are almost in line with applications and offers. The data for 2021/2022 has been disappointing, with female applicants dropping to 21% and offers to 8%. Due to a financial cut, the School has been allocated just one PhD scholarship for 2022/2023. These are factors which are unfortunately outside our control but that strongly motivate the need for a scholarship dedicated to female students (future action 3.1).

Priority 3: Staff Development, Recruitment, Support and Culture

Action 3.1

We intended to formalise exit interviews to gain constructive feedback on experiences in the School. However, exit surveys are collected centrally and rarely filled in by leavers. Since the number of leavers per year is very small we have not been able to identify trends. Additionally, the reason for departure is usually known to managers so we have decided to discontinue this action.

Action 3.2

Since the academic year 2017-2018, to address the issue of the 'two-body problem' we have aimed to advertise academic positions simultaneously where possible. This has been a successful action <redacted>. We continue to explore similar opportunities.

Action 3.3

Unconscious bias training has been in place and mandated since 2016. The training was recently reviewed and broadened to an 'Introducing Inclusion' course consisting of an EDI module and an Unconscious Bias module. 95% of all academics and Professional services staff have completed the training which is available online. It is included as a compulsory component for all new starters as part of their induction.

Action 3.4

We have reviewed our advertisement strategy for academic posts aiming to increase the percentage of female academics. Our job advertisement are now widely shared on social media (Twitter, Linkedin, Instagram) see Figure 10.

The percentage of permanent female academic staff was 11.4% in 2017/18. It decreased to 10.1% in 2018/19 and then it stayed around 13% until 2020/2021. It is currently 15.8% (Table A.16). We cannot consider this action successfully completed but the recent increase is encouraging. The Faculty has a talent scheme to attract outstanding academics, which the School used to hire a female Reader in 2021. This has proven to be an effective tool for future female recruitment, and it links to our **Priority Objective 1**.

Figure 10: Recent job advertisement on LinkedIn.

QMUL School of Maths · 1st
School of Mathematical Sciences at Queen Mary University of London
1mo · 🌐

We're hiring!

Click the link for full details 👉 http://ow.ly/ghWx50IphQ5

We particularly welcome applications at Senior Lecturer/Reader/Professor level from people who identify as Black, Asian or Minority Ethnic groups and women as these groups are underrepresented at this level at Queen Mary.

Closing date – 20th April

#Hiring #HEjobs #UniJobs #MathsJobs #WomenInSTEM #BlackInSTEM #BlackInSTEMed #AsianInSTEM #LecturerJobs
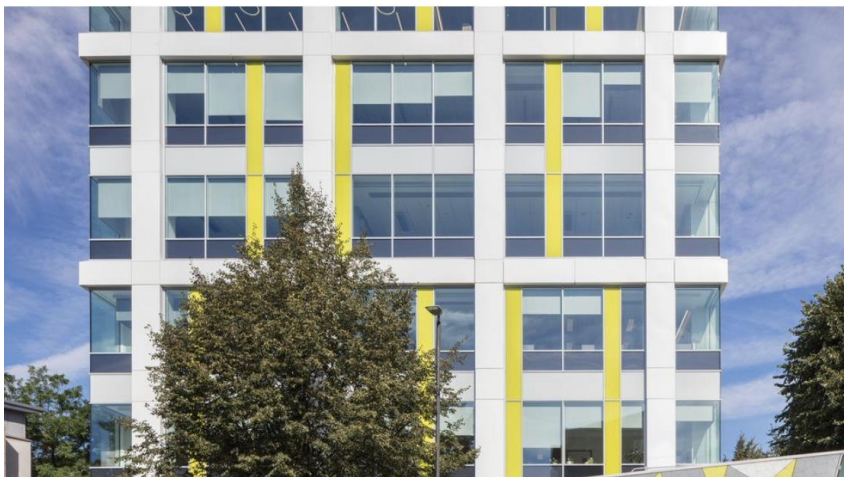
These actions were devoted to targeted career development for academic staff, integration and development of PDRAs and PGR students. These have been successfully completed through:
- the Deputy Head of School has undertaken an active role to better support the career development of academic staff through attending all appraisals and providing support and feedback to academics considering applying for promotion.

- Highlighting and encouraging participation in female leadership training programmes supported by the University (Aurora and Springboard) for female members of staff, 1 academic and 2 PS staff members have attended the Aurora programme and 1 PS staff member has attended the Springboard.

- Regular feedback on the needs of our PDRA community is provided by the PDRA-PDRF rep at Research Committee and the EDI Committee since 2018.

- Since 2016-2017 we run a seminar series aimed at PGR students dedicated to supporting the development of a range of relevant skills as job application, interview performance, etc.

Action 3.8
The internal grant application process has been greatly improved. Although we were aiming for equal success amongst male/female staff in research grant applications, the small number of female academics on T&R contracts means we cannot identify trends in success rates.
The number of grant successes per year is a relatively small number therefore a statistical analysis is infeasible. Nonetheless, we have significantly expanded the support for grant applications through:

- an annual "get that grant" workshop that includes actual case studies;

- mock interviews are arranged for all grant/fellowship applicants facing an interview as part of the selection process;

- all staff are regularly updated on all known funding opportunities, including ones for women only.

Actions 3.9-3.10
Women are represented in all committees in line with the gender balance in the School. For the first time in the last five years, we have a female Head of Group and female DoE. Two academic females sit on the School's SMT.

Action 3.11-3.12
The percentage of female seminar speakers across seminar series has increased from around 12% in 2016/17 to 24% in 2019/20. We have given better visibility to female role models via our LMS Women in Mathematics Day in 2019 and the Girls in Mathematics events that we run in April since 2019. More details about these events can be found below.

LMS Women in Mathematics Day
In 2019 we held a Women in Mathematics Day supported by the London Mathematical Society. This was a free event open to all undergraduate, postgraduate students and to early career researchers with a range of female speakers from academia and industry. It was well attended, with 70 participants from other institutions. (See Figures 11-14)

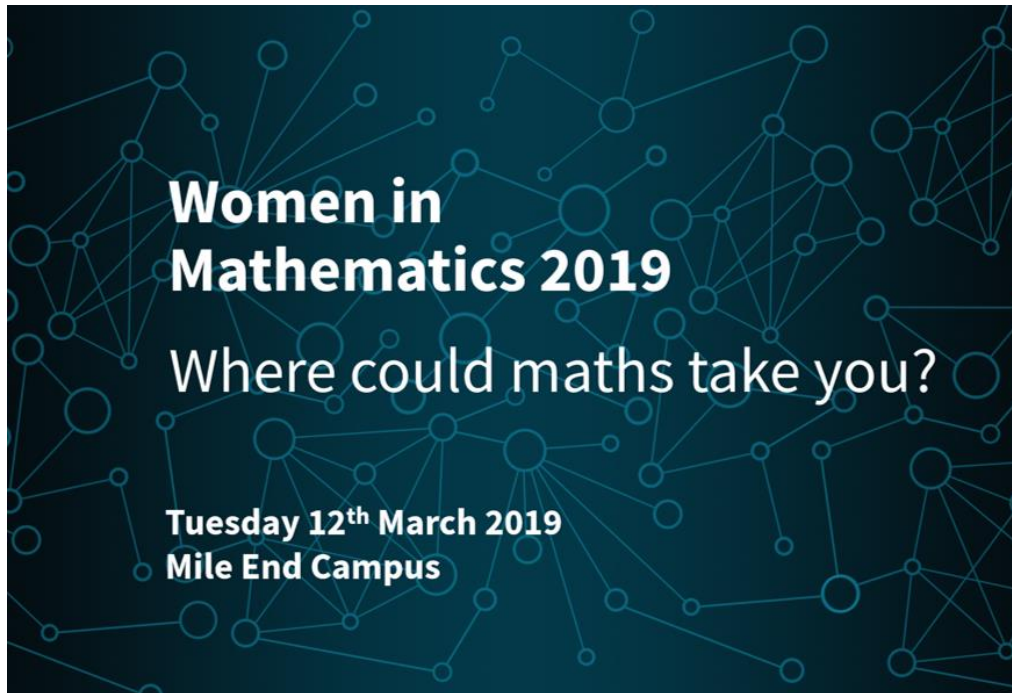*Figure 11. Women in Mathematics 2019 poster.*

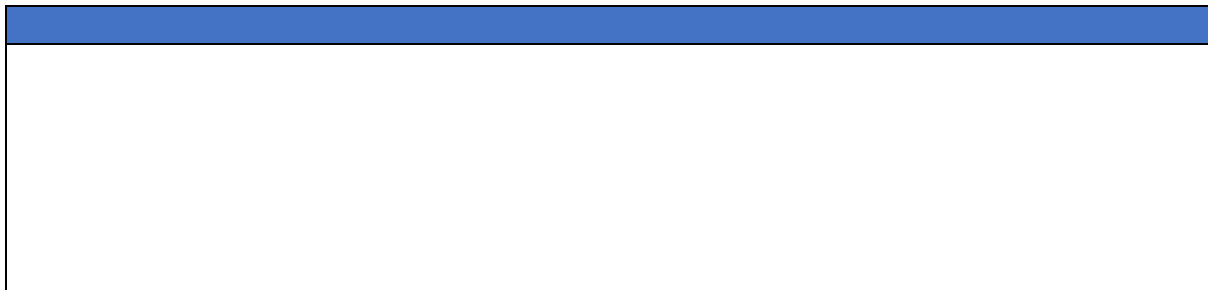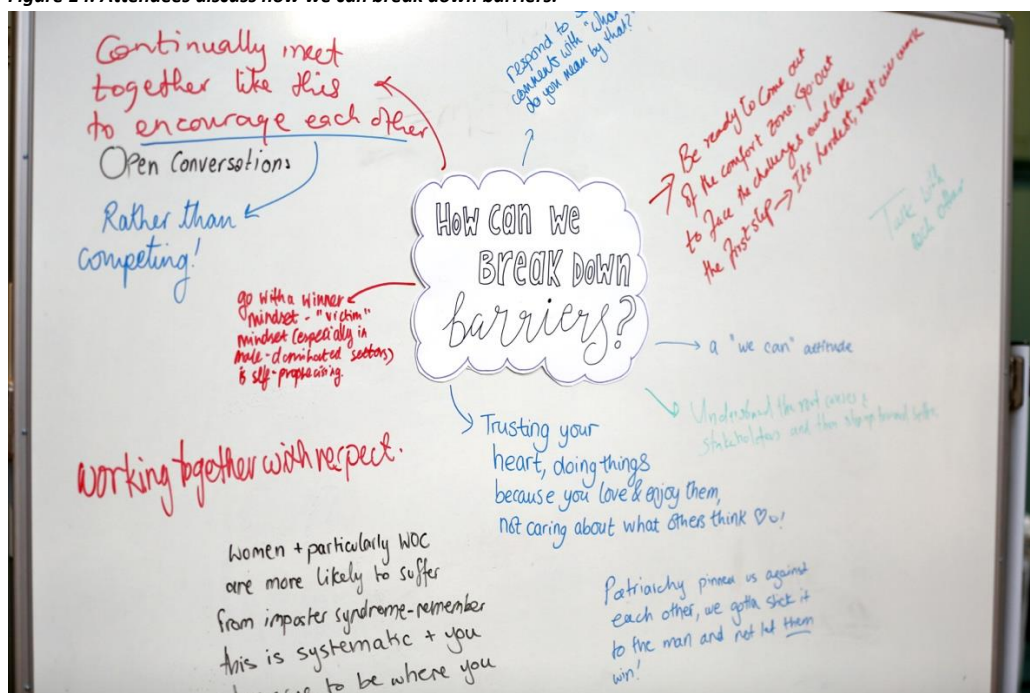*Figure 12. One of the academic speakers:*


Figure 13. The industry panel.

Figure 14. Attendees discuss how we can break down barriers.

Girls in Maths Taster Event

Since 2019, the Outreach team of the School has organised a "Girls in Maths" day dedicated to A-level Mathematics students. The event, which includes two taster lectures, a transitioning to university talk and a career talk, has run successfully in 2019 and moved online in 2020 and 2021. In April 2022 it returned to campus with two taster lectures by female academics and the participation of around 130 A-level female students from local schools. The taster lectures aim to show students the far-reaching applications of maths and the diverse career opportunities. In 2021 one participant commented enthusiastically

"Mathematics opens up many different solutions and my motivation is the growing world of different options".

Figure 15: Some of the participants at our Girls in Maths Day 2022, together with a student Maths Ambassador

Action 3.13
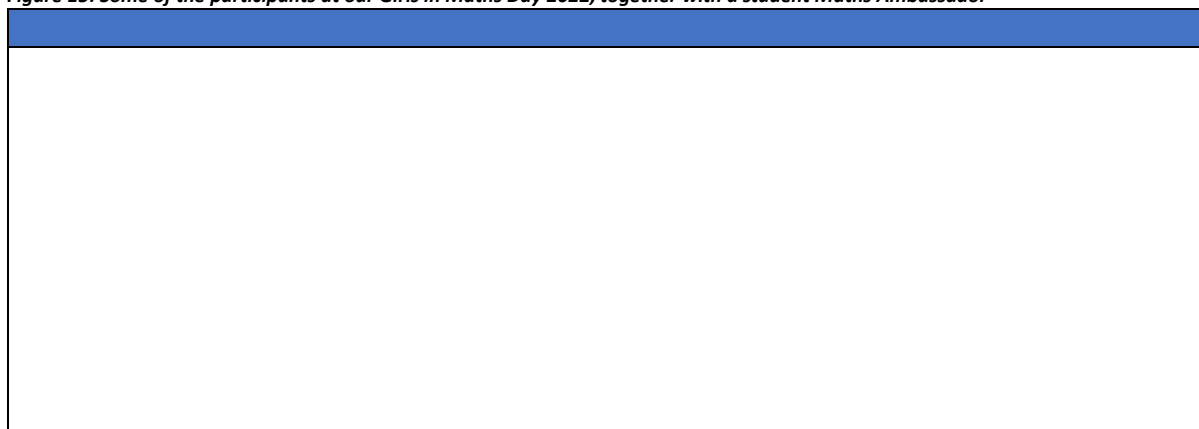
We aimed to expand our outreach activities and to create a target schools list. We were unable to fully complete this action due to the pandemic and the increased workload on staff. We managed to keep a good percentage of female participation when we moved our outreach events online. Indeed, in 2020 87% of the attendees of our outreach events were women. A renewed focus on outreach activities is planned as part of the future **Priority Objective 2, Action 2.1**.

Main learnings from Amber and Red rated actions in the 2016-2021 Action Plan

- The staff awareness of what EDI means and of the activities organised by the EDI Committee in the last five years has improved however the pandemic impact on the School and the transition from in person mode to online mode or mixed (hybrid) mode has been challenging. The higher workload on staff led to lower engagement of the wider School in the EDI agenda during 2020 and 2021. In November 2020 the EDI Lead stepped down and the HoS temporarily took over until the appointment of a new EDI lead in December 2021. This coincided with the revamping of the EDI agenda and a renewed calendar of events. The newly appointed Communications and Marketing manager has also updated the EDI School webpage and there are further plans to improve the webpage contents not only in terms of gender balance but also in terms of diversity and inclusion with resources as staff world map, guidelines on inclusive curriculum, guidelines on decolonising the maths curriculum, etc. (**Priority Objective 4, AP 2022-2027**)

- To increase the percentage of female students in our UG programmes we see the need to improve our outreach activities, to rekindle the collaborations with local schools after the pandemic break or to establish new ones. (**Priority Objective 2, AP 2022-2027**)

- There is an urgent need to increase the number of female PhD students. This can be two ways: externally and internally. We aim to provide a School funded PhD scholarship for women in maths (our university has already a PhD scholarship dedicated to BAME students) to attract the best female PhD applicants but at the same time we see the need to improve the quality of our taught final year modules in terms of advanced mathematical contents to provide our own students with a stronger mathematical background and to inspire them to apply for a PhD programme at Queen Mary. This will particularly benefit our own female students who are often very talented but do not choose a PhD progression mainly for lack of role models and the perception of not being strong enough for a PhD programme. (**Priority Objective 3, AP 2022-2027**)

- There is need to increase the percentage of female staff at every level of the academic career. Although there has been an improvement in the last 5 years, we still have **only one female** Professor. (**Priority Objective 1, AP 2022-2027**)

School of Mathematical Sciences - Athena SWAN Action Plan 2016-2020 (extended to 2021)

Key - C = Actions continuing from previous application

Image Legend

🔵 **Progress** = Progress based on actions taken since last Athena Swan application

📈 **Impact** = Impact based on actions taken since last Athena Swan application (November 2016)

⚠️ = Action to be taken as part of Gender Impact Plan 2022-2027

Objective	RAG Assessment	Plans identified in action plan 2016-2021	Timescale	Responsibility
1.1 (C) Maintain a representative, active SAT which is embedded in the School structure and strategy	G 📈 Impact	Structure SAT meetings around specific themes with non-SAT experts invited to inform the SAT	January 2017, then annually	EDI Lead Executive Officer
		Make sure that the SAT membership is diverse with representation across all levels of seniority, academic and professional staff as well as PGR students and UG students	January 2017, then annually	EDI Lead
1.2 Future-proof the SAT to ensure continuity of activity regardless of individuals	G 📈 Impact	Prepare Athena SWAN Champion role descriptor and hand-over protocols	September 2017	HoS, EDI Lead
1.3 (C)	G	Continue to cooperate with QMUL GEAG and	From 2016, quarterly or as	EDI Lead, EDIC deputy Chair and EDIC secretary

Objective	RAG Assessment	Plans identified in action plan 2016-2021	Timescale	Responsibility
Cooperate with university GEAG, the Faculty EDI Faculty committee and the Vice-Principal for people, culture and inclusion to influence policy across the university	Impact	S&E Faculty EDI committee.	meetings occur	
		Establish cooperation with the office of the Vice-Principal for people, culture and inclusion	2022	EDI Lead and EDIC secretary
1.4 Improve the provision, recording and monitoring of staff and student data with a view to identifying trends, determining areas for improvement, and developing relevant actions/policy	G Impact	Work with central university departments to clarify data requirements for central data to be received and analysed by SAT annually	April 2017, and annually thereafter	Equality, Diversity and Inclusion Officer, EDI Lead
		Delegate data collection responsibility of local data (eg. seminar speakers, outreach activity) to relevant staff	Since workload 2017-2018 and annually thereafter	HoS, Executive Officer
1.5 Further improve awareness of and communication about Athena SWAN in the School	A Progress	Maintain the EDI School webpage with regular updates, and maintain Athena SWAN communication mechanism to all staff	2016-	Marketing and Communications Officer, EDI Lead
		Bi-annual survey on staff awareness of Athena SWAN and satisfaction with EDI activities in the School	2016-	EDI Chair and deputy Chair, Executive Officer
Objective	**RAG Assessment**	**Plans identified in action plan 2016-2021**	**Timescale**	**Responsibility**
2.1 (C) Monitor UG and PGT student data by gender with particular attention	A	Annual review of UG and PGT data by gender once more regular data packs are received	Annually in April since 2016	EDI Lead and Education Manager

to new and expanding programmes	**Progress** (orange)			
2.2 Maintain support structures and activity to effectively support all our students	G **Impact** (green)	Track degree attainment by gender	Annually in September since 2016	Director of Taught Programmes
		Ensure that initiatives proposed by SEWG (Student Experience Working Group), CAISE (Centre for Academic Inclusion in Science and Engineering) and other education focused groups in the University and the S&E Faculty, are assessed in terms of their effectiveness in supporting all students in an unbiased way	Implemented 2016-2017, review annually	EDI Lead
2.3 (C) Survey UG & PGT student's attitudes to gender equality and diversity and inclusion matters within the School	R (red)	Consider incorporating questions on equality and diversity in existing student surveys	Planned for Spring 2017 and then annually	Chair of SEWG, Education Manager
		Make use of other forms of feedback such at Student Support Officer forums, feedback at UG and PGT Student and Staff Liaison Committees, and UG representation on EDIC		Student Support Officer
2.4 (C)	A (orange)	Targeted advertising of existing events as PGT and PGR Open Days at our undergraduates.	Annually	Student Recruitment and Outreach Officer

Objective	RAG Assessment	Plans identified in action plan 2016-2021	Timescale	Responsibility
Promote PGT and PGR study to our UG students.	Progress	Organise regular Maths specific events on PGT and PGR studies.	Annually	Maths Careers Consultant/SROM
		Run PGT taster days for UG finalists	February 2017	SROM
		Promote involvement in Maths Society to PGT and PGR students to raise awareness of PG studies amongst UG students	2017-2018	President of Maths Society & Student Support Officer
2.5 (C) Review our PGR advertising process with the aim of improving the gender balance in applications at PGR level	A Progress	Review PGR adverts and advertising sources to appeal to a wider range of candidates.	January 2018	Executive Officer, PGR Programmes Officer
		Ensure that part-time option for PGR courses is prominently mentioned	January 2017 for October 2017 intake	Postgraduate Research Programmes Officer/Executive Officer
2.6 Review our PGR recruitment and selection process with the aim of improving the gender balance at PGR level	A Progress	Review the information communicated to candidates at the offer stage and collect information on the reasons for acceptance or rejection to better understand trends	From 2016-2017 academic year	Director of Postgraduate Research Studies
		Review fairness of the new structure and modify as appropriate		

Objective	RAG Assessment	Plans identified in action plan 2016-2021	Timescale	Responsibility
3.1 Formalise exit interviews to gain feedback on experiences in the School and better document leavers' destinations	R ⚠	Formulate standard exit interview form, and mandate exit interviews with all staff to help identify trends	Academic year 2018-2019	Executive Officer/Line Managers
3.2		Address the 'two-body problem' by	Academic year 2017-2018	HoS and EDI Lead

Provide support and advice for prospective candidates with a 'two-body problem'	G Impact	encouraging partners of newly appointed staff to request visitor status (if a mathematician). Negotiate with QMUL careers service to allow some access to careers advice for partners of newly appointed staff		
3.3 (C) Raise further awareness of unconscious bias amongst all staff with key decision-making responsibility	G Impact	Unconscious bias training for all academic staff, and Professional Services Staff with key decision-making responsibility, e.g. admissions tutors, student facing staff and staff responsible for recruitment in the School, promotion panellists	By January 2018	Executive Officer
3.4 Developing a staff recruitment strategy to attract more female candidates for academic positions	A Progress	Review shortlisting process to include Athena SWAN Champion/voice for gender equality on each panel Make consistent use of our AWM, EWM and WISE networks to advertise vacancies	2017-2018 academic year December 2016	HoS Executive Officer, EDI Lead
3.5 Targeted career development support of academic staff	G Impact	Career progression log for each member of staff to be further developed and shared with appraisers in advance of appraisals and promotions rounds to raise awareness of staff's career trajectories and encourage development and applications for promotion	Annually in January	Career Development Committee
3.6 (C) Further integration of PDRAs within School	G	PDRAs representation in School Committees as EDIC Targeted development workshops aimed at	Annually since 2018	PDRA representative in EDIC, EDI Lead

	G Impact	early career researchers		
3.7 Further development and future-proof support given to PGR students for academic career progression	G Impact	Further development and future-proofing of PGR training programme created by the Doctoral College to ensure continuity	2016-2017 academic year	Director of Postgraduate Research/PGR Programmes Officer
3.8 Further develop research grant application support for all academic and research staff to ensure equal success rates in grant applications amongst genders	G Impact	Dedicated 'What went wrong' workshops focussing on unsuccessful grant applications to learn how to improve unsuccessful or future applications and build confidence. Mock grant application review panel workshops to be run annually to help staff prepare for grant interviews Further promote applications to grants which support equal opportunities such as Daphne Jackson/Dorothy Hodgkins Fellowships	Start in 2017, then annually	Director of Research, Research Manager
3.9 Further improve gender balance on committees	G Impact	Publish terms of reference online, embed having a conversation with staff on completion of their probation to discuss appropriate time scales for committee membership Committee membership to be discussed at appraisal and referenced in appraisal framework Committee membership opportunities to be publicised to all staff	Annually	HoS, School Manager and EDI Lead

3.10 Improve gender balance for key roles in the School	G Impact	Implement an expression of interest – competitive process method to appoint key roles as head of research group. Implement the process on permanent basis with the aim of making the process more open and inviting expressions of interest from more staff Encourage applications from a broad pool of applicants by having a smooth transitioning process in place	Since 2017-2018 academic year	HoS, School Manager
3.11 More exposure of female seminar speakers	G Impact	Continue to monitor seminar speaker data and encourage more female seminar speakers	Start in 2017, then monitor annually	EDI Lead, Research Officer
3.12 Better visibility of female role models	G Impact	Introduce regular events to inspire young women to pursue careers within a variety of STEM areas	Annually since 2019	Maths careers consultant, Student Recruitment and Outreach Manager, School Manager, EDI Lead
3.13 Evaluation of our current outreach programme to determine the range of intervention on target groups	A Progress	Use CRM system to record and track the attendance and profiles of students attending outreach events Development of a target schools list to enable ongoing interventions with target groups as students progress through their studies	Annually in September	Student Recruitment and Outreach Manager

2. Key priorities for future action

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

The following objectives have been identified by critically evaluating our progress in the 2016-2021 AP. They are based on the data analysis in Appendix 1 and 2. A rationale column is also provided in the 2022-2027 AP.

PRIORITY OBJECTIVE 1: Improve the gender balance of academic staff at all seniority levels

15.8% of our permanent academic staff is female (Figure 3 and Table A16). The breakdown by seniority is as follows: 15.3% of lecturers are female, 33% of senior lecturers are female, 12.5% of readers are female and 5.2% of professors are female (Table A16, Figure 3). While there was an improvement of these percentages concerning senior lecturers and readers (16.7% in 2017/2018 and 6.25% in 2019/2020, respectively) the percentage of female professors is still very low resulting in only one female Professor in the School. In addition, we have no BAME female representation at reader and professor level.

According to a benchmarking exercise by the London Mathematical Society in 2017, the proportion of lecturers and senior lecturers in the mathematics departments in the UK who were female was 23%, while 11% of professors in mathematics were female. According to the 2020 Advance HE Higher Education Statistical Report for Students and Staff the percentage of academic women in Mathematics in UK is 22.4%. The percentage of female professors in SET is 22.6%. In our School we are below the national average in both the percentages of female academic staff and female professors. In 2018/2019 and 2019/2020 no women were appointed for academic positions (all grades including PDRAs and fellows as well). See Table A18.

PRIORITY OBJECTIVE 2: Reverse the decrease in the gender balance of UG students

The percentage of female UG students in the School was 49% in 2016/17, and it decreased to 46.77% in 2017/18 and 45% in 2018/19 to reach 39.3% in the current academic year (Table A2). Note that overall, the total number of UG students has increased, from 913 in 2017/18 to 1207 in 2021/22 (+33%, Table A2). Most of this increase is due to an additional focus on clearing, where the percentage of students enrolled after clearing increased from 26% in 2017/18 to 44.2% in 2021/22 (see Table A4). As shown in Table A4 and Table A7, this increased intake at clearing is most probably one of the main reasons behind the decline of the UG gender balance.

PRIORITY OBJECTIVE 3: Improve the gender balance of PGR students

The percentage of female PGR students has been declining in the last 3 years. Since the academic year 2018/2019 the percentage of PhD scholarships accepted by female PGR students went from 22% to 35% in 2019/2020 and then down to 28% in 2020/2021 and 11% in 2021/2022 (Table A10). It means that we went from 8 female PGR students enrolled in

2019/2020 to 5 in 2020/2021 and 2 in 2021/2022. In the recent PGR scholarship allocation meeting for 2022/2023 no scholarships were offered to female students.

PRIORITY OBJECTIVE 4: Create an inclusive environment

According to the School staff survey run in October 2020

- 27% of staff have been the victim of an episode (or episodes) of unsupportive, offensive, or derogatory language/behaviour and 46% of staff have witnessed this (Q12 and Q13, Appendix 1).
- 48% of staff did not think that achievements are celebrated in the School, or at least not consistently (Q14).
- 12% of staff believe social and networking activities in the School are not inclusive (Q15) and only 47% of the staff thinks that there are enough social and networking activities in the School (Q16).
- 86% of staff feel treated fairly (Q16), but only about 65%* of female respondents felt treated fairly.

In the most recent staff survey in February 2022 the percentages in the first bullet point decreased to 8.9% and 16.1%, respectively (Q12, Q13) but the percentage of women in Q13 is still considerably higher than the percentage of men. No significant improvement has been noticed for the others bullet points with a considerably lower percentage of women thinking that the School activities are inclusive (Q15). This gives a gender perspective to our objective of creating a truly inclusive environment.

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* Note that only a small number of women disclosed their gender. More than a quarter of respondents did not provide personal details such as gender identity.

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.

The formulation of our Action Plan, implementation of actions and objectives have been signed off by the EDIC and SMT and informed by consultation with a range of staff and external individuals/networks.

<u>School of Mathematical Sciences - Athena SWAN Action Plan 2022-2027</u>

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
PRIORITY OBJECTIVE 1: Improve the gender balance of academic staff at all seniority levels							
1.1	Setting up a committee to assist with the recruitment of all senior academic posts by identifying those with the qualifications and skills required, and then approaching these potential female candidates	In 2019/2020 women accounted for 23% of applications. This percentage has not grown in 2020/2021.	Committee is set-up and establishes objectives and processes Self-assessment of the efforts and outcome of the committee Ensuring all job advertisements use gender neutral language Delivering refresher recruitment training for all staff every 2 years Regularly review of the use of the internal talent scheme to recruit female academics	October 2023 2025 2022 2023, 2025 and 2027 2022	2024 Annual Annual Bi-annual Annual	HoS HoS and EDI Lead EDI Lead and Executive Officer School Manager HoS and EDI Lead	Increase in percentage of female applicants from 23% in 2021 to 30% in 2027.
1.2	Targeted funds to support an increase in the percentage of female seminar speakers from 23% in 2021	Evidence shows that female academics invited to speak at one of our seminar series are more likely to apply for positions. This is the case for two of our recent female appointments. Increasing the visibility of women is particularly important for early career researchers.	Continued monitoring of seminar speakers by gender Implementation of additional flexibility in our seminar invitations, for example offering option for online delivery for those with caring responsibilities Funds made available to invite female speakers from further away for those areas where there are only few female academics Evaluation of additional funds to increase gender diversity	2022 2022 October 2022 October 2023	Annual Annual Annual Annual	DoR DoR HoS EDI Lead and HoS	Increase in the percentage of female seminar speakers from 23% in 2021 to 30% in 2027. There are multiple reports that female academics in the Mathematical Sciences are overflowing with seminar invitations, so it is important to keep the target ambitious will not overburdening women at other institutions.

1.3	Make clear in recruitment advertising that we welcome flexible working	Working flexibly helps staff to balance their work and home lives and is vital in creating an inclusive economy and diverse workforce. According to our 2020 staff survey, 89% of staff thought that the introduction of the Flexible Teaching Guidelines in the School was a positive change. 25-30% of the staff applying for the scheme in 2019 and 2020 were female. A formal application system for flexible teaching stopped in March 2020 due to the switch to online/hybrid delivery. In the recent staff survey (February 2022) 62.5% of the staff was in favour to reinstate it.	Signpost opportunities for flexible working during recruitment	2022	Annual	HoS	All new appointments are informed about flexible working policies available in the School during induction and make use of them when relevant.
			Increase the visibility of staff who work flexibly by sharing staff profiles on the School webpages and via internal newsletter	2023	Annual	Marketing and Communications Officer	2 staff profiles are shared per year
			Collect data on requests from applicants for flexible teaching during recruitment	2022	Annual	DoE, Education Services Manager	
1.4	Continue regular reviews of all academic staff to ensure specific consideration is given to eligibility for promotion	According to our 2020 and 2022 staff surveys, only 67% of staff think that the School provides adequate support for career progression. Since 2016, 83.78% of men have been promoted (31M) against 16.22% of women (6F) One model of good practice that has been introduced in other institutions is the introduction of thresholds, whereby staff on the Lecturer scale are reviewed for readiness for promotion after three years, and Senior Lecturers are reviewed every five years.	Review implemented through annual appraisals, probation and promotions cycles Review of the effectiveness of this action in increasing promotion rates	2022 2023	Annual Annual	HoS, DHoS	Increase by 3% per year, from 67% in 2022 to over 80% in 2027, the percentage of staff who think that the School provides adequate support for career progression, following a staff survey. Improve the success rate for women to be promoted by 5% per year, from 16% in 2016-2021 to 50% in 2022-2027, while continuing to have a healthy number of applications from women. Increase the number of female professors in the

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
		Personal development plans are developed jointly with their appraiser, to support the colleague's career progression. This ensures that no staff are overlooked. It also means that staff do not lose valuable time during their careers, when they could enjoy promotion sooner, contributing to both personal and institutional success.					School by 1 to 3 within 2027 via promotion and external appointment.
PRIORITY OBJECTIVE 2: Reverse the decrease in the gender balance of UG students							
2.1	Curate a diverse outreach programme to attract attendees from target groups (such as women)	Increase the percentage of female students in our UG programmes, currently from 39.3% to 45%.	Hold outreach events aimed at secondary school female students Ensure a diverse range of speakers and areas are covered in the events	January 2023 2022	Annual Annual	DoE, Outreach Manager DoE, Outreach Manager	Maintain the percentage of female attendees of our outreach events above 50%
2.2	Increase visibility of female role models	To increase confidence and to demonstrate that the University and the School reward success, students must be able to identify with successful role models	Ensure gender diversity of student-facing academic activities is maintained, including for example events held jointly with the Maths Society Ensure that contributions by women in these initiatives are fairly accounted for in the workload allocation model, to avoid overburdening women Collect data on visibility of female role models	2022 2022 2022	Annual Annual Annual	DoE DoE and HoS DoE	All of student-facing events to include female role models
2.3	Adjusting entry tariffs	When lowering fewer grades we had better gender balance, so assessing the effect of entry	When entry tariffs are decided, annually, considerations about the impact on gender balance are made,	October 2023	Annual	DoE	Improve the percentage of female applicants

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
		tariffs on our gender balance is key	as part of an equality impact assessment, highlighting the fact that women have better progression rates				from 45% by 1% per year to 50% in 2027.
			Collect and analyse data on the effect of entry tariffs on the gender balance among UG students	2023	Annual	DoE and EDI Lead	
PRIORITY OBJECTIVE 3: Improve the gender balance of PGR students						
3.1	Ensure female presence (female PhD students and supervisors) at the Opportunity Day, on webpages and advertisement, including the opportunity for part-time studies, and advertising a PhD scholarship ring-fenced for women	Improving the gender balance in applications at PGR level. In 2020/2021 only 20% of our PhD applications were by women	Annual review of School webpages and advertisements	2022	Annual	DPGR	Increase the % of female applicants from 20% in 2021 by 1% per year to 26% in 2027
			Ensure visibility of female staff members and PGR students at recruitment events	2022	Annual	DPGR and EDI Lead	Increase the percentage of female acceptance from 11% in 2021 to 17% in 2027
			Engagement with the Piscopia Initiative to increase the number of PhD students in Maths	2023	2027	EDI Lead	
			Ring-fenced PhD scholarship for women is advertised and recruited to	2023	Annual	DPGR	
			Application data for the ring-fenced scholarship is reviewed to understand the impact and support decision making about future PhD scholarship offers.	2024	Annual	DPGR and EDI Lead	
3.2	Establish an UG internship programme for students to try research	Summer UG internship programmes give students with a diverse background the opportunity to see what a career in research is like	Review applicants' gender distribution aiming to identify any protected characteristic which is under-represented among those that we target to increase at PGR level	2022	2025	DPGR and EDI Lead	The internship programme is a new initiative. It will be successful if every year at least one of the students who go through that experience were to stay with us to study for a PhD.
			Ring-fence internships accordingly, to ensure fair representation of both genders	2023	2027		

3.3	Collect data on applicants and graduating PhD students	We need to understand more the driving factors to develop targeted actions to increase diversity	Survey PGR applicants who do not take up our offer	2022	2025	DPGR	New actions to increase the diversity of PGR students are identified and implemented
			Survey graduating PGR students on their outcomes and gather feedback on their experiences in the School	2022	2024		
			Review survey results to generate new actions	2023	2025		
3.4	Increase of visibility of female academics in PhD interviews, and women involved in overall assessment of applications, and in the future women in all interviews of women	Bringing more diversity to our interview panels is beneficial and interview panel diversity helps you avoid hiring based on shared biases and helps you assess candidates in a more thorough manner. PhD interview panels are not as diverse as staff interview panels. Moreover, increasing the visibility of women on panels will provide applicants with a better experience and increase the probability that they will accept an offer from us	Assessment of the possibilities for increased representation of women on PhD interview panels, keeping in mind workload allocation considerations	2022	2027		Increase the % of female accepting PhD places from 11% in 2021 by 1% per year to 17% in 2027
			Survey applicants to see whether a representative panel makes a difference in the recruitment process	2024	2027		
			Ensure that contributions by women in these processes are fairly accounted for in the workload allocation model, to avoid overburdening women	2022	2027		
3.5	Increase the number of local students who apply for a PhD studentship in our School	We have a very limited number of PhD students who have been previously UG students at Queen Mary. No female students among them.	Suggest research oriented final year projects to identify potential local PhD applicants	2023	Annual	DoE	PhD studentship accepted by a local female student.
			Run research-oriented seminars for final year students to advertise the possible PhD projects in the School with particular visibility given to the female members of staff.	2023	Annual	DoR	

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
			PRIORITY OBJECTIVE 4: Create an inclusive environment				
4.1	QMUL Values, a University wide approach that aims to create an inclusive environment and includes preventing bullying and harassment.	According to the 2020 staff survey, 27% of staff have been the victim of an episode (or episodes) of unsupportive, offensive, or derogatory language/behaviour and 46% of staff have witnessed this. In the 2022 staff survey these percentages have decreased to 8.9% and 16.1%, respectively, however these percentages are still higher for women than for men.	Improve prevention approached and responsive processes for bullying and harassment	2022	2023	HoS	Decrease in the percentage of staff who has been the victim of an episode (or episodes) of unsupportive, offensive, or derogatory language/behaviour by staff survey in 2024.
			Documentation about Dignity at Work and Study is disseminated and discussed in a variety of venues	2022	2023	HoS and School Manager	
			Documentation included in communications to new students and staff	2022	2023	School Manager and DoE	
			Active Bystander training mandatory for staff and PGR students	October 2023	Annual	EDI Lead and School Manager	
4.2	Core hours and family-friendly social and networking events for staff	According to the 2022 staff survey, 15.7% of staff think that social and networking activities in the School are not inclusive and only 47.2% of the staff thinks that there are enough social and networking activities in the School. These percentages are higher for women than for men.	School-wide meetings held more often and have a more varied programme than in the recent past, celebrate significant achievements by staff, and are followed by socialising/networking opportunities.	2022	2027	HoS and EDI Lead	Increase the percentage of staff who think that social and networking activities in the School are not inclusive and the percentage of the staff thinks that there are enough social and networking activities in the School. Obtain balance between male and female percentages.
			Pilot a series of School away day for Research, Teaching and EDI.	2023	Annual	HoS, DoR, DoE and EDI Lead	
4.3	Social events for staff and students aimed to celebrate women in Maths and Science	Students' engagement in town hall meetings and Maths Society activities has suffered the impact	A once a term social event open to all staff and students with the screening of a documentary celebrating Women (and other intersectional groups) in	2023	Annual	EDI Lead and DoE	Increase student engagement in School activities dedicated to women in Maths and

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
		of the pandemic and the switch to online mode.	Maths and Science and a panel discussion followed by refreshment.				Science and more widely improve NSS response rate.
4.4	Celebrating success	According to the 2020 staff survey, 48% of staff did not think that achievements are celebrated in the School, or at least not consistently. This percentage has not changed in the 2022 with a much higher percentage of women (53.8%) than men (31.2%).	Regular emails from HoS celebrating successes beyond grants	2022	Annual	HoS	At least 4 all-staff emails from the HoS are sent each year, with each email celebrating School or personal achievements beyond research grant successes
			Raise awareness of award opportunities available and those aimed at women	2022	Annual	HoS, DoR, DoE	

Ref	Proposed action	Rationale	Detail of Planned Actions	Start date	End date	Responsibility	Success Measures
LOWER PRIORITY OBJECTIVE: EDIC membership and EDI leadership						
5.1	Maintain a representative, active EDIC which is embedded in the School structure and strategy	The EDIC have members who are students or are on a temporary contract so an annual review of its membership is needed.	Invite maths students ambassadors to join the EDIC	October 2021	Annual	EDI Lead	At least 3 students ambassadors joining the EDIC
	(Action continued from previous AP)	The EDIC welcome any new staff member or PGR student passionate about EDI.	EDI Lead to have an introductory meeting with any newly appointed member of staff	2022	2027	EDI Lead	1 member of staff appointed after 2022 to join the EDIC by 2027
			EDI Lead to meet with the PGR students cohort at the beginning of the academic year	October 2022	Annual	EDI Lead	Representation of first year PGR students guaranteed in the EDIC since 2023
5.2	Discussing the meaning and future of the EDI leadership	To ensure inclusivity and diversity in some institutions the EDIC is co-chaired by an academic member of staff and a PS member of staff.	Start the discussion about co-chairs and their agenda in the EDIC	2024	2025	EDI Lead and deputy	Future of the EDI leadership is a standard item in the EDIC meetings

		In some institutions one co-chair is devoted to the gender balance agenda and the other is devoted to the race equality agenda.	Work out a written proposal with detailed workload allocation to be discussed at SMT and Faculty level	2025	2026	EDI Lead, School EO	Proposal presented at the EDI faculty meeting
			New EDI leadership presented to the School	2027		EDI Lead, HoS	New EDI leadership is presented at a Town Hall meeting in Spring 2027

Appendix 1: Culture survey data

We ran two surveys: one in October 2020 and one in February 2022. In the sequel we report and compare the results obtained in the two surveys in relation to the core culture questions plus some extra questions connected to our 2022-2027 action plan.

We also report about some free comments collected in the 2022 survey relevant to the core questions. The 2022 survey results are disaggregated by gender. This was not possible in the 2020 survey since only a small number of women disclosed their gender.

Q1: I am happy working in the School of Mathematical Sciences

Q2: I feel free to openly express my opinions on matters that concern the School at large

Q3: Staff in the School are treated fairly, irrespective of their gender identity

Q4: The School is taking meaningful actions to promote gender equality

Q5: The School enables flexible working

The question on flexible working did not appear in the 2020 survey. It was replaced by the question below on the introduction of *Flexible Teaching Guidelines.*

Q6: In 2019 the School's EDI committee launched the 'Flexible Teaching Guidelines' to relieve pressures on those with family/caring responsibilities. In your opinion, has this been a positive change?

Q7: The School makes it clear that unsupportive, offensive, or derogative language/behaviours are not acceptable and will not be tolerated.

Q8: The School provides adequate support for career progression to all staff

Q9: The mental health and wellbeing of staff and PhD Students are supported in the School

The question above did not appear in the 2020 Survey. It was replaced by the related question below.

Q10: I feel that the School's Senior Management cares about the School and members of staff

In the 2022 Survey we also enquire about the action taken by the School to mitigate the impact of COVID-19 on Staff and PhD students and we ask to provide comments and feedback in a dedicated comment box. Some of them are reported below.

Q11: The School has taken action to mitigate the diverse impact of the COVID-19 pandemic on staff and PhD Students, especially regarding gender.

Q12: I have been the victim of an episode (or episodes) of unsupportive, offensive, or derogatory language/behaviour in the School.

Q13: I have witnessed an episode (or episodes) of unsupportive, offensive, or derogatory language/behaviour in the School.

Q14: Success and achievements are celebrated in the School.

Q15: The social and networking events organised in the School are inclusive.

Q16: Are there enough social and networking opportunities in the School, in person and online?

Q17: Staff in the School are treated with fairness.

Please comment here on how (and how well) the School has tried to mitigate the impact of COVID-19 pandemic on the well-being of staff and PhD Students.

The school has been accommodating at a difficult time

The School has tried to mitigate the impact of COVID-19, but the external

pressures imposed on the School (PhD allocations, MME, online assessments) outpace the School's efforts.

PhD students were not very well supported (at least in the early part of the pandemic); the focus on staff seemed to be those with families whereas others were also affected in different ways.

Comments collected in the 2022 survey directly linked to our future action plan

The gender balance at the Professor level is really quite bad (<Redacted>). To some extent this must reflect supply (if talented women have quit academia before reaching that level of seniority then QMUL can't hire them) and is also subject to inertia (the School can hardly just remove a bunch of existing male professors in order to improve the balance) but in this context it is difficult to agree that "the role models in the School are a balanced representation" etc. Nonetheless one must wonder whether the promotions and hiring processes are genuinely non-discriminatory at all stages (including Faculty and other non-School steps of the process).

I welcome more EDI activities as a way to warranty more ethnic diversity in the School.

Appendix 2: Data tables

The data below are all obtained from the University PowerBi apart from Tables A30-A31 which come from internal data collection by the School Executive Officer and the Research Manager.

Student data: Foundations, UG, PGT and PGR

Table A1: Foundation students by gender

Table A2: Undergraduate students by gender

Table A3: Undergraduate students by gender, Main Cycle

Table A4: Undergraduate students recruited via clearing

Table A5: First Year Undergraduate Students

Table A6: First Year Undergraduate Students, Main Cycle

Table A7: First Year Undergraduate Students recruited via clearing

Table A8: PGT students by gender

Table A9: PGR students by gender

Degree attainment and completion rate

Table A11: First class honours by gender, UG students

Table A12: Good honours by gender, UG students

Note that the university dashboard does not allow to distinguish foundation students from UG students in terms of attainment and completion rate. No attainment and completion data are collected for PGT students. Concerning PGR students, in the last five years they have all successfully defended their thesis.

Table A13: Completion rates, UG students

Academic Staff data

Table A14: Academic Staff by contract function and gender 2017-2022

Academic staff by contract type

Note that the University powerBi Dashboard does not distinguish between Teaching Fellows (FT) and T&S Staff who have instead an OE contract. Hence, we are unable to provide a detailed description of academic staff by contract type and gender. Research only contracts are FT while T&R staff are on an OE contract. T&S staff are included in the academic pipeline since their contract allow a career progression from lecturer up to professor (Table A16).

Table A15: Academic Staff by grade and gender (2017-2022)

In terms of grades, we have PDRA (Grade 4 or 5), Teaching Fellow (Grade 5), PDRF (Grade 6), Lecturer (Grade 5 or 6), Senior Lecturer and Reader (Grade 7), Professor (Grade 8 or off scale).

Table A16: Academic Pipeline (2017-2022)

Table A17: Academic staff on part-time contract (2015-2022)

Table A18: Academic recruitment (2015-2021)

Table A19: Percentage of female at application, shortlist, and appointment level, 2016-2021

Academic promotion (2016-2021)

Table A20: Academic promotion data, 2016

No applications or promotions from female staff.

Table A21: Academic promotion data, 2017

Table A22: Academic promotion data, 2018

No promotion of female staff in 2018. However, <redacted>.

Table A23: Academic promotion data, 2019

This is the only female promotion to professor from 2016 to 2021. <Redacted>

Table A24: Academic promotion data, 2020

Table A25: Academic promotion data, 2021

<Redacted>

In the period 2016-2021 we had 31 promotion of male staff members (83.78%) and 6 promotion of female staff members (16.22%) as shown in the chart below. <Redacted>. Currently, we have no BAME female representation in the school at the Reader and Professor level.

Table A26: Number of female academic promotion data, 2016-2021

Table A.27: Promotion success rate for female academics, 2016-2021

Professional services (PS) data

Table A28: Professional services staff by type of contract and gender, 2016-2021

All PS staff are, or have been, in the PS job family, with the exception of <redacted>.

Table A29: PS recruitment data, 2015-2021

Career progression for PS staff

Note that a small proportion of Professional Services staff in A28-A29 include staff on short-term, temporary part-time contracts – these are primarily PhD students who undertake some additional work supporting the School with specific short-term research projects. All other substantive PS positions in the School are typically permanent staff. As such, data is not broken down further by contract type. Career progression for PS staff on substantive contracts is different to the framework for academic staff. Whilst academics are able to seek promotion within their role, this is generally not the case for professional services staff, who normally apply for a new role to secure promotion or progression. This emanates from many professional services roles being specialised and within small teams. However, the School Manager actively encourages staff to consider their career paths and their own development more broadly through seeking relevant training or by utilising opportunities for shadowing or secondments. The team is also supported in pursuing options across the wider University such as membership of cross-Faculty or central committees and process review working groups. There are several examples of staff who have been supported in development who have progressed to higher level roles either within the University or other HEIs.

Seminar data

Table A30: percentage of female speakers in our seminars

Table A31: percentage of female speakers, school average

Appendix 3: Glossary

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

Acronyms used in this document

AP: Action Plan
AS: Athena SWAN
AWM: Association Women in Mathematics
BAME: Black Asian and Minority Ethnic
DoE: Director of Education
DoR: Director of Research
DPGR: Director of Postgraduate Research
EDI: Equality Diversity and Inclusion
EDIC: Equality Diversity and Inclusion Committee
EO: Executive Officer
EWM: European Women in Mathematics
FT: Fixed term
GEAG: Gender Equality Action Group
HoS: Head of School
HR: Human Resources
LMS: London Mathematical Society
MME: Mixed Mode Education
NSS: National Student Survey
OE: Open-ended
PDRA: Postdoctoral Research Associate
PGR: Postgraduate Research
PGT: Postgraduate Taught
PS: Professional Service
QM: Queen Mary
QMUL: Queen Mary University of London
RM: Research Manager
SAT: Self-Assessment Team
SET: Science, Engineering and Technology
SM: School Manager
SMS: School of Mathematical Science
SMT: Senior Management Team
T&R: Teaching and Research
T&S: Teaching and Scholarship
UG: Undergraduate
WISE: Women in Science and Engineering