



Department Application
Bronze and Silver Award



ATHENA SWAN BRONZE DEPARTMENT AWARDS

Recognise that in addition to institution-wide policies, the department is working to promote gender equality and to identify and address challenges particular to the department and discipline.

ATHENA SWAN SILVER DEPARTMENT AWARDS

In addition to the future planning required for Bronze department recognition, Silver department awards recognise that the department has taken action in response to previously identified challenges and can demonstrate the impact of the actions implemented.

Note: Not all institutions use the term 'department'. There are many equivalent academic groupings with different names, sizes and compositions. The definition of a 'department' can be found in the Athena SWAN awards handbook.

COMPLETING THE FORM

DO NOT ATTEMPT TO COMPLETE THIS APPLICATION FORM WITHOUT READING THE ATHENA SWAN AWARDS HANDBOOK.

This form should be used for applications for Bronze and Silver department awards.

You should complete each section of the application applicable to the award level you are applying for.

Additional areas for Silver applications are highlighted throughout the form: 5.2, 5.4, 5.5(iv)

If you need to insert a landscape page in your application, please copy and paste the template page at the end of the document, as per the instructions on that page. Please do not insert any section breaks as to do so will disrupt the page numbers.

WORD COUNT

The overall word limit for applications are shown in the following table.

There are no specific word limits for the individual sections and you may distribute words over each of the sections as appropriate. At the end of every section, please state how many words you have used in that section.

We have provided the following recommendations as a guide.

Department application	Bronze	Silver
Word limit	10,500	12,000
<i>Recommended word count</i>		
1. Letter of endorsement	500	500
2. Description of the department	500	500
3. Self-assessment process	1,000	1,000
4. Picture of the department	2,000	2,000
5. Supporting and advancing women's careers	6,000	6,500
6. Case studies	n/a	1,000
7. Further information	500	500

Note on benchmarking data:

Where available, HESA benchmarking data has been provided for the Russell Group. Benchmarking data for 2015/16 has been obtained from HEIDI Plus. It should be noted the data for 2016/17 is not available yet.

Student benchmarking data is based on the mean average of students returned against the following HESA Cost Centres:

G1 – Mathematics
G2 – Operational research
G3 – Statistics
G9 – Others in mathematical sciences

Staff benchmarking data is based on the mean average of staff returned against the following HESA Cost Centre:

122 - Mathematics

Note on additional words:

ECU has granted the School an additional 1,000 words. This was requested in order to enable discussion of the impact of the recent Faculty restructure on Academic and Professional Service staff groups, and discussion of the reintroduction of Physics at Newcastle University. The additional words have been used in the letter from the Head of School, the description of the department and in the section on supporting and advancing women's career.

Email confirmation from ECU:

From: James Greenwood-Lush [mailto:James.Greenwood-Lush@advance-he.ac.uk]
Sent: 27 July 2018 11:32
To: Louise Jones <Louise.Jones@newcastle.ac.uk>
Cc: Athena Swan <Athena.Swan@advance-he.ac.uk>
Subject: RE: Athena SWAN application - request for additional words

Dear Louise,

We can confirm a 1000 word limit extension for the NU School of Mathematics, Statistics and Physics submission for the November 2018 round, based on the information provided.

Please include a copy of this email in your submission.

Best wishes,

James

James Greenwood-Lush
(previously known as James Lush)

Equality Charters Development Manager

E james.greenwood-lush@advance-he.ac.uk
T +44 (0)2072 696547
M +44 (0)7889 757390

www.advance-he.ac.uk

First floor, Westminster Tower
3 Albert Embankment, London, SE1 7SP

From: Louise Jones [mailto:Louise.Jones@newcastle.ac.uk]
Sent: 26 July 2018 13:12
To: James Lush <James.Lush@ecu.ac.uk>
Subject: Athena SWAN application - request for additional words

Dear James,

It was nice to see you on Monday and catch up on your news.

We would like to formally request an additional 1,000 words for the School of Mathematics, Statistics and Physics to use in their application for a Silver Athena SWAN award. This application is due to be submitted at the end of November 2018.

The justification for this request is to enable the discussion of the impact of the recent Faculty restructure on Academic, Professional Service and Technical staff groups. For example, there are a number of Professional Service and Technical staff who are located in the School, but are now managed by the Faculty. However, they play a valuable role in the delivery of teaching and research activities, as well as the student experience within the School. The reorganisation process also created a new governance structure within the School, including the appointment of a new Head of School, Deputy Head of School and School Executive Board.

Additional space is also needed to discuss the reintroduction of Physics at Newcastle University.

Please could you let me know by reply if the School can use an extra 1,000 words?

Best Wishes,

Louise

Louise Jones
Faculty Equality & Diversity Advisor
Faculty of Science, Agriculture & Engineering (SAGe)
Newcastle University
Email: louise.jones@ncl.ac.uk
Tel: 0191 208 5923

List of acronyms:

CASAP	Certificate in Advanced Studies in Academic Practice
DELT	Director of Excellence in Teaching and Learning
DHoS	Deputy Head of School
DoE	Director of Expertise (Research management role, a level above RGL)
ECU	Equality Challenge Unit
EDI	Equality, Diversity and Inclusion
EPSRC	Engineering and Physical Sciences Research Council
FTE	Full Time Equivalent
HE	Higher Education
HoS	Head of School
IMA	Institute of Mathematics and its Applications
IWD	International Women's Day
IOP	Institute of Physics
KIT	Keeping in Touch
LMS	London Mathematical Society
MS	Former School of Mathematics and Statistics
MSP	School of Mathematics, Statistics and Physics
NSS	National Student Survey
NU	Newcastle University
NUAcT	Newcastle University Academic Track
PAG	Promotions Advisory Group
PAVD	Post Application Visit Day
PDR	Performance and Development Review
PDRA	Postdoctoral Research Associate
PGR	Postgraduate Research
PGT	Postgraduate Taught
PI	Principal Investigator
PS	Professional Services
REF	Research Excellence Framework
RFD	Research Funding Development team
RG	Russell Group
RGL	Research Group Leader
RSS	Royal Statistical Society
SAGe	Faculty of Science, Agriculture and Engineering
SAT	Self-Assessment Team
SEB	School Executive Board
SoE	School of Engineering
SRIC	School Research and Innovation Committee
TEF	Teaching Excellence Framework
T&R	Teaching and Research
T&S	Teaching and Scholarship
UG	Undergraduate
WIM	Women in Mathematics
WISDOM	Women in Science Doing Outstanding Maths

Name of institution	Newcastle University	
Department	School of Mathematics, Statistics and Physics	
Focus of department	STEMM	
Date of application	April 2019	
Award Level	Silver	
Institution Athena SWAN award	Date: April 2016	Level: Silver
Contact for application Must be based in the department	Tom Nye	
Email	tom.nye@ncl.ac.uk	
Telephone	0191 2085369	
Departmental website	http://www.ncl.ac.uk/maths-physics/	

Symbols:

	Action item implemented from 2015 application
	Key achievements since 2015 application
	Action item from this new application
	High Priority Action
	Medium Priority Action
	Low Priority Action

1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

Recommended word count: Bronze: 500 words | Silver: 500 words

An accompanying letter of endorsement from the head of department should be included. If the head of department is soon to be succeeded, or has recently taken up the post, applicants should include an additional short statement from the incoming head.

*Note: Please insert the endorsement letter **immediately after** this cover page.*

Equality Charters Manager
Equality Challenge Unit
7th Floor, Queens House
55/56 Lincoln's Inn Fields
London WC2A 3LJ

Dear James,

As Head of School and Chair of the Self-Assessment Team, I am pleased to offer my wholehearted support for the following application for a Silver Athena SWAN award, and the commitment of departmental resources (£15000/year) to the delivery of the 4-year Action Plan. I can also confirm that the information presented in the application (including qualitative and quantitative data) is an honest, accurate and true representation of the School of Mathematics, Statistics and Physics at Newcastle University.

On a personal level, my wife Sasi and I have experienced the pressures of raising two ambitious career-oriented daughters while we both pursue full-time careers. I therefore see the benefits of the Athena SWAN Charter in creating a supporting working environment, in which all staff have the opportunity to succeed.

In my previous role as Head of School of Marine Science and Technology, I was actively involved in the development of the successful application for a Bronze Athena SWAN award. As a result, I firmly believe in the value of the Athena SWAN framework to promote gender equality and create an inclusive environment in which staff and students thrive. Although there are different challenges in Mathematics, Statistics and Physics, the underlying theme of the under-representation of females across the academic pipeline remains the same. Recruitment and progression are therefore our key priorities.

Prior to this bid, and before my appointment, the (then) School of Mathematics and Statistics made two unsuccessful bids for an Athena SWAN bronze award. After the last unsuccessful bid (in 2015), members of the SAT reflected on the panel feedback and honestly evaluated the culture of the School and decided to follow through with the Action items they felt would have the most impact on improving the culture within the School. Successes since then have included:

- ✓ Creation of a dedicated Equality, Diversity and Inclusion (EDI) budget of £15000/year.
- ✓ Increase in female permanent academic staff from 4 to 10 since 2014 and an additional 2 to start in September 2019.
- ✓ Development of Maternity Guidelines, which have now been adopted in other Schools within the Faculty (see Case Study 1).
- ✓ Development of a Promotions Advisory Group.

- ✓ Scheduling all meetings *and seminars* within core hours (10am-4pm).
- ✓ Significant increase in the proportion of female invited seminar speakers from approximately 15% to 30%.
- ✓ Creation of a Restart Fellowship, with the first candidate beginning in autumn 2019.
- ✓ Unconscious bias training for all staff.
- ✓ Creation of a Carers' Fund.

These endeavours have had a positive impact in our School, which we hope to highlight in this document. The establishment of the Physics programme in 2015/16 has also been a major activity, which has provided us with an opportunity to embed EDI from the outset. For example, in staff/student recruitment activities, programme offering and seminar series. The programme lead (Dr. Rogers) received the 'Outstanding EDI Initiative' award for this work at the University's 'Celebrating Success in Equality, Diversity and Inclusion' awards in December 2017.

As a result of the development of Physics and the growth in Maths and Stats, we will be hiring approximately 30 new staff in the next five years. This allows us the opportunity to set the ambitious goal of recruiting 25% women and other under-represented groups. We are trialling two progressive methods of recruitment. First, we implemented a recruiting strategy, which focused on progressive advertising targeting under-represented groups and highlighting EDI as an essential criterion. This led to the successful appointment of two female astronomers. Second, I have personally led an initiative to implement a recruitment process developed by the consultancy company 'Diversity by Design'. This approach is currently being trialled through the appointment of one Lectureship in Applied Maths. We plan to compare the outcomes of these methods and share that learning as a Beacon Activity internally and externally. This has already begun with elements of our first recruiting strategy adopted in the University-wide fellowship scheme and shared abroad at other Universities.

We hope that these recruitment strategies combined with our newly established Promotions Advisory Group will help us reach our goal of significantly increasing the number of female academics along the pipeline. With more female academic role models, we anticipate an increase in the proportion of female undergraduates in Physics, another of our future priorities.

In view of our recent successes and track record of activities, we believe we have moved out of the planning phase and have demonstrated impact of our activities, both internally and externally. Although culture change does not happen overnight, we are proud of what we have achieved to date and remain committed to challenging gender inequality over the next 4 years.

Yours faithfully,



Andrew J. Willmott
Professor of Physical Oceanography and Head of School
School of Mathematics, Statistics and Physics

(773 words)

2. DESCRIPTION OF THE DEPARTMENT

Recommended word count: Bronze: 500 words | Silver: 500 words

Please provide a brief description of the department including any relevant contextual information. Present data on the total number of academic staff, professional and support staff and students by gender.

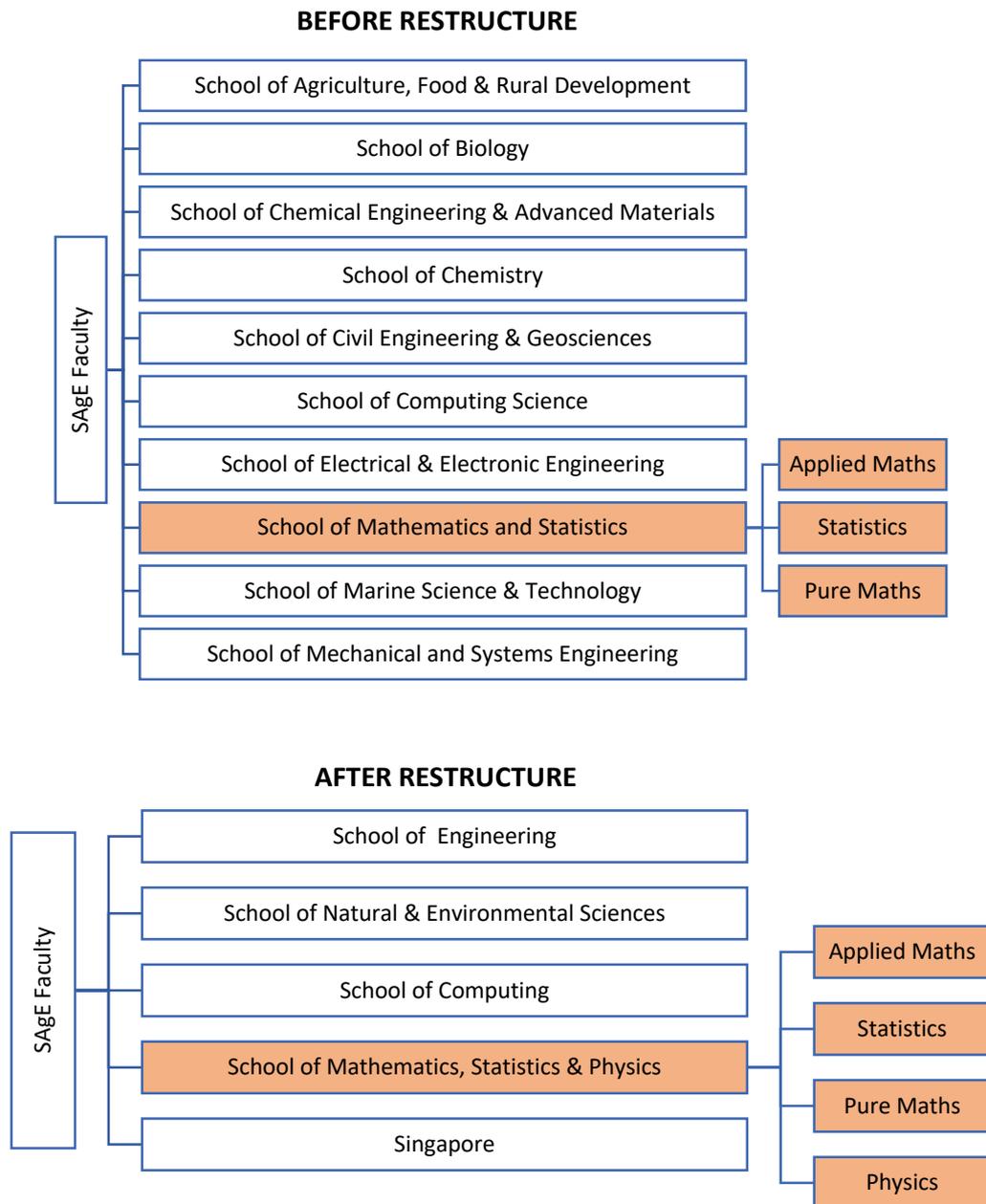


Top: Graduation ceremony 2017; bottom left: Postgraduate students and their supervisors; bottom right: Herschel building, where the School is located.

Context: Faculty Restructure and Inclusion of Physics

Mathematics and Statistics has a long history at Newcastle University and an international reputation. The School was ranked 11th in Mathematical Sciences in Research Excellence Framework (REF) 2014 and contributed to the University Teaching Excellence Framework (TEF) Gold Award. The newly launched Physics programme recently received accreditation from the Institute of Physics (IOP), in addition to accreditation from the Institute of Mathematics and its Applications (IMA) and Royal Statistical Society (RSS) for the Maths/Stats programmes.

Figure 1: Schools in SAgE faculty, before and after restructure in 2017.



In August 2017, following a restructure of the Faculty of Science, Agriculture and Engineering (SAgE) from ten to four UK-based Schools (Figure 1), Physics was incorporated with Mathematics and Statistics (MS) to form the School of Mathematics, Statistics and Physics (MSP). Prior to the restructure, the School had three sections: Applied Mathematics, Pure Mathematics and Statistics. Post-restructure, Physics comprises the fourth section. The various sections run independent seminars, have independent Research Group Leaders (RGLs) and generally have different cultures. To reflect this, some of the data presented in this application will be quoted by section so that variances within the School can be appreciated. This is particularly true for Physics, which has different issues with regard to EDI: in Physics the pipeline is not particularly “leaky” with few women throughout, while in Maths/Stats the pipeline is leaky with a large proportion of women entering and leaving.

The undergraduate (UG) Physics degree programme was withdrawn in 2004, with staff moving to a variety of pre-restructure Schools. The Physics degree programme was subsequently reintroduced in 2015 and the first cohort of students graduated in July 2018. Between 2014 and 2018, three academic staff were hired into MS (1 female, 2 males) and five were appointed by Electrical and Electronic Engineering (EEE) (1 female, 4 males) to support delivery of the new Physics programme. To minimise disruption to research, staff formerly appointed to support Physics in EEE are based and managed within the School of Engineering (SoE) but will relocate to MSP after the next REF cycle. For the purposes of this application, only the three staff managed within MSP contribute to our data analysis.

This merger presents challenges. First, the culture of Physics and Mathematics is different, both logistically (lab requirements, grant income) and scientifically. Second, the colocation of staff across schools presents challenges with integration and representation of staff. These challenges are being addressed by: a regular Physics working group (meeting every month), social gatherings approximately twice a week, joint seminars, inclusion of a Physicist from SoE on School Executive Board (SEB) and invitations to all School functions.

Opportunities for change

The development of a new Physics programme presents a unique opportunity to build the Physics unit with EDI embedded from the outset: representation of under-represented groups was considered in the choice of the Physics research fields and progressive advertising and recruiting will be used for all hires. The project has received recognition from the Vice Chancellor’s ‘*Celebrating Success*’ Awards, awarded best EDI initiative.

Our growth strategy for MSP requires us to hire at least 30 new staff over the next five years. We are therefore trialling two recruitment strategies both designed to optimise hiring women and under-represented groups. These strategies will be compared and best practice shared within the University and beyond.

Table 1: Breakdown of MSP community by gender for 2017/18.

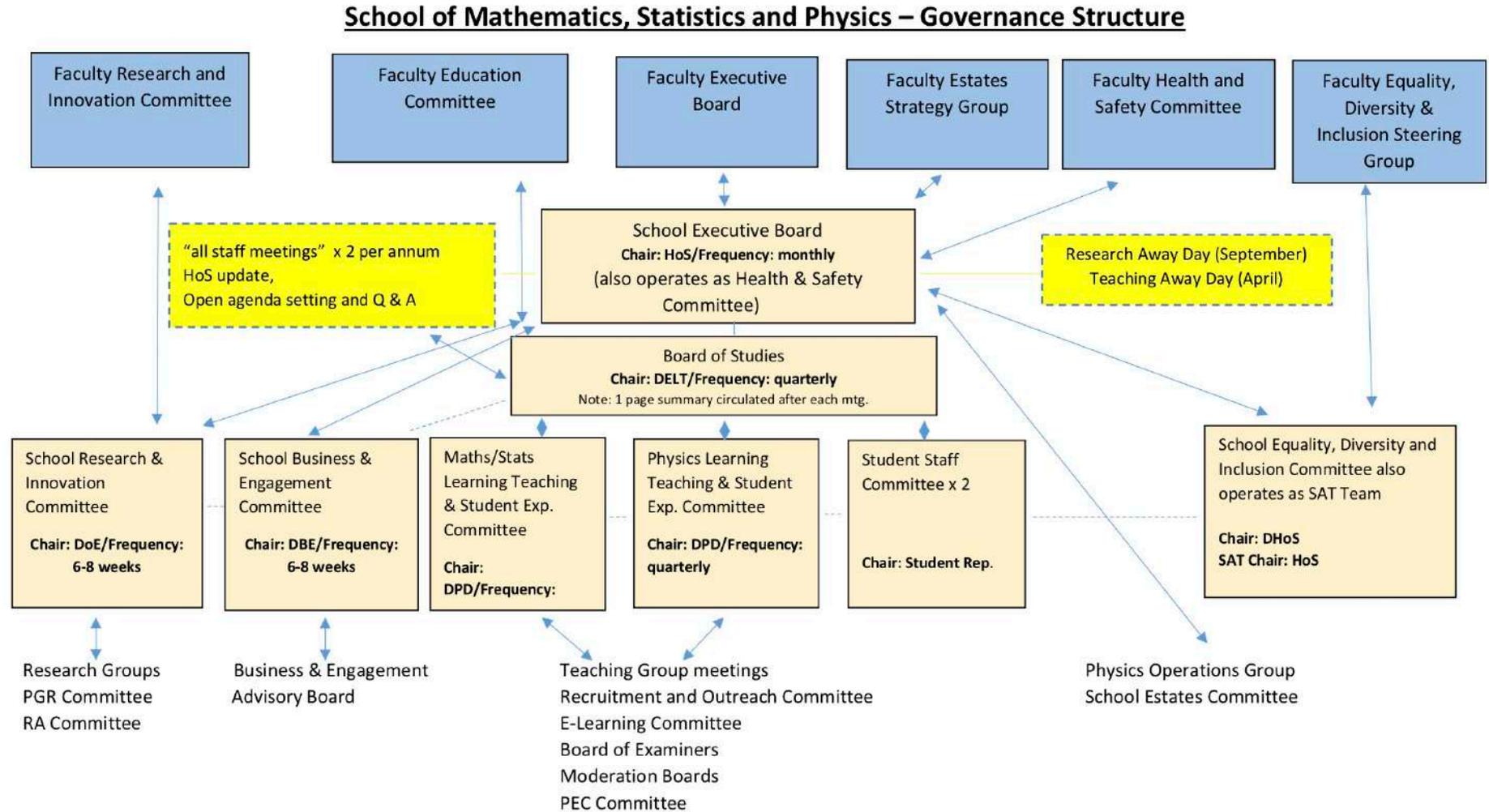
	Female	Male	Total	Percentage female
Professional services staff	13	5	18	72.2%
Undergraduates	251	532	783	32.0%
Postgraduates	24	46	70	34.3%
PDRAs*	6	11	17	35.3%
Academic staff	10	56	66	15.2%

(* Postdoctoral Research Associates)

As shown in Table 1, our main challenge is to address female under-representation at all academic levels and, in particular, to address the haemorrhaging of female academics after PDRA. During the past five years, MSP has seen substantial expansion in terms of academic staff (increasing from 34 academic staff in 2013/14 to 66 in 2017/18), professional services staff (increasing from 10 to 14.4 FTE), UG students (474 to 783) and postgraduate (PGR) students (30 to 70). The new academic staff are mostly at an early career stage and represent an improvement in gender balance, from four female academic staff to 10. This change in profile of the academic staff, together with the new Head of School (HoS) and the new context within the Faculty have brought new energy to the School and a fresh impetus to address gender issues and bring about culture change with regard to EDI.

(692 words)

Figure 2: MSP Governance structure



3. THE SELF-ASSESSMENT PROCESS

Recommended word count: Bronze: 1000 words | Silver: 1000 words

Describe the self-assessment process. This should include:

(i) A Description of the Self-Assessment Team

The current Self-Assessment Team (SAT) was established following the Faculty restructure in 2017 to include representation from all staff and student groups (Table 2). The HoS asked for volunteers and directly approached some individuals to ensure that different functions of the School were represented. The Faculty Equality and Diversity Advisor was also invited to join the SAT to offer advice on good practice. The SAT is made of 17 members with approximately equal gender balance (53% female, 47% male). We are conscious not to overload our female academic staff with excessive committee and outreach activities. Therefore, the number of female permanent academic staff on this committee is lower (2) than male (5), a proportion which is consistent with other School committees. Moreover, we believe that this balance better distributes the workload associated with EDI across all academic staff, no matter their gender, and embeds representation into all job families.

Table 2: SAT members (members of the School EDI committee indicated by *)

	Name	School / Committee roles	Additional information
	Dr Phil Ansell (M)	Senior Lecturer and Director of Excellence in Learning and Teaching Mathematics, Statistics & Physics Lead on student data and outreach	Phil is married with a son at primary school. His wife's career is also in learning and development.
	Clarissa Barratt* (F)	PGR student Mathematics, Statistics & Physics PGR student representative Co-hosted Newcastle-Durham 2018 PDRA/PGR workshop	Clarissa would like to address gender issues head on, ensuring an open and welcoming environment for people of all genders.
	Imogen Cresswell* (F)	Undergraduate student (Physics) Mathematics, Statistics & Physics UG student representative	Imogen is an undergraduate who understands the feeling of working in a male-dominated field and would like this to change.
	Andrea Dawson (F)	Senior Physics Technician Faculty of Science, Agriculture & Engineering Technical staff representative	Andrea has worked in industry and higher education in various technical roles and has caring duties for a spouse.

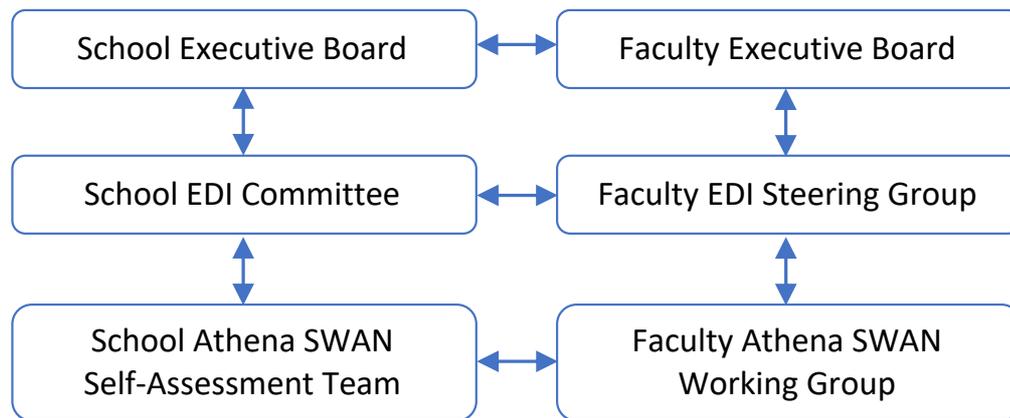
	Dr Jon Goss* (M)	Senior Lecturer in Material and Manufacturing School of Engineering Internal expert and lead on self-assessment process	Jon is in a dual-career family with caring responsibilities for two school-age children and an elderly parent.
	Dr Céline Guervilly* (F)	NERC Independent Research Fellow Mathematics, Statistics & Physics Lead on Action Plan Co-lead engagement with Durham University	Céline is an early-career researcher, who joined the School in 2016. Her spouse is an academic in Newcastle.
	Louise Jones (F)	Faculty Equality and Diversity Officer, Faculty Office Internal expert offering specialist advice	Louise is a member of the Faculty and University Athena SWAN Committees and the Faculty EDI Committee. Dual career partnership.
	Mr Christian Lawson-Perfect* (M)	E-Learning Officer Mathematics, Statistics & Physics Lead on diversifying MSP image	Christian has as a young daughter and personal interest in disability issues. Works part-time (0.8 FTE).
	Mr Matt Linsley (M)	Industrial Statistics Research Unit Manager Mathematics, Statistics & Physics Development of Impact Case Studies	Matt has three young children and shares childcare equally with his wife. Experience of flexible working and caring leave.
	Dr Tom Nye* (M)	Senior Lecturer in Statistics Mathematics, Statistics & Physics Athena SWAN academic lead Lead on staff survey	Tom has three young children and shares childcare equally with his wife. Experience of shared parental leave.
	Dr Sirio Orozco* (F)	PDRA Mathematics, Statistics & Physics PDRA representative Co-hosted Newcastle-Durham 2018 PDRA/PGR workshop	Sirio is married with one child. Interested in eradicating intimidation of women in the workplace.
	Rathish Ratnasingam* (M)	Postgraduate student Mathematics, Statistics & Physics PGR student representative Co-hosted Newcastle-Durham 2018 PDRA/PGR workshop	Rathish is an international student from Malaysia. Six years of experience of UK education system in different universities.

	Dr Tamara Rogers* (F)	Reader in Computational Astrophysics Director of Expertise Mathematics, Statistics & Physics Physics lead Co-lead engagement with Durham University	Tamara was the previous chair of School EDI Committee (2016-2017). Leading development of Physics programme.
	Jackie Storey (F)	Learning and Teaching Manager Mathematics, Statistics & Physics Professional Service staff representative Co-lead data analysis	Jackie has two adult children. Experience of working full- and part-time. Previously worked for the UN.
	Dr Michael White* (M)	Deputy Head of School Mathematics, Statistics & Physics Chair of School EDI Committee Lead on flexible working arrangements	Michael has two adult children. Experience of taking caring leave for child with special educational needs.
	Prof. Andrew Willmott* (M)	Head of School Mathematics, Statistics & Physics Chair of Athena SWAN SAT Lead on staff recruitment	Andrew has two adult children and a wife who has recently retired from a full-time research career.
	Christine Wright* (F)	School Manager Mathematics, Statistics & Physics Administrative lead Co-lead data analysis	Christine shares parental responsibility for a 7-year old with a husband who also works full-time. Experience of flexible working.

A SAT meeting in September 2018



Figure 3: EDI reporting lines within the School/Faculty.



Individual SAT members are also members of informal groups such as NU Disability Group, NU Carers Group and NU Women. Members of the SAT are also represented on the following more formal groups to promote joined-up communications:

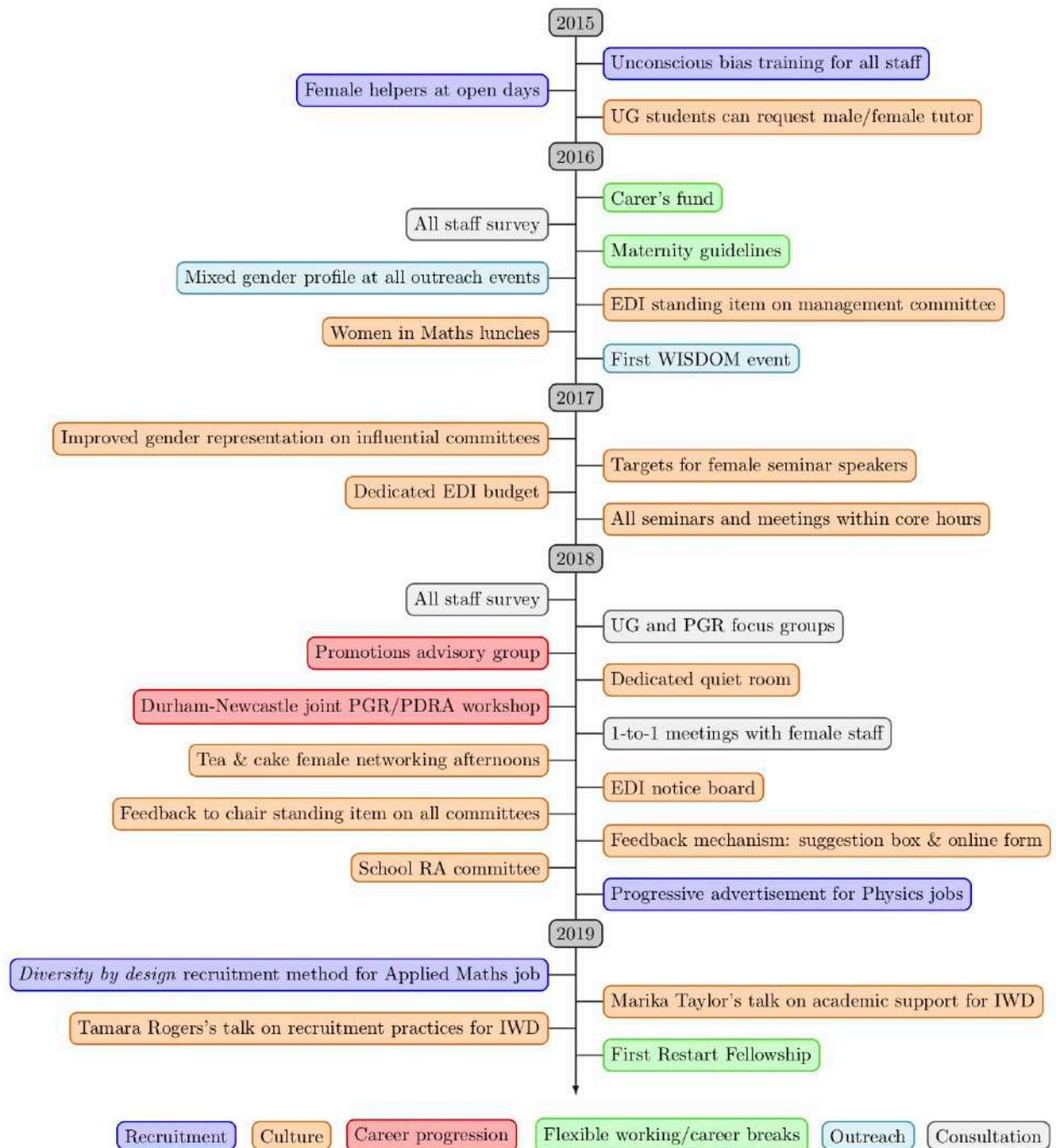
- **School EDI Committee**
Most members of SAT sit on the EDI committee
- **School Executive Board**
Phil Ansell, Tamara Rogers, Andrew Willmott, Michael White, Christine Wright
- **Faculty Athena SWAN Working Group**
Céline Guervilly, Louise Jones, Tom Nye, Christine Wright
- **Faculty EDI Steering Group**
Louise Jones, Michael White
- **Faculty Executive Board**
Andrew Willmott
- **University Athena SWAN SAT**
Jon Goss, Louise Jones

(ii) An Account of the Self-Assessment Process

The former School of MS established a SAT in 2013. Two previous applications for an Athena SWAN Bronze Award were submitted in 2013 and 2015, both of which were unsuccessful. The panel feedback highlighted areas for improvement, including increasing senior level buy-in and the need for a SMART Action Plan. Although the School did not get an award, we have continued to take positive action to promote gender equality over the last four years (Figure 4).

The current SAT was established in 2017, with both an expanded membership and the incorporation of Physics staff and students into the Athena SWAN process. There are clear reporting lines between the SAT, the School EDI Committee, and SEB, which is the main decision-making committee. Faculty level issues are explored by the Faculty Athena SWAN Working Group. The revised SAT initially met monthly, with the frequency increasing in the run up to the submission deadline. The overall development of the application was jointly led by Céline Guervilly, Tom Nye and Tamara Rogers.

Figure 4: Timeline of activities over the previous four years.



The following activities have been carried out as part of the self-assessment process:

- **Analysis of staff and student data** for the last four years to identify key trends, including comparison to Russell Group (RG) HESA benchmarking data.
- **Consultation with staff and students:** An anonymous staff survey was conducted in 2016 and in 2018 (70% and 60% overall response rate, gender not always reported), and will continue on a biennial basis (**AP 1.2**). One-to-one interviews were also held in April 2018 between the Athena SWAN Academic Lead, Tom Nye, and all female academics and Professional Service staff (25 in total) to learn more about their experiences in the School.



These interviews were held as a response to a suggestion from a female academic. Student focus group sessions were also held in April 2018 with UG and PGR students (10 and 11 participants respectively). Data from these activities have informed Sections 4 and 5.

- **Review of other departmental applications** with Silver and Gold Athena SWAN awards in Mathematics, Statistics and Physics to identify what works well elsewhere.
- **Internal and external engagement** to learn and share best practice, staff have attended the activities and workshops shown in Table 3 and Table 4. This will continue to be supported by the School EDI budget (£15000/year). The completed application and Action Plan were also placed on the School intranet for staff to comment on.

Table 3: Internal engagement activities

Timescale	Activity
Ongoing	Faculty Athena SWAN Working Group: meets on a quarterly basis to discuss common challenges and share best practice.
Ongoing	NU Women: the University's network for female staff.
Ongoing	Internal Athena SWAN Assessment Panels: support for internal peer review process.
March 2016	Going for Silver workshop: highlighting the requirements for Silver awards.
April 2016	Athena SWAN Admin Forum: implementing Action Plans.
May 2016	Athena SWAN Cross Faculty Forum: expanded Charter.
June 2016	WISDOM event: collaborating with the School of Computing to deliver the annual Women in Science Doing Outstanding Maths outreach activity.
August 2016	Make a Difference Campaign: Faculty event on running Outreach events.
September 2016	VC Think Tank on Diversity: consultation exercise to inform University strategy.
October 2016	NU Women Professional Services launch event: workshop to inform the development of future activities.
November 2016	Athena SWAN Cross Faculty Forum: developing the business case for diversity.
December 2016	Athena SWAN Admin Forum: Professional and Technical staff career development.
March 2017	International Women's Day 2017: institutional celebratory event
May 2017	WISDOM event: collaborating with the School of Computing to deliver the annual Women in Science Doing Outstanding Maths outreach activity.
November 2017	Athena SWAN Cross Faculty Forum: intersectionality
December 2017	Celebrating Success in EDI: Dr Tamara Rogers wins best staff initiative award.
March 2018	Athena SWAN Cross Faculty Forum: Aiming Higher – Going for Gold
March 2018	International Women's Day: afternoon tea networking and discussion group held for female staff and students.
May 2018	WISDOM event: collaborating with the School of Computing to deliver the annual Women in Science Doing Outstanding Maths outreach activity.
July 2018	Northern Pride: rainbow lanyards distributed in the School to promote awareness of broader gender issues during Pride season and beyond.
September 2018	Rainbow@NCL Launch: attendance at network launch event and rainbow flag raising ceremony to show visible support for LGBT inclusion.
October 2018	Women in Maths Day: joint conference with the School of Computing.
October 2018	Show Racism the Red Card: fundraising activity to promote race equality during Black History Month.

November 2018	Computing EDI week: attendance at events organised by the School of Computing with a view to hosting our own School EDI week in future years.
November 2018	School consultation: Athena SWAN application circulated for feedback from all School members
February 2019	Application considered and approved by SEB
February 2019	Stonewall lunch and learn session on trans inclusion
March 2019	International Women’s Day 2019: Visit and talk by Prof Marika Taylor (Southampton) on “academic cooperation and collegiality”

Table 4: External engagement activities

Timescale	Activity
Ongoing	Athena SWAN Assessment Panels – Jon Goss, Tamara Rogers, Jackie Storey and Louise Jones have regularly participated in external panel meetings.
2016	London Mathematical Society Good Practice Scheme (focus on recruitment) - SAT members attended.
2016	London Mathematical Society – the Chair of the LMS Good Practice Scheme, Professor Peter Clarkson, visited Newcastle to provide feedback on the unsuccessful application.
February 2017	Athena SWAN North East Regional Network – hosted by Newcastle University.
May 2017	Athena SWAN Open Presentation – Professor John Derrick from Sheffield University visited Newcastle to give a talk on applying for a Silver award.
June 2017	Becoming a Professor – Professor Carron Shankland from the University of Stirling visited Newcastle to give a presentation on career development and wellbeing.
September – December 2017	Other departmental applications – review of existing best practice in other Mathematics, Statistics and Physics departments which hold Silver and Gold Athena SWAN awards.
December 2017	London Mathematical Society Good Practice Scheme - SAT members attended.
June 2018	Diversity by Design – Simon Fanshawe and Roy Hutchins, Directors of Diversity by Design, delivered a session to SEB and RGLs about diversity and strategy for the School. A further session was held in October 2018 with the committee for recruiting Applied posts.
October 2017	Institute of Physics – discussion with Jenni Dyer (IOP) and SAT members regarding increasing female representation in Physics student body
March 2018	Durham University – discussions with Durham SAT and HoS (Anne Taormina) regarding joint efforts in applying for Silver Awards.
November 2018	University College London – the academic lead for the UCL Silver award, Professor Robb McDonald, provided an external opinion on the draft application. University of Kent – Peter Clarkson, former chair of LMS Good Practice Scheme provided feedback on draft application.
March 2019	University of Southampton – Marika Taylor, deputy Head of School of Mathematical Sciences, provided feedback on draft application.
March 2019	Aarhus University, Denmark – Tamara Rogers gives a talk on recruitment practices for International Women’s Day.
April 2019	London Mathematical Society Good Practice Scheme (focus on supporting and mentoring of early-career researchers) – SAT members attended.



As Tables 3 and 4 show, consultation occurred at many levels from staff attending workshops to inviting experts to the School. This has allowed us to identify best practices to implement within the School. We also have an ongoing relationship with the SAT of the Department of Mathematics at Durham University to share good practice and hold joint events. We will continue our existing activities with Durham (**AP 1.3**). We will invite Silver and Gold Athena SWAN award holders to visit the School in order to learn from their experiences, and members of the SAT will also arrange to visit those departments. For example, Prof Marika Taylor (Southampton) visited MSP and Dr Tamara Rogers (MSP) visited Aarhus University in Denmark to give talks on diversity issues for International Women's Day 2019. We shall also continue to draw upon insight and critical peer review with colleagues in professional bodies such as the London Mathematical Society (LMS) and the IOP.

(iii) plans for the future of the self-assessment team



Following submission, the SAT will meet every two months to plan future activities, review progress of the Action Plan and monitor use of the £15k EDI budget. The SAT will continue to report on progress, findings and recommendations to the School EDI Committee and SEB (**AP 1.1**). SAT members will also continue to play an active role in the Faculty Athena SWAN Working Group and institutional SAT. The School will host the Faculty Athena SWAN Working Group meeting in 2019 and lead on a discussion of support for promotions, including the creation of a new School Promotions Advisory Group (PAG). We will also participate in University activities to support the renewal of the institutional Silver award in November 2019.



To promote continuity and succession planning, academic and professional staff representatives on the SAT will rotate every three years. UG and PGR student representatives will rotate every two years. School EDI policies will be better communicated through (**AP 7.6**):

- standing item on regular School meetings,
- email circulation lists,
- the School newsletter,
- the School intranet,
- notice board in the new common room.

(980 words)

 Action List for 2019 Application
● AP 7.6 Improve communication on EDI policies in the School
● AP 1.3 Expand joint event with Durham Maths department to include Northumbria University as well as Physics departments.
● AP 1.1 Annual reporting of gender ratio of UG/PGR/PDRA/academic staff numbers to SEB and EDI committee.
● AP 1.2 Biennial staff survey to determine equality and diversity attitudes and experience.

4. A PICTURE OF THE DEPARTMENT

Recommended word count: Bronze: 2000 words | Silver: 2000 words

4.1. Student data

If courses in the categories below do not exist, please enter n/a.

- (i) Numbers of men and women on access or foundation courses

N/A

- (ii) Numbers of undergraduate students by gender

Full- and part-time by programme. Provide data on course applications, offers, and acceptance rates, and degree attainment by gender.

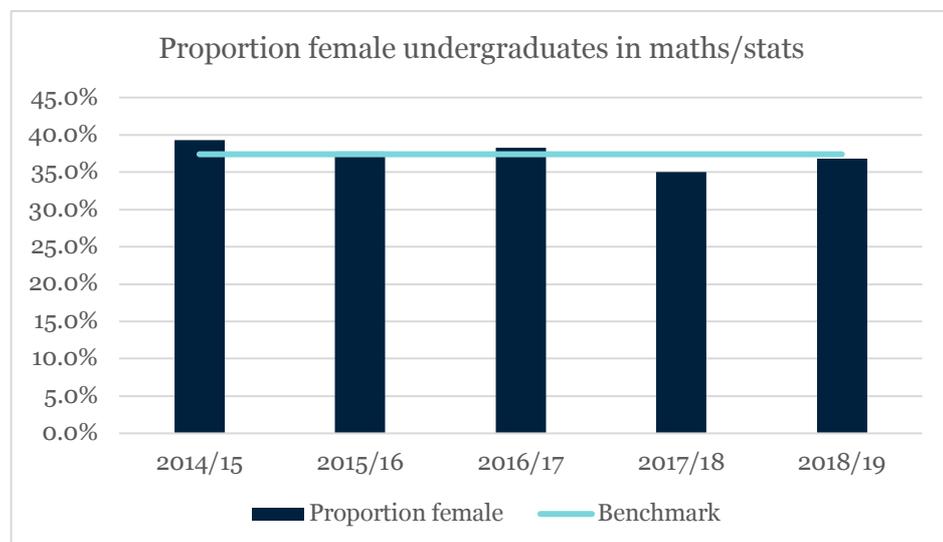
Degree programmes in Maths/Stats and Physics are treated separately. When available, data from 2018/19 is included.

Maths and Stats programme

Table 5: UG students in Maths/Stats by gender.

	Female	Male	Total	Proportion female
2014/15	205	317	522	39.3%
2015/16	207	341	548	37.8%
2016/17	208	335	543	38.3%
2017/18	230	427	657	35.0%
2018/19	263	451	714	36.8%

Figure 5: Proportion of female UG in Maths/Stats for all stages.



The benchmark proportion of female UG students in Maths/Stats is 37.4% (RG average 2016/17). Figure 5 shows that the proportion of female UG in Maths/Stats has been close to the RG average over the last four years. We saw a drop in female entrants in 2017, but the number returned to previous levels in 2018. There are very few part-time, mature or overseas students (under 10 in total). The recruitment process for UG is the principal means by which MSP can address gender biases within the UG population. The recruitment cycle takes the following form.

- University wide open days are held in June and September.
- UCAS application process starts in October.
- Applications are processed as they arrive centrally, and applications with non-standard qualifications are considered separately by the School admissions team.
- All students who present with 3 A-levels, including A-level Maths are offered a place.
- There is a standard offer visible on the University web site. Further Maths is not a requirement. Students from Widening Participation backgrounds receive a lower offer through the PARTNERS supported entry scheme.
- All students who are made an offer are invited to School Post-Application Visit Day (PAVD). These are student-led with support from academic and PS staff. The student helpers are paid for their time. The gender ratio of helpers is 50:50 in all years described.
- Students who just miss their required grades are ranked by grade profile, and some are then accepted at confirmation. We participate in the University Clearing process each year.

The recruitment team and advertisement material have been revamped since 2015 to include better diversity. The impact of this is not necessarily seen in the data yet, although there might be some time lag.

Table 6 and Figure 6 give data about the gender breakdown of the recruitment process over the past four years.

Table 6: UG recruitment in Maths/Stats.

		Female	Male	Total	Proportion female
2014/15	Applications	301	500	801	37.6%
	Offer	274	422	696	39.4%
	Accept	66	105	171	38.6%
2015/16	Applications	399	578	977	40.8%
	Offer	346	484	830	41.7%
	Accept	76	109	185	41.1%
2016/17	Applications	327	493	820	39.9%
	Offer	284	419	703	40.4%
	Accept	75	114	189	39.7%
2017/18	Applications	433	780	1213	35.7%
	Offer	355	636	991	35.8%
	Accept	75	162	237	31.6%



Figure 6: UG recruitment in Maths/Stats.

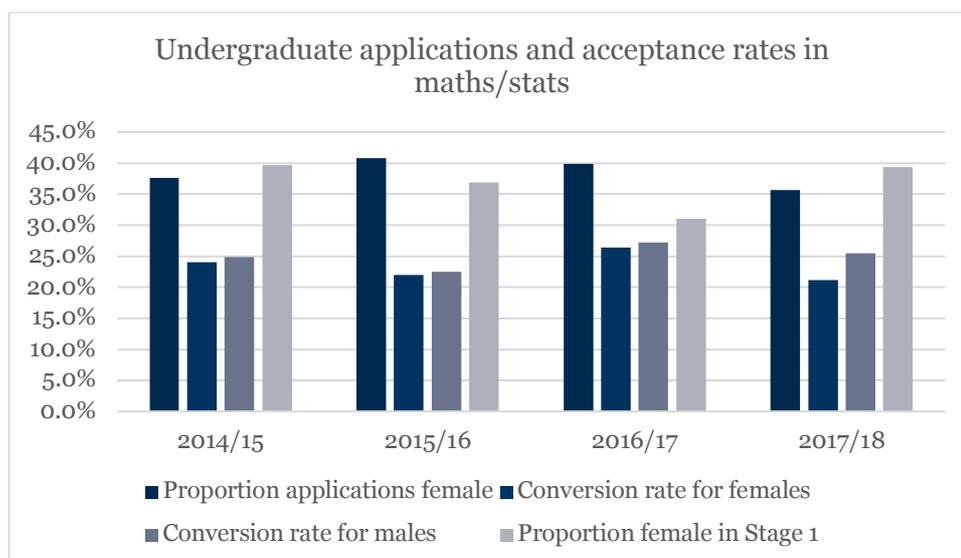


Figure 6 shows the proportion of applications from females at each stage of the recruitment process. For each academic year, the last bar corresponds to the proportion of female students starting Stage 1 the following year. The offer to females and males is the same, the proportion of female and male applicants that receive an offer is the same (approximately 85%) and the conversion rate (i.e. the proportion of applicants by gender who accept our offer) is also the same, with small variability year-on-year. The applications process has not changed over the course of time shown in Figure 6, except in the 2016/17 cycle when the standard offer was increased. There was a subsequent decrease in the proportion of female students in Stage 1 starting in 2017. However, the offer remained the same for 2017/18 and the proportion of female Stage 1 students increased to above the RG average.

There is an inherent natural variability in the proportion of female applications and acceptances, leading to variation around the RG mean in Figures 5 and 6. Of students taking A-level Maths, 38.8% are female (data from the LMS for 2014/15), and the proportion of female applications closely matches this benchmark. The gender profile of students will continue to be monitored to check for year-on-year trends (**AP 1.1**), and this will lead to the School changing aspects of the recruitment process when required.

Since 2014, the Director of Recruitment and Outreach has implemented the following initiatives in response to the changing landscape in secondary education and the gender profile of A-level Maths students in the North East of England (see 5.6(viii)):

- Annual WISDOM (Women in Science doing outstanding Maths) event.
- Mixed gender profile of speakers at all other outreach events.
- Publication of student profiles with mixed gender on the School website.

These will continue going forward.



Table 7: UG degree attainment in math/stats.

		Female	Male	Total	Proportion female
2014/15	1st	25	17	42	59.5%
	2:1	20	29	49	40.8%
	2:2	15	15	30	50%
	3rd	2	2	4	50%
	other	2	0	2	100%
2015/16	1st	21	23	44	47.7%
	2:1	21	57	78	26.9%
	2:2	13	23	36	36.1%
	3rd	3	2	5	60%
	other	1	7	8	12.5%
2016/17	1st	21	34	55	38.2%
	2:1	30	22	52	57.7%
	2:2	10	12	22	45.5%
	3rd	0	10	10	0%
	other	2	9	11	18.2%
2017/18	1st	14	30	44	31.8%
	2:1	22	21	43	51.2%
	2:2	18	21	39	46.2%
	3rd	1	10	11	9%
	other	2	4	6	33.3%

Figure 7: UG degree attainment in math/stats.

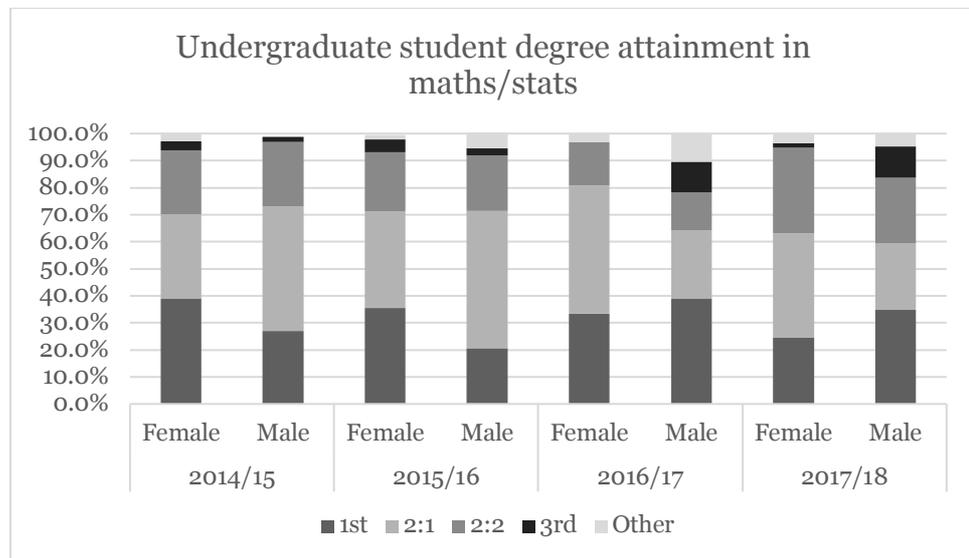


Table 7 and Figure 7 give the breakdown of degree classifications in UG Maths/Stats students by gender. The proportion of females gaining 1sts and 2:1s is very similar to the proportion for males. However, the proportion of females obtaining 1sts has been lower than the proportion of males in the last two years. Worryingly, over the same time, the proportion of males obtaining 3rds has increased. The results for 2017/18 correspond to the first cohort of students to experience a revised



curriculum. Under the new curriculum there are more modules with large pieces of in-course assessment, but in general the weighting of exams has increased. We hypothesize that more emphasis on exams has negatively impacted our female students, but the ultimate cause is unknown. We will investigate the curriculum and assessment to determine the cause of this negative change (AP 2.2). If necessary, the curriculum will be updated in accordance with our findings.

Physics programme

Table 8: UG students in Physics by gender.

	Female	Male	Total	Proportion female
2015/16	6	33	39	15.4%
2016/17	9	67	76	11.8%
2017/18	21	105	126	16.7%
2018/19	24	131	155	15.5%

Figure 8: UG students in Physics by gender.

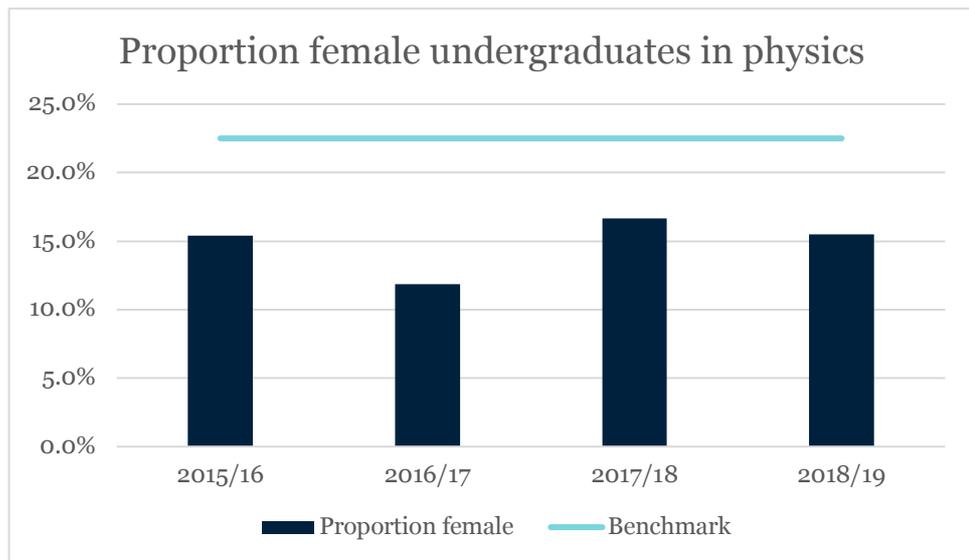
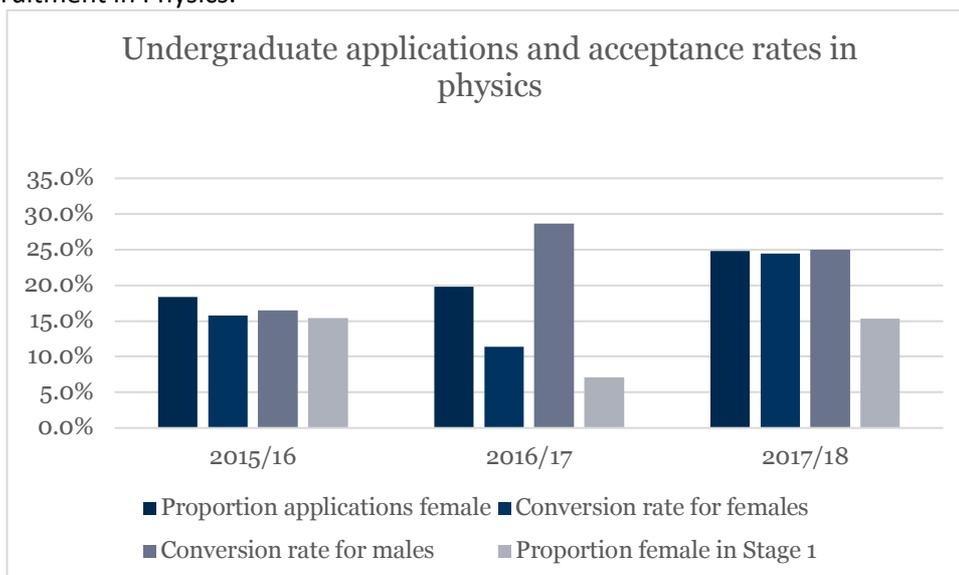


Table 9: UG recruitment in Physics.

		Female	Male	Total	Proportion female
2015/16	Applications	40	178	218	18.3%
	Offer	38	176	214	17.7%
	Accept	6	29	35	17.1%
2016/17	Applications	38	154	192	19.8%
	Offer	35	122	157	22.3%
	Accept	4	35	39	10.3%
2017/18	Applications	55	167	222	24.8%
	Offer	49	148	197	24.9%
	Accept	12	37	49	24.5%

Figure 9: UG recruitment in Physics.



The benchmark proportion of female UG students in Physics is 22.5% (RG average 2016/17).

The recruitment cycle in Physics is almost the same as for Maths/Stats. The principal difference is that currently, PAVDs are staff-led with some student helpers. Table 9 and Figure 9 analyse the recruitment process in Physics by gender. Data for 2014/15 were not available. Because the programme is new, the number of applications in Physics is low so there is more variability. Data from the IOP shows that the proportion of A-level Physics students that are female is 22.5% (2014/15), and the proportion of applications from females is close to this benchmark, varying between 18% and 25%. The proportion of female students in Stage 1 is consistently lower than the proportion of applications from females, even when the conversion rate is similar for both genders.

The Physics programme is new, and it is possible that female students are more risk averse to the new programme. There is also some evidence from partner institutions that female applicants respond to high NSS scores and we did not have NSS scores until 2018. These low numbers are worrying, and we will be working the IOP and other Physics departments holding Juno awards to identify practices that might increase these numbers (AP 1.4, 1.5). We are doing what we can to have female representation at open days and PAVD. We have very few Physics staff, and particularly female staff, so having good representation at these events is challenging, but we recognize this as a priority activity (AP 2.1). Despite these low proportions, the regular increase in the proportion of female applications since 2015 is encouraging. We hope that with more female academic role models, an established programme and good NSS scores, we will increase the number of female UG students in Physics.

Table 10: UG degree attainment in Physics.

		Female	Male	Total	Proportion female
2017/18	1st	1	3	4	25%
	2:1	0	7	7	0%
	2:2	1	2	3	33.3%
	3rd	0	0	0	0%
	other	1	2	3	33.3%



July 2018 saw the first cohort of students graduate in Physics. The breakdown of degree classifications by gender is given in Table 10. The very low numbers of students make it difficult to draw meaningful conclusions from these data. The strongest students continued into Stage 4 of the four-year degree programme, and so are not included in this table. In 2018/19, three out of 14 four-year students are female (21.4%).

(iii) Numbers of men and women on postgraduate taught degrees

Full- and part-time. Provide data on course application, offers and acceptance rates and degree completion rates by gender.

N/A

(iv) Numbers of men and women on postgraduate research degrees

Full- and part-time. Provide data on course application, offers, acceptance and degree completion rates by gender.

There are formally no PGR students in Physics, so the data presented in this section include all PGR students from MSP. The benchmark proportion is 27.3% female PGR students (RG average 2016/17).

Table 11: PGR students in MSP by gender.

	Female	Male	Total	Proportion female
2015/16	14	43	57	24.6%
2016/17	25	45	70	35.7%
2017/18	24	46	70	34.3%
2018/19	27	65	92	29.4%

Figure 10: PGR students in MSP by gender.

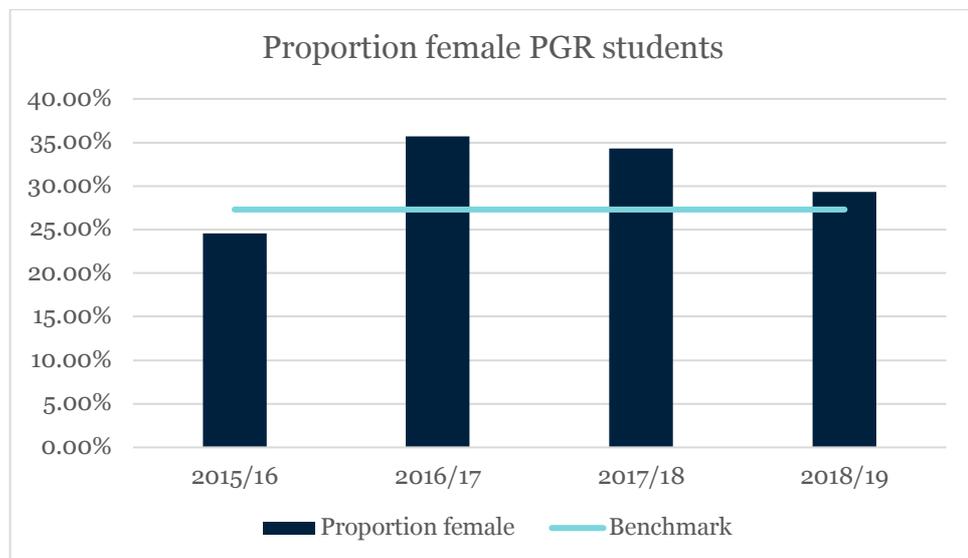


Table 11 and Figure 10 give the breakdown of PGR students in MSP by gender. The proportion of female PGR students is close to the RG average year-on-year. Around 3 students study part-time each year, with the numbers generally balanced between genders. Table 12 and Figure 11 provide details of the PGR recruitment process by gender. The recruitment process is subject to more variation than for UG. This is because the nature of the projects on offer from the School and funding sources vary substantially year-on-year, and because there is considerable heterogeneity among the applicants e.g. applicants who are current UG, UK-based applicants and applicants from overseas.

Table 12: PGR student recruitment.

		Female	Male	Total	Proportion female
2014/15	Applications	64	157	221	29.0%
	Offer	16	40	56	28.6%
	Accept	5	17	22	22.7%
	Started	2	13	15	13.3%
2015/16	Applications	84	129	213	39.4%
	Offer	17	21	38	44.7%
	Accept	12	11	23	52.2%
	Started	12	9	21	57.1%
2016/17	Applications	69	125	194	35.6%
	Offer	16	21	37	43.2%
	Accept	7	15	22	31.8%
	Started	5	12	17	29.4%
2017/18	Applications	71	129	200	35.5%
	Offer	9	29	38	23.7%
	Accept	8	24	32	25%
	Started	6	18	24	25%

Figure 11: PGR student recruitment.

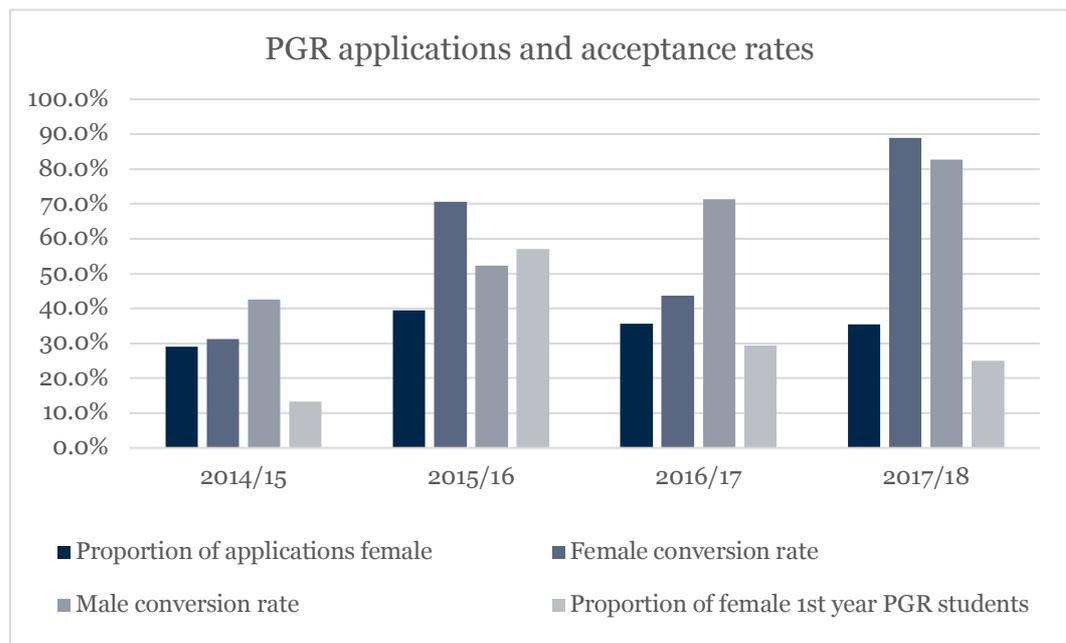




Figure 11 shows the proportion of applications from females at each stage of the recruitment process. The proportion of female applicants, the conversion rates and the proportion of female starters is variable year-on-year. In general, offers to female applicants at least match the applicant pool, but there is significant variability in acceptance rate. Our overall female PGR proportion is around 30%, and comparable to RG average (27%). The broad conclusion from this analysis is that the proportion of female PGR is healthy in comparison to the RG mean. We will continue to assess our recruitment strategies to maintain or grow our numbers of female PGRs (AP 1.1).

The completion rate for PhDs is nearly 100%: two male students withdrew in 2015/16. No other students failed to complete since 2014. The completion rate is the highest across all Schools in the Faculty.

(v) Progression pipeline between undergraduate and postgraduate student levels

Identify and comment on any issues in the pipeline between undergraduate and postgraduate degrees.

Figure 12: Progression pipeline from UG to PGR degrees.

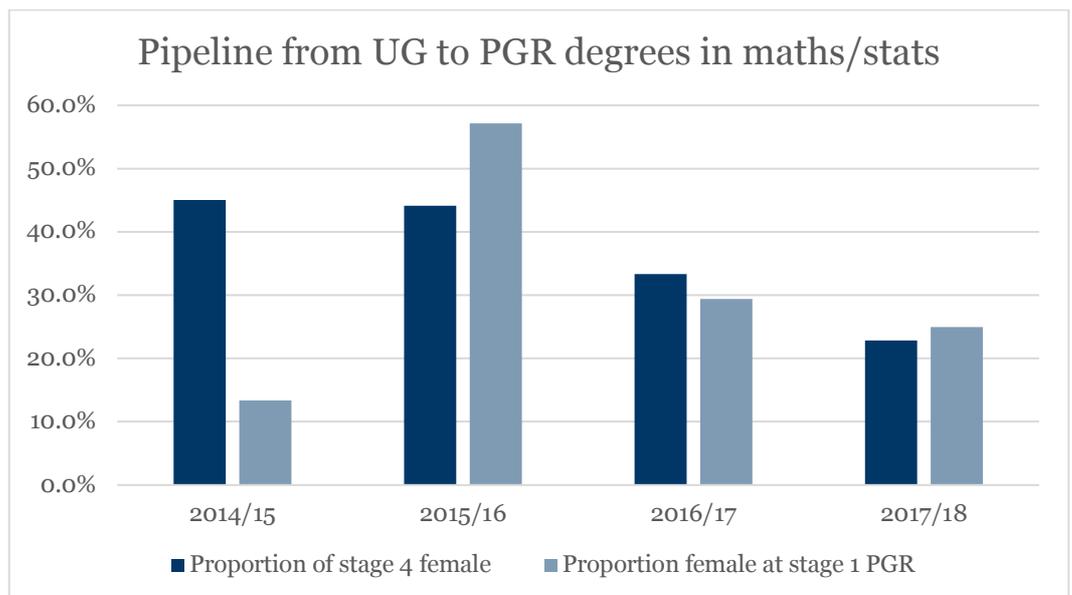


Figure 12 shows the proportion of females across the pipeline from UG to PGR degrees. MSP offers 4-year MMath and MMathStat degree programmes, and approximately 35% of our PGR students are drawn from these. Figure 12 should be interpreted in the overall context of around 38% female students on UG degrees year-on-year (see Figure 5). Although the conversion rate is not troubling, the precipitous drop in 2016/17 in proportion of UG female students taking the fourth year is. We do not know the reason for this change. Therefore, in coming years, we will encourage promising female UG students at the end of stage 1 and 2 to stay for a fourth year by sending tailored letters from the HoS encouraging them to switch from the BSc to MMath/MMathStat/MPhys (AP 2.4).





Action List for 2019 Application

- **AP 1.4** Apply for Juno supporter award
- **AP 2.1** Increase the number of female Physics UG students to RG average.
- **AP 2.4** Letter to the top performing female Stage 1 and 2 students to encourage them to stay for a fourth year.
- **AP 2.2** Review effect of new curriculum and assessment on female/male performance.
- **AP 1.5** Apply for Juno practitioner award.
- **AP 1.1** Annual reporting of gender ratio of UG/PGR/PDRA/academic staff numbers to SEB and EDI committee.

4.2. Academic and research staff data

- (i) Academic staff by grade, contract function and gender: research-only, teaching and research or teaching-only

Look at the career pipeline and comment on and explain any differences between men and women. Identify any gender issues in the pipeline at particular grades/job type/academic contract type.

Table 13: Academic staff data.

	Year	Female	Male	Total	Proportion female
PDRA	2014/15	3	9	12	25%
	2015/16	3	8	11	27.3%
	2016/17	3	10	13	23.1%
	2017/18	6	11	17	35.3%
Lecturer (T&R)*	2014/15	1	10	11	9.1%
	2015/16	2	15	17	11.8%
	2016/17	2	14	16	12.5%
	2017/18	2	16	18	11.1%
Senior lecturer (T&R)	2014/15	1	5	6	16.7%
	2015/16	1	7	8	12.5%
	2016/17	0	11	11	0%
	2017/18	1	13	14	7.1%
Reader	2014/15	1	3	4	25%
	2015/16	1	3	4	25%
	2016/17	2	3	5	40%
	2017/18	2	3	5	40%
Professor	2014/15	1	11	12	8.3%
	2015/16	1	11	12	8.3%
	2016/17	1	12	13	7.7%
	2017/18	1	14	15	6.7%
Lecturer (T&S)** / teaching fellow	2014/15	2	3	5	40%
	2015/16	3	6	9	33.3%
	2016/17	3	5	8	37.5%
	2017/18	3	5	8	37.5%
Senior lecturer (T&S)	2014/15	0	3	3	0%
	2015/16	0	3	3	0%
	2016/17	0	3	3	0%
	2017/18	0	3	3	0%
Senior researcher	2014/15	0	2	2	0%
	2015/16	0	2	2	0%
	2016/17	0	2	2	0%
	2017/18	1	2	3	33.3%

*T&R: Teaching and Research (All Readers and Professors are T&R) **T&S: Teaching and Scholarship

Figure 13: Proportion of female staff in professoriate and non-professoriate academic staff.

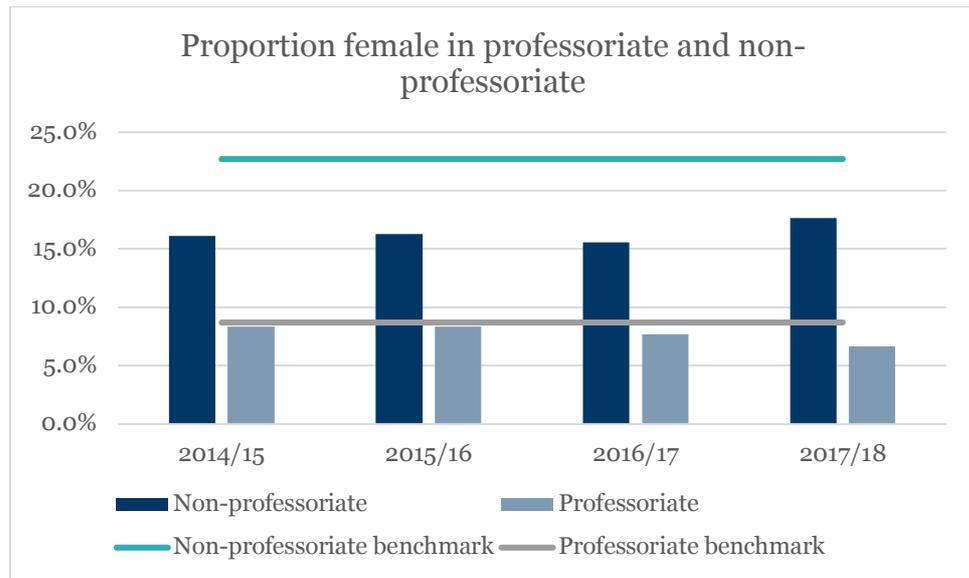
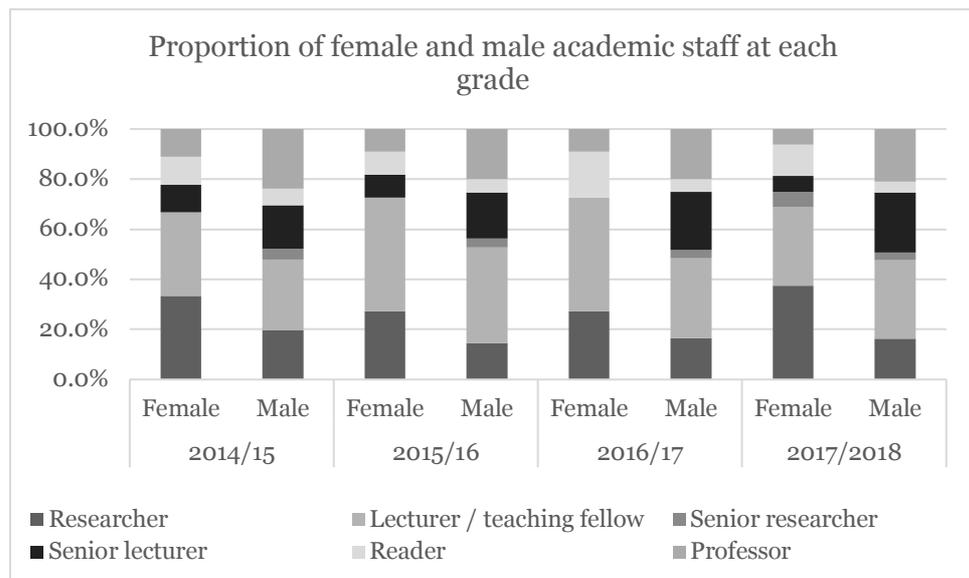


Figure 13 shows the proportion of women in non-professoriate and professoriate permanent academic positions. The benchmark data (22.7% non-professoriate and 8.7% professoriate) are for all HE institutions in the UK and were taken from the LMS data 2014/15. Our proportion of female staff is low at all levels. Clearly, we need to tackle this serious problem. We have three major activities in the coming years to tackle this problem (which will be described in more detail in Section 5):

- Mentoring of PDRAs applying for academic positions (**AP 5.2**).
- Recruiting under-represented groups with a target of hiring 25% females (**AP 4.1**).
- Promotions Advisory Group (PAG, **AP 4.4**).



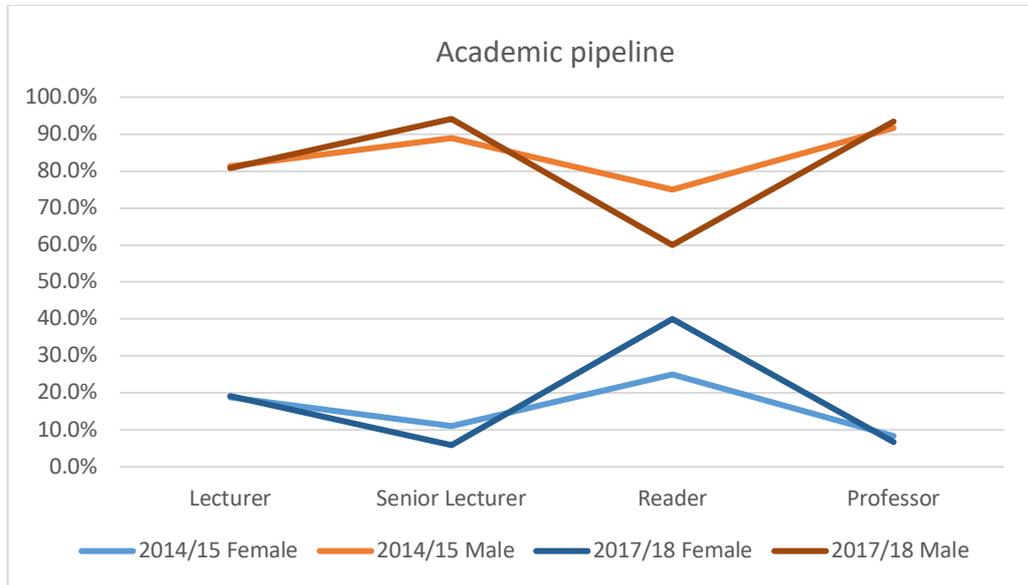
Figure 14: female and male academics by grade.





Of females in the School, Figure 14 shows that a disproportionate number are employed as PDRAs on fixed term contracts. This highlights the standard leaky pipeline problem. To address this, we will implement a mentoring programme for PDRAs applying for fellowships and permanent positions (see 5.3(iii), AP 5.2).

Figure 15: Academic pipeline in 2014/15 and 2017/18.



In addition to having low numbers of female staff at the lecturer level, we have particularly low numbers in the professoriate, with only one female professor *currently or ever* in the School. Note that the high percentage of female Readers is not a significant feature because the total number of readers in the school is particularly low. To address the leaky pipeline problem, we have implemented a Promotions Advisory Group (see 5.1(iii)).

Figure 16: Proportion of female and male staff on Teaching and Scholarship contracts.

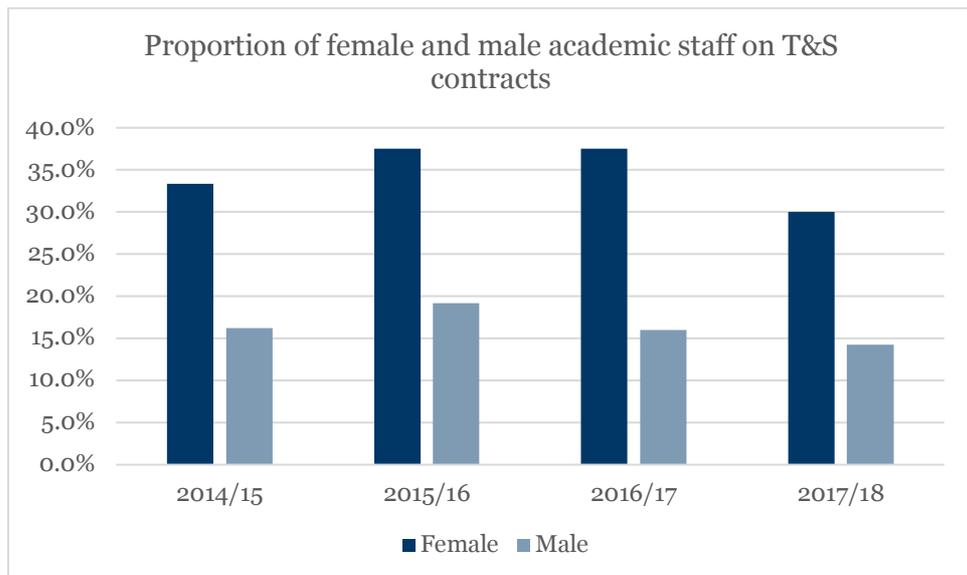


Figure 16 shows the proportion of females versus males on T&S contracts. Overall there are relatively few academics on T&S contracts (11 staff) and of these three are females. This represents a

relatively high percentage of women on permanent contracts, primarily because there are so few female academics. Plans for growth in the School primarily involve appointments on T&R contracts: we envisage the proportion of women on T&S contracts to reduce as more women are appointed.

SILVER APPLICATIONS ONLY

Where relevant, comment on the transition of technical staff to academic roles.

Transition of technical staff to academic roles is generally not applicable in the School, but with Physics joining the School it could be relevant in the future. Initially this will be addressed through PDRs, but as this becomes relevant in our School this issue will be revisited.

(ii) Academic and research staff by grade on fixed-term, open-ended/permanent and zero-hour contracts by gender

Comment on the proportions of men and women on these contracts. Comment on what is being done to ensure continuity of employment and to address any other issues, including redeployment schemes.

We have no staff on zero-hour contracts. The only staff on fixed term contracts are PDRAs and four teaching fellows (all male). Two former teaching fellows (both males) were transitioned to permanent T&S staff in 2018 as part of two-body solutions (academic personal partnerships).

(iii) Academic leavers by grade and gender and full/part-time status

Comment on the reasons academic staff leave the department, any differences by gender and the mechanisms for collecting this data.

No female academics have left the School in the last five years, other than PDRAs. Two male academics left in the last five years, both for family reasons. Following an action in the 2015 Athena SWAN application, academic staff leaving the School have an exit interview with the HoS. We will start tracking the destination of PDRAs to assess the efficacy of our mentoring and training of PDRAs (AP 5.1), acknowledging that academic jobs are not the only positive employment destination.

(2034 words)



Action List for 2019 Application



AP 5.2 Develop a framework for mentoring for PDRAs within the School.



AP 4.1 Develop best practice for recruiting under-represented groups.



AP 4.4 Increase the proportion of female staff in senior positions.



AP 5.1 Develop exit survey that monitors positive destination and satisfaction for PDRAs.

5. SUPPORTING AND ADVANCING WOMEN’S CAREERS

Recommended word count: Bronze: 6000 words | Silver: 6500 words

5.1. Key career transition points: academic staff

(i) Recruitment

Break down data by gender and grade for applications to academic posts including shortlisted candidates, offer and acceptance rates. Comment on how the department’s recruitment processes ensure that women (and men where there is an underrepresentation in numbers) are encouraged to apply.

We present the recruitment data for PDRA and permanent academic staff positions separately because the data highlight different challenges for these two groups. Tables 14 (PDRA) and 16 (academic staff) show the number of women and men at each stage of the recruitment process.

PDRA recruitment

Table 14: PDRA recruitment by gender.

Year	Status	Female	Male	Total	Proportion female
2014/15	Applicants	14	31	45	31.1%
	Interviewed	2	5	7	28.6%
	Appointed	0	3	3	0%
2015/16	Applicants	1	3	4	25%
	Interviewed	1	1	2	50%
	Appointed	1	0	1	100%
2016/17	Applicants	10	48	58	17.2%
	Interviewed	4	18	22	18.2%
	Appointed	3	6	9	33.3%
2017/18	Applicants	8	46	54	14.8%
	Interviewed	4	16	20	20%
	Appointed	2	6	8	25%

Figure 17: PDRA recruitment by gender.

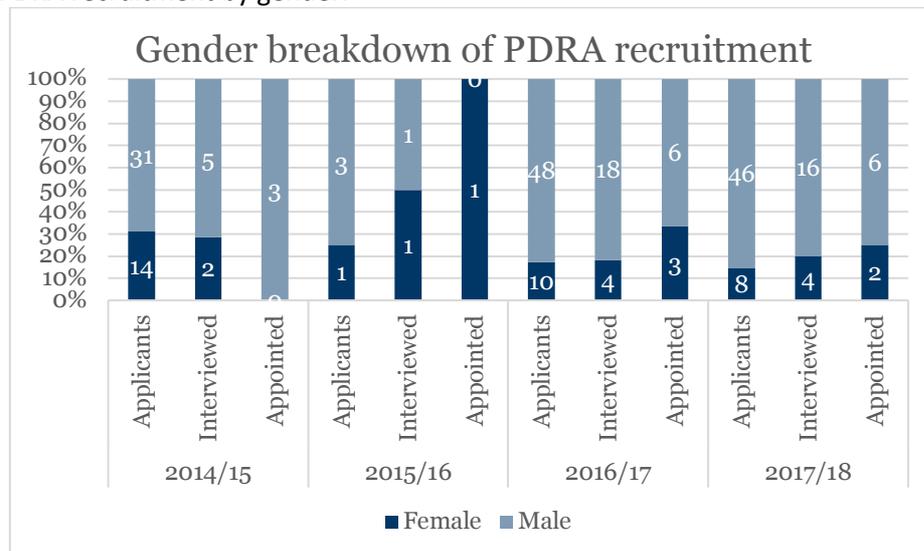


Table 15: Recruitment process

Stage	PDRA (current)	PDRA (further action)	Academic staff T&R (current)	Academic staff T&R (further action)
Advertising	<ul style="list-style-type: none"> ✓ Internal redeployment for at least 3 days. ✓ External advertisement for at least 30 days. ✓ Always sent to jobs.ac.uk and speciality website per subject area (learned societies). ✓ Frequently sent to WIM lists. ✓ Personal targeted emails. 	<ul style="list-style-type: none"> ➤ Advertise for longer if possible. ➤ Run the advert through online gender decoder tools to identify bias in job ads. ➤ Always sent to WIM lists. 	<ul style="list-style-type: none"> ✓ Internal redeployment for at least 3 days. ✓ External advertisement for at least 30 days. ✓ Always sent to jobs.ac.uk and speciality website per subject area (learned society). ✓ Frequently sent to WIM lists. ✓ Personal targeted emails. 	<ul style="list-style-type: none"> ➤ Advertise for 3 months. ➤ Progressive wording. ➤ Run the advert through online gender decoder tools to identify bias in job ads. ➤ Always sent to WIM lists. ➤ When possible, advertise multiple posts at once.
Shortlisting	<ul style="list-style-type: none"> ✓ Frequently have one female academic on the shortlisting panel. ✓ Rank candidates according to specific criteria with a matrix. ✓ Unconscious bias training for all panel members. 	<ul style="list-style-type: none"> ➤ Have at least one female academic on the shortlisting panel whenever possible, recognising overburden of female staff. ➤ Re-advertise and/or extend application deadline if necessary and possible to achieve: ➤ No single gender shortlist. 	<ul style="list-style-type: none"> ✓ Always have one female academic on the shortlisting panel. ✓ Rank candidates according to specific criteria with a matrix. ✓ Unconscious bias training for all panel members. 	<ul style="list-style-type: none"> ➤ Re-advertise and/or extend application deadline if necessary and possible to achieve: ➤ No single gender shortlist.
Interview	<ul style="list-style-type: none"> ✓ All interviews conducted in the same way (all Skype or all in person). ✓ Frequently have one female academic on the interview panel. 	<ul style="list-style-type: none"> ➤ Have at least one female academic on the interview panel whenever possible, recognising overburden of female staff. 	<ul style="list-style-type: none"> ✓ Always have one female academic on the interview panel. ✓ Frequently invite candidates for 2-3 days with informal meetings with academic staff and social events. ✓ Research and teaching presentations to the whole school. 	<ul style="list-style-type: none"> ➤ Ensure turnover of the panel members and diversity of academic rank. ➤ Always invite candidates for 2-3 days with informal meetings with academic staff, PDRA's and PGR students and social events (lunch and dinner). ➤ Research, teaching and EDI presentations to the whole school.



The PDRA data show a variable picture year-on-year, probably since the number and nature of PDRA projects available vary considerably. The averaged proportion of female applicants (20.5%) is low compared to the RG average of 27.3% female PGR students. However, a higher proportion of female applicants have been appointed (28.6%), which shows that women have been particularly successful through the recruitment process. Table 15 summarises our current recruitment process for PDRA and presents further actions to ensure that the good practices employed for academic staff recruitment are incorporated into the PDRA recruitment where possible (AP 4.2). Our main action is to tackle the low number of female applicants by posting the advertisement for longer period and systematically on the European and UK “Women in Mathematics” (WIM) networks and to improve support to PGR students (see 5.3(iv)) and our PDRA mentoring (see 5.3(iii)).

Permanent academic staff recruitment

Table 16: Recruitment of academic staff.

Year	Position	Status	Female	Male	Total	Proportion female
2014/15	Lecturer/SL	Applicants	25	199	214	11.7%
		Interviewed	1	19	20	5%
		Appointed	0	6	6	0%
	Professor	Applicants	0	4	4	0%
		Interviewed	0	1	1	0%
		Appointed	0	0	0	N/A
2016/17	Lecturer/SL	Applicants	11	9	20	55%
		Interviewed	2	1	3	66.7%
		Appointed	0	1	1	0%
	Professor	Applicants	2	5	7	28.6%
		Interviewed	1	4	5	20%
		Appointed	0	0	0	N/A
2017/18	Lecturer/SL	Applicants	4	27	31	12.9%
		Interviewed	1	1	2	50%
		Appointed	1	0	1	100%
2018/19	Lecturer/SL	Applicants	23	66	89	25.8%
		Interviewed	5	5	10	50%
		Appointed	2	0	2	100%

The academic year 2015/16 is not included in Table 16 since there were no appointments. There were no professorships advertised in the last two years. The year 2018/19 only includes the data available up to April 2019 (two Physics posts). We see year-on-year variations in the number of applications (from males and females) due to market difference by sections. The numbers of applicants were very low in 2016/17: these were Statistics posts for which recruitment is difficult. Our geographic position also contributes to low numbers. In the coming years, the Statistics group will diversify their research to address the low application numbers and gender diversity of academic staff. Overall the data show that we are struggling to recruit women into permanent academic posts, especially before 2018, and not only because they do not apply.



Prior to 2015, single gender shortlists were common. There has been a dramatic change with the good practices for recruitment of academic staff adopted since 2015, which are summarised in Table 15. However, these good practices have not been adopted as standard in all sections within the School. Moving forward, these will become standard practices for every academic post (T&S and T&R) with the creation of a recruitment checklist (AP 4.1.a-c). In addition to the actions highlighted in Table 15,

- We will continue unconscious bias training for all staff with a biennial in-person session, put on by either ECU or similar organisations (AP 4.3).
- At the interview stage, applicants will now always be invited to spend two-three days in the School and meet a cross-section of members of the School, including meals and one-to-one meetings with UGs, PGRs and PDRAs as feedback from applicants in our latest recruitment shows that this conveys the welcoming atmosphere of the School and showcases Newcastle as a city. The School will provide financial support to applicants with caring responsibilities if needed.

Still, we think that these good practices are not enough to turn the tide of gender imbalance. Therefore, we are currently trialling two initiatives in Applied Maths and Physics. The first initiative is part of the new Physics programme and has just completed. We used progressive advertising highlighting our desire to build Physics with EDI embedded from the start. The wording stated:

“We are committed to using this opportunity to build a Physics environment with Equality and Diversity at its core. As such, in addition to a strong research track record, you will have a genuine interest and commitment to developing the role of under-represented groups in Physics, and an interest in establishing innovative, evidence-based programmes that will target these groups at all levels. In addition, you will need to demonstrate the potential to be a strong role model for the values of equality, diversity and inclusion.”

This advertising led to 26% female applications, 50% females shortlisted and two (100%) female hires. This includes a transgender person, demonstrating that the advertisement appealed broadly to under-represented groups. Candidates had to address how they have and will contribute to EDI initiatives as part of their presentation to the whole school. During interview, nearly all candidates remarked that one of the main reasons they applied was the unique focus on EDI. This feedback and the higher proportion of female applicants at each stage compared to our previous searches, albeit in slightly different fields (Astronomy versus Maths), demonstrate the positive impact of this initiative to successfully hire women. We are now turning this initiative into a beaconing activity in the University by advising on the recruitment process for the University-wide fellowship scheme (NUACT). The programme lead (Dr Rogers) presented this initiative as best practice at Aarhus University, Denmark.

“The recruitment process for the position of Lecturer / Senior Lecturer in Astronomy was easily the most actively inclusive process in which I have ever participated as an applicant. I was very impressed with the foregrounding of inclusion and diversity in the job advertisement, and even more so with the requirement that 5 minutes out of the 20-minute talk at the interview be focused exclusively on past work and future plans in increasing inclusion in the field. I was also very pleased to see at the interview that half the people interviewed were women, and I felt totally comfortable being open about my involvement with LGBTQ inclusion efforts as a member of that community during the interview.”

Danielle Leonard, newly-appointed Lecturer in Astronomy



As a second initiative, we are currently trialling a method developed by *Diversity by Design*, an external EDI consultancy. Designed to remove potential biases from the recruitment process, shortlisting is done by a third party, who determines whether candidates meet a certain threshold for research activity based on pre-determined criteria. Other criteria are measured by written responses to job requirements (such as teaching, mentoring and administration). Panellists do not see CVs and candidates are judged based on abilities demonstrated during teaching and research presentations and by role playing other typical academic scenarios, rather than by a standard interview. This method is also accompanied by progressive advertising highlighting our need for diversity and how it improves our School.

After completion of this second initiative (June 2019), we will be in a position to compare it to the Physics initiative and use them both to shape future recruiting activities and act as a beacon activity for the rest of the Faculty and University (**AP 4.1.d**). We will evaluate the success of our recruitment processes against the target of 25% of hired academics over the next five years being women (**AP 4.1**).

Within the School we have been successful at solving five separate “two-body” problems, allowing us to retain valuable staff. In cases where the partner’s field lies outside the School, we are pressuring the University through the Faculty Executive Board and the University’s EDI committee to identify better ways to facilitate two-body hires.

“The School helped me solve my two-body problem by arranging the transfer of my research fellowship here and offering me a permanent academic position. Members of the research group I wanted to join were extremely supportive and the School management was very responsive. It was a huge relief for me to start my fellowship knowing I had a secure position at the end. The School has never put any pressure on me to take on teaching or administrative duties during my fellowship, so this allows me to concentrate on building my research profile.”

Céline Guervilly, Research Fellow



Part of recruiting is having a culture that attracts women. To broaden the exposure of the School to women academics, we have instituted targets for female seminar speakers in an annual cycle for each section (40% Applied-Physics, 30% Pure, 30% Stats). Those targets were constructed based on representation in the fields and percentages in previous years with an ambitious but achievable increase. These targets will be reviewed annually and revised accordingly. In the previous few years, the fraction of female seminar speakers has increased from 17/20/11% (between 2012-2016) for Applied-Physics/Pure/Stats to 37/23/25% in the last two years. Although we have not reached yet our desired targets, we have improved greatly (for some sections, this meant doubling the number of female speakers) and further improvement will be achieved by having the fraction of female speakers part of the annual review for each research group (**AP 7.2**).

This will provide us with a way of identifying and encouraging under-represented groups to apply for future jobs in the department. Moreover, this allows potential candidates to observe the collegial environment in MSP. We will particularly target early-career researchers as such invitations can have more positive impact on their careers and they can act as role models for our female PGR students. Recently, we have required School-funded workshops to have 30% female invited speakers (higher than average in the field). Our School EDI budget can offset the cost of women seminar speakers from further afield and/or cover short research visits (11 women benefitted in 2017/18).



(ii) Induction

Describe the induction and support provided to all new academic staff at all levels. Comment on the uptake of this and how its effectiveness is reviewed.

The School induction process for all new academic staff, including PDRAs, involves:

- An initial meeting with the School manager to introduce the School management structure and key policies, including flexible working practices.
- An induction pack with links to sources of information and advice.
- Compulsory online training courses undertaken with the first three months, including unconscious bias training.
- An individual meeting within the first week with the HoS to discuss probation, personal development, training needs and objectives.
- Individual meetings with the DHoS (Deputy Head of School), DoE (Director of Expertise), DELT (Director of Excellence in Teaching and Learning), PGR Director, the computing officer, HR assistant and grant support officer.

Each new member is allocated a mentor within the School. All staff can also choose to have an additional mentor from another School within the University via the NU mentoring Scheme. Female colleagues can choose to have a female mentor and to be part of the University Women's Mentoring programme organised by the staff development unit.

The University holds a regular Welcome Event attended by all new staff, which introduces the University structure and the way in which it functions. The Faculty has recently launched an online questionnaire to collect feedback from new staff on their induction experience. Feedback is then passed on to Schools so that improvements can be put in place if necessary.

(iii) Promotion

Provide data on staff applying for promotion and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

Table 17: Applications for academic promotion.

		Female applications	Male applications	Female successes	Male successes
2014/15	Senior Lecturer	0	2	0	1
	Reader	0	0	0	0
	Professor	0	0	0	0
2015/16	Senior Lecturer	1	3	0	3
	Reader	1	0	1	0
	Professor	0	0	0	0
2016/17	Senior Lecturer	0	0	0	0
	Reader	1	0	0	0
	Professor	1	1	0	0

2017/18	Senior Lecturer	0	3	0	0
	Reader	0	3	0	2
	Professor	0	0	0	0

The promotion system currently works by self-identification, where applicants put themselves forward for promotion. The HoS writes an assessment of the application, which then goes to a Faculty committee (in the case of promotion to Senior Lecturer) and both the Faculty and University committees in the case of Reader/Professor. Within the School, this meant that, up to now, the promotion process relied on self-nomination and the opinion of one person (HoS). This process has led to relatively few applications from either gender (less than 10% of eligible staff applying in any given year). Such self-nomination could adversely affect women, who are less likely to consider themselves ready for promotion than men. Moreover, such process has no mentoring or guidance for writing applications. Overall this has led to relatively low success rates for women (25%) compared with men (50%). The whole promotion process appears opaque to staff: the 2018 staff survey showed that 20% of staff members did not understand it and highlighted a misunderstanding of the Faculty and University processes.



To alleviate potential issues with self-identification and support for writing promotion applications, we have created a Promotions Advisory Group (PAG) within the School (**AP 4.4**), made up the DoEs, DELT, DHoS and HoS. The HoS will ensure that there is always gender representation within the PAG. Membership of the group has been chosen to reflect all aspects of academic contracts, in particular the DELT to support T&S staff and the DHoS, who has an EDI remit. This panel will review all staff members annually, taking career breaks into account, and will identify candidates to support through the promotion process. In addition, this new group is intended to mentor staff by helping candidates develop their application over an appropriate timeframe of one-three years in advance. The PAG will also help candidates interpret feedback and will accompany unsuccessful candidates to feedback sessions if desired. The PAG met for the first time in September 2018 and several candidates were identified. The first round of applications after the creation of the PAG has led to 10 applications for promotion within the School, a significant increase from the previous few years (more than doubling). The outcome of this process is still unknown, but staff valued the change. We will champion this new initiative within the Faculty.



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“Encouragement to apply for promotion was beneficial for me: the University criteria are broad and can be difficult to interpret, and I probably would not have applied without independent encouragement that I meet an appropriate range of them.”

Tom Billam, Lecturer



(iv) Department submissions to the Research Excellence Framework (REF)

Provide data on the staff, by gender, submitted to REF versus those that were eligible. Compare this to the data for the Research Assessment Exercise 2008. Comment on any gender imbalances identified.

Table 18: Staff submitted and eligible to REF. The percentage corresponds to submitted/eligible by gender.

	Female submitted	Female eligible	Male submitted	Male eligible
RAE 2008	3 (100%)	3	31 (100%)	31
REF 2014	2 (50%)	4	20 (65%)	31

There was a significant reduction in the number of staff submitted from 2008 to 2014, including a large reduction of women. This was due to a Faculty decision to remove nearly all pure mathematicians. At that time, all the female academics within the School were pure mathematicians. This was *not* a decision made by the School and was against School wishes. The 2021 submission will be different because REF process changed.



Key Achievements since 2015

- ✓ Doubling the number of applications for promotion following the establishment of the PAG.
- ✓ Increased the number of female academics from four to 10.
- ✓ Developed progressive recruitment method successful in hiring two women.
- ✓ Dissemination of new recruitment practices externally.
- ✓ Unconscious bias training for all staff.
- ✓ Significant increase in numbers of female seminar speakers.
- ✓ Solved five separate two-body problems.



Action List for 2019 Application

- **AP 4.1** Develop best practice for recruiting under-represented groups.
- **AP 4.4** Increase the proportion of female staff in senior positions.
- **AP 7.2** Increase proportion of female seminar speakers to ensure higher visibility of female role models across all subject areas.
- **AP 4.2** Ensure good practice established in 4.1 is incorporated into PDRA recruitment.
- **AP 4.3** Continued unconscious bias training for all staff. Biennial refresher training by ECU for new staff.

SILVER APPLICATIONS ONLY

5.2. Key career transition points: professional and support staff

(i) Induction

Describe the induction and support provided to all new professional and support staff, at all levels. Comment on the uptake of this and how its effectiveness is reviewed.

(ii) Promotion

Provide data on staff applying for promotion, and comment on applications and success rates by gender, grade and full- and part-time status. Comment on how staff are encouraged and supported through the process.

A key principle of the Faculty restructure was that all professional services (PS) staff should be managed by someone in the PS job family. Senior PS staff in the School are managed by the Faculty or University PS lead in their respective areas. Some aspects of training, development and promotion are therefore outside of direct School control. The PS staff split into two categories: technical (mostly male) and administrative (mostly female).

(i) Induction

The School has a formal induction framework for all new PS staff members, which is similar to the induction offered to academic staff. New staff are also allocated a mentor to ensure that they have a point of contact for any queries or concerns. Training requirements are identified with the line manager during induction, and staff are then booked onto the relevant internal workshops. A training plan is developed with progress monitored.

(ii) Promotion

PS staff seeking promotion to a higher grade need to apply for a different role either internal or external to the School. The School has a relatively small core support team, so promotion of PS staff very often means that they have to leave for another unit. The promotion data is not tracked by the University, so we are only aware of successes. We will now track this data at the School level (**AP 8.1**). Since the restructure, three PS staff members from the School have successfully applied for promotion at a higher-grade post. These three members were supported by the School through study leave for apprenticeships and secondments (see 5.4).

Table 19: Applications for bonus from PS staff.

		Female applications	Male applications	Female successes	Male successes
2014/15	Manager's Bonus	1	0	1	0
	Spotlight Award	7	0	7	0



2015/16	Manager's Bonus	2	0	2	0
	Spotlight Award	0	0	0	0
2016/17	Manager's Bonus	0	0	0	0
	Spotlight Award	0	0	0	0
2017/18	Manager's Bonus	2	0	2	0
	Spotlight Award	2	0	2	0

The University operates an internal annual pay review scheme through which Schools can nominate PS staff for one-off bonuses. Although these do not represent promotion in the true sense, the School has made use of the scheme to recognise and reward PS staff contributions. Spotlight awards are granted for one-off achievements beyond normal expectations. The Manager's Bonus is a more substantial award for a longer period of achieving more than normal expectations. All the nominations have been successful in the last four years. There were no nominations in 2016/17 due to the Faculty restructure, which resulted in a change of School Manager. Our action will focus on improving the support offered to PS staff looking to progress to a higher grade (see 5.4).



Action List for 2019 Application

- **AP 8.1** Track the promotion data for PS staff.

5.3. Career development: academic staff

(i) Training

Describe the training available to staff at all levels in the department. Provide details of uptake by gender and how existing staff are kept up to date with training. How is its effectiveness monitored and developed in response to levels of uptake and evaluation?

The University offers a large selection of training and development opportunities for staff from all job families. The most popular workshops with MSP staff are “Leadership Development Programme”, “Research Supervision” and “Readiness for Fellowship”. The effectiveness of the workshops is monitored by the University through online questionnaires and by RGLs during the Performance and Development Review (PDR) (see 5.3(ii)).

Table 20: Attendance at training courses yearly averaged between 2014/18.

	Number of courses attended	Number of staff attending one or more courses	% of attendees who are female	% of potential attendees who are female
Academic staff	35	18	23%	15%
PDRA	9	5	32%	35%

Table 20 gives the training course attendance averaged over the last four years. Research funding workshops are not included here but are described in 5.3(v). The average number of staff over the last four years is 53 academics and 13 PDRA, so approximately 34% of academic staff and 38% of PDRA attend a training course each year. Uptake by female staff is comparable to their representation. The 2018 staff survey showed that 20.8% of respondents thought that they were not actively encouraged to take up development opportunities. To better promote training activities, staff will be encouraged through RGL/DoE to partake in training activities during the Performance and Development Review (PDR) (see 5.3(ii)).

“I am an early-career researcher and I hadn’t considered going on leadership training at this stage of my career. The School encouraged me to attend the Faculty PI development workshop, which has helped me develop my research profile and manage my research team.”

Toby Wood, Lecturer



(ii) Appraisal/development review

Describe current appraisal/development review schemes for staff at all levels, including postdoctoral researchers and provide data on uptake by gender. Provide details of any appraisal/review training offered and the uptake of this, as well as staff feedback about the process.

The School has an annual PDR process. The purpose of PDR is to review last year’s performance, agree objectives, identify priorities, and outline personal development plans e.g. career planning and training needs. The School provides compulsory PDR training for reviewers in the form of a small

workshop. Online optional training is available for reviewees. In the past, all PDRs were done by the HoS. In the new structure, PDRs are generally done by the RGL. RGLs are reviewed by the DoE and DoEs are reviewed by the HoS. One of the six RGLs and one of the two DoEs are female. All staff can change their reviewer if requested. 100% of academic staff have completed PDR in each of the past four years.

In the past, PDRs for PDRAs has been patchy depending on supervisor. In the future, PDRAs will have PDRs on an annual basis carried out by the supervisor, and this will be monitored in the same way as other staff. Effectiveness will be gauged using the School survey (**AP 1.2**).

(iii) **Support given to academic staff for career progression**

Comment and reflect on support given to academic staff, especially postdoctoral researchers, to assist in their career progression.

PDRA

The data presented in Section 4.2(i) shows a large drop in the proportion of female staff from PDRA (approx. 35%) to T&S and T&R lecturer (approx. 19%), so support to PDRAs is a high priority. In addition to research support, our current and planned actions to address this are:

- **Networking:** The School has developed an annual careers and networking event for PDRAs and PGR students jointly with the Department of Mathematical Sciences, Durham University. The first workshop was held in September 2018 (see photos and programme below). The workshop was arranged by PDRAs and PGR students with guidance from academics and professionals from both universities and addressed challenges such as applying for jobs, fellowship opportunities and grant proposal writing. Alongside this, the workshop highlighted the importance of managing mental health and promoted EDI in the workplace. The attendance was mostly from PDRAs (23 attendees) and 30% of attendees were female. All attendees rated the workshop as highly successful in the feedback survey and suggested extending the duration of future events. In the future, we hope to include Northumbria University as well as Physics departments (**AP 1.3**).
- **Mentoring:** The lack of formal mentoring at the School level for PDRAs applying to lectureships/fellowships was raised during the one-to-one interviews with female staff. Help to write lectureship applications is provided to PDRAs on an ad-hoc basis. To address this issue, the School will put in place a mentoring programme for PDRAs (males and females) applying to academic positions, overseen by RGLs (**AP 5.2**).
- **Teaching experience:** The School offers opportunities for PDRAs to gain experience with teaching if requested. This includes supervision of UG research projects.
- **Management experience:** PDRAs recently indicated that they wanted to be involved more formally in the School decision process. The School has thus created a School PDRA committee (School funds provided when necessary), which will identify and bring forward issues associated with their career needs. For example, the School is now investigating ways to remunerate PDRAs for teaching at the request of the PDRA committee. The committee chair is a permanent member of the School Research and Innovation Committee (SRIC), which ensures that a clear line of communication is established with the School management (**AP 5.3**).



Joint careers and networking event for PDRA and PGR students co-organised with Durham in 2018



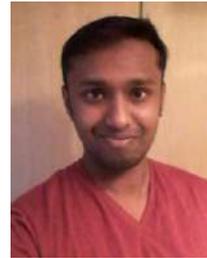
Programme

Time	Session	Session Details
9:30 - 10:00	Networking session	Interactive welcome session
10:00 - 11:00	How to get your next academic job: experiences and skills required	A talk delivered by Prof. Anvar Shukurov
11:00 - 12:00	Practical tips on preparing CVs and personal statements	A 20 min talk delivered by Nabil Iqbal followed by an interactive CV sharing session
12:00 - 13:00	Break Lunch*	
13:00 - 14:00	How to write a winning fellowship proposal	A talk given by Johanna Gascoigne-Owens and Holly White
14:00 - 14:30	Coffee Break	
14:30 - 16:00	World Café	<p>An interactive session during which the participants will be split into 3 groups and rotate between tables that will be dedicated to discussing 3 different topics:</p> <ul style="list-style-type: none"> • Non-academic career paths: what are the options outside academia? (Lead by June Kay and Karen Parkhouse) • Mental health: how to handle the stress and the anxiety of the job market. (Lead by Hannah Harvey) • Equality-Diversity-Inclusion (EDI): how various forms of discrimination may manifest themselves in the process of applying for academic jobs, both from the candidate's perspective and also from the committee side, quotas, and EDI policies in the academic sector. (Lead by Christine Stretesky) <p>The session will conclude with the 3 experts giving a brief summary of the main ideas discussed during the session.</p>

*During the lunch break there will be a drop-in session for individual CV review by David Henderson from the Careers office.

"I found the Durham-Newcastle workshop very useful as it provided information not only pertaining to our future in academia but also how to incorporate equality and diversity into our writing."

Rathish Ratnasingam, PGR student



Academic staff

Academic staff career progression is supported through:

- **Teaching:**
 - New lecturers have a reduced teaching load during their first four years, which progressively diminishes from 30% to 10% of average workload.
 - The University offers mandatory teaching training for new academic staff members with the Certificate in Advanced Studies in Academic Practice (CASAP), which is formally recognised by a fellowship to the Higher Education Academy. Attendance to CASAP is also included in the workload allocation model.
 - Every teaching staff member (including PDRAs and PGR students) is observed during a lecture once a semester by another staff member, to provide mentoring and confidential feedback.

- **Research:**
 - Staff are generally entitled to a sabbatical leave every 6 years (sometimes more frequently). The request for sabbatical leave also includes a request for travel funds in addition to the normal entitlement. The PAG will consider these applications. Historically, nearly all sabbaticals have been granted, meaning that the number of females taking sabbatical reflects the proportion of female staff within the School.
 - Staff are allocated £1500 research budget each year. In addition, DoEs hold a separate budget for strategic research endeavours that staff can request. This is a recently developed budget and all requests have been granted.

- **Mentoring:** In the absence of a formal process, mentoring for career progression used to be done essentially on an ad-hoc basis through either the HoS or section leaders. This inconsistency will now be addressed through three initiatives:
 - Each new staff member is assigned a mentor.
 - The PAG will identify on-going development needs (**AP 4.4**) (see 5.1(iii)).
 - The RGL role will also act as a mentor where requested or needed.

(iv) Support given to students (at any level) for academic career progression

Comment and reflect on support given to students at any level to enable them to make informed decisions about their career (including the transition to a sustainable academic career).



UG students

The School offers pastoral support via a personal tutor, who is an academic School member. Students can request a female/male tutor. The School also has a buddy system whereby Stage 1 students can be mentored by Stage 2/3 students. Students can request a male/female buddy.

"When the timetable for this year was released, I originally thought that I may have to drop out as there were multiple 6pm finishes. As a 30-year-old mother of a 4-year-old daughter, this meant I could not find childcare and it really upset me that I may have to give up something I have worked so hard for. Thankfully my tutor and other members of staff worked together and managed to get the timetable changed for me at the last minute. It means so much to me that I can continue to study something I am so passionate about and set a great example for my daughter."

Haidee Jones, Physics UG student



The School teaches the course "Mathematics Skills and Career Management" to all Stage 2 Maths students, and Stage 3 students can choose additional careers modules. A similar module will be developed for Physics students next year. All students can apply to spend 9-12 months in a work placement between Stage 2 and 3 with the University's support. Few students take this up, but it is viewed very positively by those that do.

The School offers 12-20 bursaries each year for UG students to undertake a six-week summer project to familiarise them with academic work and encourage them to pursue a career in academia. Following our 2015 action plan, the advertisement process has been formalised by emailing all eligible students with the list of available projects. Feedback from the summer students is very positive (see quote below) and we have a strong record of publishing the summer project activities, cementing the student's positive experience of research. Conversion to PhD has been high (approximately 75%). Table 21 shows the gender ratio of summer students for the past four years. On average, the proportion of female summer students is comparable to the proportion of female Stage 2/3 students. In order to improve the gender representation in PhD applications, our target for the future cohorts of summer students is to achieve a proportion of 50% female students for Maths/Stats (currently 42%) and 30% for Physics (AP 2.3).

"My UG summer project gave me a great taste of the world of research and how to work in an interdisciplinary academic team. It not only confirmed to me that I wanted to do a PhD but also strengthened my applications and gave me good experience to draw upon in interviews. In the end I accepted a PhD place to continue the work from my summer project!"

Laura Wadkin, PhD student



Table 21: UG summer project numbers

Year	Female	Male	Total	Proportion Female
2015	9	7	16	56.3%
2016	4	8	12	33.3%
2017	4	9	13	30.7%
2018	10	13	23	43.5%
2015-2018	27	37	64	42.2%

To better inform UG students about PGR student life and work, we plan to organise an annual social event for all UG students to meet and discuss informally with the School PGR students and PGR advisory team (**AP 2.5**).

The School will fund a Restart Fellowship for individuals who have taken a career break or who have worked in industry, to allow them to pursue an academic career (**AP 6.3**). This will be open to students transitioning from UG to PGR and PGR to PDRA. Our first fellowship has been awarded to a female student who will start part-time PhD studies in 2019. The fellowship will cover her tuition fees.

PGR students

Previously, there was no clearly identified personal tutor for PGR students, so pastoral care was provided by supervisors, PGR Director and the section PGR Selectors. Following feedback from the 2018 review of the PGR programme, we have additionally nominated a Senior PGR Tutor, whose main role will be pastoral care of PGR students. This tutor is currently a female staff member; gender representation will always be ensured within the team (**AP 3.2**).

We have a variety of activities to support the academic progression of our PGR students:

- Each section has an annual PGR conference, which is organised by students, with the goal to encourage PGR students to present their work and receive feedback from the whole section.
- The PGR students run a weekly forum, where they can present their work to their peers.
- PGR students are allocated minimally £500/year for academic travel, £1000 for training needs and can ask for more when necessary.

The Faculty has developed a Postgraduate Researcher Development Programme (PGRDP) with training workshops on transferrable skills (e.g. scientific writing, job search strategies and presentation skills). Each PGR student is required to complete a minimum number of workshops.

All PGR students are given the opportunity to undertake paid marking and demonstrating for our UG programmes. Training is provided through a faculty-wide programme and a school-based workshop focussing on the specific needs of mathematical science learning. Focus groups with our PGR students revealed that they are keen to undertake more advanced teaching opportunities such as lecturing to support their career. We are currently exploring opportunities to offer advanced teaching activities to PGR students by increasing PhD contract length to allow time for teaching activity (**AP 3.1**).

PGR students are given opportunities to be involved in outreach activities such as School visits and open days. This is supported by a PGRDP workshop on science communication. We encourage our



students to apply to become STEM Ambassadors and participate in STEM for Britain. This recently led to one of our PGR students (pictured below) winning the Silver medal for Mathematical Sciences in 2017.

The efficacy of all these activities will be assessed by an exit survey (**AP 3.3**).

Laura Wadkin (PGR student in Applied Maths) receiving a Silver medal at STEM for Britain 2017



(v) Support offered to those applying for research grant applications

Comment and reflect on support given to staff who apply for funding and what support is offered to those who are unsuccessful.

The School has an internal review process whereby research grants are reviewed by the RGL and DoE. Additionally, the School research support team provides guidance on all aspects of the proposal writing process, helps with impact statements, organises mock interview panels and provides feedback on unsuccessful applications. They also organise a “proposal club” every two months to review past applications where all academic staff (including PDRA) are invited.

At the Faculty level, the Research Funding Development team organises regular research funding workshops including “Getting Those Grants” and “New Investigators Awards”, which is tailored for early-career researchers. These are well attended by members of the School, although exact numbers are unknown since attendance was not recorded in the past.



Key Achievements since 2015

- ✓ Established PDRA committee.
- ✓ Held first PGR/PDRA event with Durham Department of Mathematical Sciences.
- ✓ First Restart PhD studentship offered to a woman returning to academia after a long career break.
- ✓ Good uptake of summer studentships by female UG students.



Action List for 2019 Application



AP 5.2 Develop a framework for mentoring for PDRAs within the School.



AP 4.4 Increase the proportion of female staff in senior positions.



AP 6.3 Promote the Restart Fellowship and monitor the uptake by gender.



AP 5.3 Improve PDRA integration within the School with clear line of communication with the School management.



AP 3.1 Explore feasibility of extending PhD study period to 4 years to incorporate teaching experience.



AP 3.3 Develop exit survey that monitors positive destination and satisfaction for PGR students.



AP 1.3 Expand joint event with Durham Maths department to include Northumbria University as well as Physics departments.



AP 1.2 Biennial staff survey to determine equality and diversity attitudes and experience.



AP 2.3 Increase proportion of female students undertaking summer studentships.



AP 2.5 Annual social event for UG students to meet and discuss with current PGR students and PGR team.



AP 3.2 Ensure gender balance amongst PGR advisors.

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5.4. Career development: professional and support staff

(i) Training

Describe the training available to staff at all levels in the department. Provide details of uptake by gender and how existing staff are kept up to date with training. How is its effectiveness monitored and developed in response to levels of uptake and evaluation?

(ii) Appraisal/development review

Describe current appraisal/development review schemes for professional and support staff at all levels and provide data on uptake by gender. Provide details of any appraisal/review training offered and the uptake of this, as well as staff feedback about the process.

(iii) Support given to professional and support staff for career progression

Comment and reflect on support given to professional and support staff to assist in their career progression.

(i) Training

Table 22: Attendance at training courses yearly averaged between 2014/18.

	Number of courses attended	Number of staff attending one or more courses	% of attendees who are female	% of potential attendees who are female
PS staff	27	8	84%	72%

The University Organisational Development Team runs an annual programme of workshops, including leadership, change management, and IT skills. Table 22 gives the staff attendance at training courses averaged over the last four years. The average number of PS staff over the last four years is 11, so approximately 73% of PS staff attend at least one training course each year. The uptake tends to be larger for female staff than for male staff, but small numbers make this difference difficult to interpret. Line managers in the School use the PDR to identify suitable training programmes in line with career developmental needs and to evaluate the effectiveness of any training undertaken. All PS staff are encouraged to devote two hours each month for training relevant either to their current role or to aid their career development.

In addition to individual training, the School organises generic training for PS staff. Training needs are usually identified during monthly team meetings. Since the School restructure, the PS team has taken part in Away Days, which included teambuilding activities, bespoke unconscious bias training and deaf awareness training.

(ii) Appraisal/development review

All PS staff members have a PDR meeting with their line manager once every year (with an interim meeting after six months). The purpose of the meeting is identical to academic PDRs. 100% of PS staff have completed PDR in each of the past four years. Feedback from staff indicates that they find the process both helpful and productive.

"I thought my PDR was very useful in setting my future career aspirations and giving me the opportunity to chat about possible developmental opportunities and training. Overall, I was very happy and felt it went well."

Lauren Daley, School Learning and Teaching Assistant



(iii) Support given to professional and support staff for career progression

The School offers a number of initiatives for PS staff seeking career development:

- Job shadowing, secondment opportunity or job swap in another section of the University. We currently have two female members undertaking job shadowing.
- Formal development programme leading to a professional qualification relevant to University business. One female member is currently undertaking Association of Accounting Technicians professional programme. Another female member started a Business Administration Apprenticeship in 2017, which led to a permanent position in the School.
- University's mentoring scheme. The School has successfully nominated a female member for a place on the 2018/19 University's Chameleon Programme, which aims to support the changing role of the University manager. Approximately two days/month are devoted to the programme.
- Delegation of more challenging work or allocation of responsibilities related to a new area of work if this helps career progression. One male member is currently undertaking additional work experience to support his career development.
- Nomination on Faculty and University working groups in support of further personal development and career goals.

"I am very grateful to my managers and colleagues for the support the School has given me throughout my apprenticeship year, which has enabled me to secure a permanent post at Newcastle University. My apprenticeship has given me the opportunity to gain valuable office experience in a full-time administrative role, working within a close-knit team. This has provided the solid grounding to develop my career."

Lauren Thompson, School Receptionist





In addition to the PDR, regular one-to-one meetings take place between staff members and their line managers to discuss these career development opportunities. We plan to take a more proactive approach to support PS staff develop experience in the Faculty/University by encouraging secondments and participation in Faculty/University committees (**AP 8.2**). We will invite organisers of the University mentoring scheme and PS staff with experience of job progression to talk at PS team meetings.



Key Achievements since 2015

- ✓ PS staff undertaking job-shadowing and professional development programmes.
- ✓ Each PS staff member has two hours per month for development needs.



Action List for 2019 Application

- **AP 8.2** Encourage secondments, shadowing and participation in Faculty/University committees.

5.5. Flexible working and managing career breaks

Note: Present professional and support staff and academic staff data separately

In 2016, we implemented one of our high-priority action items from the 2015 Athena SWAN application: establishing School guidelines for maternity and adoption leave. These guidelines were developed by the SAT following discussions with Peter Clarkson (University of Kent), and with the assistance of Dr Martina Balagovic (see Case Study 1), who was planning her maternity leave at the time. Although no staff has taken adoption leave in the last four years, these policies also apply to adoption leave. Following this initiative, we have championed our maternity leave guidelines as best practice within the Faculty.

(i) Cover and support for maternity and adoption leave: before leave

Explain what support the department offers to staff before they go on maternity and adoption leave.

Before taking maternity leave, staff discuss plans for transfers of duties: teaching with the Teaching Coordinator and administration with the DHoS. Appropriate arrangements for supervision of PGR students and PDRAs are also discussed with the RGL. During all these discussions, the staff member is given the option of being assisted by the School EDI officer (DHoS or SAT member), who is available for any questions. The School also advertises the NU Parents’ network, which is a support network for University staff.

“The School has been very good allowing me to take holiday whenever I like in term time as ‘bump rest’ (days off during pregnancy).”

Kate Henderson, School Transition Officer



(ii) Cover and support for maternity and adoption leave: during leave

Explain what support the department offers to staff during maternity and adoption leave.

During leave, staff can return to work for Keeping in Touch (KIT) Days, although there is no pressure for them to do so. Staff are offered up to 10 such paid days during their maternity leave. KIT days are used to support the return to work, for example involving research or external scholarship activities rather than teaching or administrative duties. Staff retain the use of their office during leave. Use of KIT days will now be monitored (**AP 6.4**).

Before leave, the School manager discusses with staff their preferred method of communication whilst on leave, so staff can be kept informed about job opportunities such as promotion. To ensure

that all staff and staff on leave can participate in the social life of the School, social events are scheduled at different times of the day over the annual cycle (see 5.6(vi)).

(iii) **Cover and support for maternity and adoption leave: returning to work**

Explain what support the department offers to staff on return from maternity or adoption leave. Comment on any funding provided to support returning staff.

Academic Staff

For the 12 months following their return, staff are given a reduced teaching load (approximately 25% of average workload). This support allows staff to organise a phased return to work with protected time for their research. Large administrative roles and new teaching duties are not assigned in the 12 months after return.

Staff members who have had maternity/shared parental leave receive double the annual travel budget, which can be used for visitors. Furthermore, the School has implemented one of its high-priority action items from the 2015 Action Plan: establishing a carer's fund, which covers childcare associated with attending events as part of their academic role. The fund can be used in order to pay for child minder costs, travel costs of dependents, accommodation costs of dependents, etc. Since its implementation in 2016, the uptake has been relatively low for two main reasons: i) a lack of efficient communication of this policy, highlighted by the 2018 staff survey and ii) valid company invoices or receipts have to be provided to comply with HMRC policies, so informal caring arrangements cannot be covered. We will address the first issue with the School EDI notice board and our revamped intranet website (**AP 7.6**). We are currently consulting the finance office to address the second issue (**AP 7.4**).

In addition to School funding, the University has a Returners Programme with a fund of up to £10K to cover the cost of a variety of activities including training and conferences. This initiative was only launched in 2017, so there has been no uptake in MSP yet. Since the University Returner's Support Programme is only available for academic staff, the School carers' fund additionally covers PS staff and PGR students.

Our School guidelines are more generous than the University policy (18 weeks full pay, 21 weeks statutory pay, and 13 weeks unpaid leave), which does not stipulate any reduced workload on return, nor travel allowance.

PGR Students

The University policy is that all PGRs are entitled to take 6 months of maternity/adoption leave on full stipend and a further 6 months of unpaid maternity leave. Two of our PGR students recently took and returned from maternity. The PGR director and supervisors have worked with them to develop suitable flexible arrangements. One of the students is continuing part-time, while the other student chose to complete her PhD remotely in Italy where she has family support, and the School maintained her funding.



“The School provided travel expenses and allowed me to continue my PhD in Italy, which helped because I have support from my family there.”

Klejdja Xhani, PhD Student



PS Staff

Flexible working before and after leave are accommodated. Maternity cover is in place to allow for phased leave and return, in particular enabling a reduced workload. One PS staff member is currently on maternity leave and the School agreed a flexible working pattern for six weeks before commencement of the leave. The School also ensured overlap with her fixed-term replacement before she went on leave, and this will also be put in place for her return.

The School has recently created a dedicated quiet room, which can be used for breastfeeding or expressing milk. This space can also be used for undisturbed time for School members suffering from mental health issues or private, sensitive conversations between staff who are working in shared offices, such as PGR students, PDRAs and PS staff as well as visitors.

(iv) Maternity return rate

Provide data and comment on the maternity return rate in the department. Data of staff whose contracts are not renewed while on maternity leave should be included in the section along with commentary.

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Provide data and comment on the proportion of staff remaining in post six, 12 and 18 months after return from maternity leave.

Table 23: Number of staff taking maternity leave.

Year	Staff group	Number
2014/15	Academic	0
	Professional Staff	0
2015/16	Academic	0
	Professional Staff	0
2016/17	Academic	2
	Professional Staff	0
2017/18	Academic	2
	Professional Staff	1

In the last four years, we had a 100% maternity return rate after six, 12 and 18 months, but we are mindful that this is based on low numbers. Prior to the new guidelines, only one member of academic staff had taken maternity leave, so it is difficult to quantify the impact of our new guidelines on the maternity return rate yet. However, the approving feedback given by those who

used the new guidelines (see Case Study 1) shows that the initiative has had a positive impact. We will continue to consult with staff returning from leave to see how the guidelines can be improved.

(v) **Paternity, shared parental, adoption, and parental leave uptake**

Provide data and comment on the uptake of these types of leave by gender and grade.

Comment on what the department does to promote and encourage take-up of paternity leave and shared parental leave.

Table 24: Number of staff taking paternity/parental leave.

Year	Staff group	Number for paternity leave	Number for shared parental leave
2014/15	Academic	2	1
	Professional Staff	0	0
2015/16	Academic	0	0
	Professional Staff	1	0
2016/17	Academic	3	1
	Professional Staff	0	0
2017/18	Academic	4	1
	Professional Staff	0	0

One of the most demonstrable culture changes within the School has been the uptake and perception of shared parental/maternity leave. Prior to 2014, there was no shared parental leave taken in the School. In the last four years, the School has had staff take 10 periods of paternity leave (100% of eligible staff) and three periods of shared parental leave (all males), and all have returned to work.

Following recommendations from the ECU guidance document on improving the uptake of shared parental leave, we have designated a named contact in the School (Tom Nye, who took shared parental leave recently), who can provide information and advice on different forms of parental leave.

"I took 3 or 4 months shared parental leave for each of my three children. I think that attitudes in the School about taking extended paternity leave have completely changed in this time. I'd like to tell male colleagues how great it was to take this leave, and how it helped my career by teaching me how to work more efficiently!"

Tom Nye, Senior Lecturer



(vi) **Flexible working**

Provide information on the flexible working arrangements available.

The School is very supportive of flexible working: academic staff are able to routinely work from home and all school meetings are arranged in core hours (10am-4pm). Every term, a notification is sent allowing staff to request no teaching early in the morning or late in the evening to allow for caring responsibilities. In the past, these requests were only considered by the HoS. To allow for



transparency, in the future, these will be considered by a subset of the EDI committee, which is chaired by the DHoS (**AP 6.1**). The DHoS oversees the workload so knows implications of such requests.

The School supports part-time work whenever possible (see Case Study 2). Currently 7 academic staff work part-time, 5 as part of a retirement process (all males), and 2 to work around caring responsibilities (1M, 1F). Another staff member (M) has taken two periods of extended leave for caring responsibilities.



A response to the staff survey highlighted the difficulty of managing childcare during school half-term holidays, particularly for staff delivering lectures. SEB will explore a policy to enable lecturers to take annual leave during half-term holidays (**AP 6.2**).

(vii) **Transition from part-time back to full-time work after career breaks**

Outline what policy and practice exists to support and enable staff who work part-time after a career break to transition back to full-time roles.

Return to work after career breaks under circumstances other than discussed above will be considered on a case by case basis, but this has not yet occurred.



Key Achievements since 2015

- ✓ New maternity guidelines developed in the School were taken up by two female academics and championed within the Faculty.
- ✓ Significant increase in the uptake of shared parental leave.
- ✓ Creation of a designated contact for queries about parental leave.
- ✓ Creation of a quiet room in the School.



Action List for 2019 Application

- **AP 7.6** Improve communication on EDI policies in the School
- **AP 7.4** Increased uptake of Carer's fund
- **AP 6.1** Flexible working requests to be considered by the EDI committee.
- **AP 6.4** Create questionnaire for feedback about KIT days.
- **AP 6.2** Explore policy to enable staff with teaching responsibilities to take annual leave during half-term holidays.

5.6. Organisation and culture

(i) Culture

Demonstrate how the department actively considers gender equality and inclusivity. Provide details of how the Athena SWAN Charter principles have been, and will continue to be, embedded into the culture and workings of the department.

Motivated by a new School structure and a large influx of new staff over the last five years, the School has seen a significant positive culture change in recent years. EDI has been embedded in our management structure: our DHoS is in charge of EDI, allowing important EDI policies to be easily affected through management structure and the previous chair of the EDI committee is now a DoE, allowing for continuity across the years. EDI is a standing item at SEB meetings and all decision-making committees. There is a dedicated EDI budget of £15,000 per year (**AP 7.1**) – for reference this is a quarter of the budget of the DoEs for research. This fund has been and will be used for:

- Female visitors.
- Female seminar speakers from further abroad than the normal seminar budget can afford.
- Events promoting women in Maths and Physics.
- Expenses to attend EDI events.
- Networking events such as the PDRA/PGR joint event with Durham.
- Carers' Fund, which covers childcare expenses for those attending workshops or working out of core hours for work purposes.
- Restart Fellowship, which will pay the tuition fees for a part-time PGR student, returning to academic life after a career break.

International Women's Day 2019: Marika Taylor's talk and lunch with the School



To promote a sense of community and collegiality within the School, SEB also provided funds to establish a kitchen and social space in the School, which can be used for informal meetings and discussions.



The new common room



The prevalence of EDI in School Management and throughout the Faculty has led to the principles of EDI being engrained in the daily operation of the School. Overall, there is a sense that there has been a positive shift in attitudes toward EDI. The 2018 staff survey shows that 92% of staff who responded understand the School's reasons for taking action on gender equality, compared with 85% in the 2016 survey. However, there has also been resistance towards some policies, such as seminar timing and targets for female seminar speakers. These concerns have been handled by the SAT lead and HoS with one-to-one and group meetings. We hope that with better communication of practices and benefits to all members of the School, attitudes will continue to improve over time. Communication of policies is clearly a weakness as 27% of respondents to the 2018 staff survey thought they were not clearly informed by the School about its EDI policies. Better communication of EDI policies with a variety of methods (see 3(iii)) is a high-priority action (**AP 7.6**).



"I've worked in industry and in a variety of different environments. This is the best environment with respect to gender that I have worked in."

Andrea Dawson, Physics Technician



Since 2016, the School organises Women in Maths lunches (twice a year) to encourage social interactions between female staff and students at all levels (UG and PGR) and to reduce/prevent any feeling of isolation. In the past these lunches covered topics ranging from promotion to imposter syndrome. Two years ago, the organisation of these lunches was taken over by PGR students. In the future, these events will include Physics and be organised by a staff member and a PGR student to ensure continuity (**AP 7.7**).



15



Following the request of one UG student, the School has recently created a LGBTQ+ network coordinated by an academic and a UG student with support from the EDI budget for lunches and events.

"Just knowing that I'm not the only person that feels like this made such a difference. Hearing other people's experiences of imposter syndrome took away its power and allowed me to see what I am really capable of."

*Mae Mesgarnezhad, PhD student
(comment about Women in Maths Event on Impostor Syndrome)*



Celebration following the successful PhD viva



(ii) HR policies

Describe how the department monitors the consistency in application of HR policies for equality, dignity at work, bullying, harassment, grievance and disciplinary processes. Describe actions taken to address any identified differences between policy and practice. Comment on how the department ensures staff with management responsibilities are kept informed and updated on HR policies.

The School follows all HR policies and applies these consistently. Following the restructure, the School has a dedicated HR Assistant based in the School Office. The HoS and School Manager meet with the HR Advisor on a monthly basis to ensure that we are kept up to date with changes to policies and guidelines.

In order to ensure Dignity and Respect, the School has recently implemented a number of processes:

- All committee agendas will have “feedback to Chair” as a standing item (to consider anonymous or other feedback regarding the running of a meeting).
- An online “comment in a click” form has been established which can be completed anonymously.
- A hard copy suggestion box is available in the new Staff Common Room.

Only the School Manager accesses the material submitted initially. One-to-one conversation would be held with the person submitting if that was the right course of action, ensuring confidentiality is preserved.

(iii) Representation of men and women on committees

Provide data for all department committees broken down by gender and staff type. Identify the most influential committees. Explain how potential committee members are identified and comment on any consideration given to gender equality in the selection of representatives and what the department is doing to address any gender imbalances. Comment on how the issue of ‘committee overload’ is addressed where there are small numbers of women or men.

Table 25: School committees.

Committee	Total number of members (academic in bold)	Total number of female members (academic in bold)	Proportion female (academic in bold)	Chair
School Executive Board (SEB)	10 (9)	5 (4)	50% (44.4%)	M
Board of Studies (BoS)	68 (66)	12 (10)	17.6% (15.1%)	M
School Research and Innovation Committee (SRIC)	9 (8)	4 (3)	44.4% (37.5%)	F/M alternating
School Learning, Teaching and Student Experience Committee (Maths & Stats)	13 (13)	2 (2)	15.4% (15.4%)	M
School Learning, Teaching and Student Experience Committee (Physics)	33 (32)	5 (4)	15.1% (12.5%)	F
School Equality, Diversity and Inclusivity Committee/SAT Team	17 (7)	9 (2)	52.9% (28.6%)	M
School Business and Engagement Committee	18 (11)	6 (4)	33.3% (36.4%)	F

In the previous School structure, the School Management committee, SRIC and BoS made all important decisions. The School Management committee had no female representation, SRIC had one female member and the BoS was open to all academic staff members. Currently, the decision-making committees are the SEB, SRIC and the BoS:



- The current SEB has 4/9 female academic members. One member rotates in order to offer mentoring and experience in leadership positions for junior staff. The change in SEB has led to a larger and more diverse group of academics making important decisions.
- SRIC is made up of RGL from each section, the DoEs, the PGR Director and the HoS. In response to consultation with the PDRAs, the chair of the newly-created PDRA committee (see 5.3) is a permanent member of SRIC. Currently, SRIC has 3/8 female academic members.
- BoS is open to all members of academic staff.

With such low numbers of women in the School, we are conscious to have them serve on the most influential committees. Although these percentages still don't reflect our student population, or the population as a whole, they are a significant increase to the previous management structure and are higher than the proportion of female academics in the School.

(iv) Participation on influential external committees

How are staff encouraged to participate in other influential external committees and what procedures are in place to encourage women (or men if they are underrepresented) to participate in these committees?

Nine members of academic staff serve on influential Faculty committees outside the School. Of those nine, three are female. Outside the University, numerous staff members serve on influential committees such as grant review panels, editorial boards and the LMS. Many of these staff are female, though numbers are hard to quantify as not all of this work has been regularly reported or tracked. The School encourages participation both inside and outside the University for all staff members by allowing workload credit for such activities.

(v) Workload model

Describe any workload allocation model in place and what it includes. Comment on ways in which the model is monitored for gender bias and whether it is taken into account at appraisal/development review and in promotion criteria. Comment on the rotation of responsibilities and if staff consider the model to be transparent and fair.

The School uses a workload model to ensure that tasks are distributed fairly between staff. There are standard tariffs for the most common activities in the School. These tariffs are published on the School Intranet, for example a 10-credit module is 150 points. To support research, all research active staff are allocated 600 points. The average workload is approximately 1800 points. Individual summaries of the workload are distributed to staff along with summary statistics of the distribution of workloads in the School. The tariffs were originally set after School-wide consultation and are reviewed annually by SEB.

About a third of the female staff members have workloads in the upper quartile: this is typically because of a major leadership role and grant success. Around one third are in the lower quartile: one is returning from maternity and another from sabbatical.

The DHoS has overall responsibility for workload allocation, but mostly they follow the advice of the RGL/DoE. As part of the annual workload planning cycle, staff discuss which duties they would like to pick up or lose with their RGL/DoE. The School is keen that staff are allocated duties they feel best suited for. These issues are also discussed in staff PDRs to determine which tasks are most appropriate for an individual's career planning and promotion.

(vi) **Timing of departmental meetings and social gatherings**

Describe the consideration given to those with caring responsibilities and part-time staff around the timing of departmental meetings and social gatherings.



At the time of our last application, all meetings were carried out within core hours (10am-4pm). However, all seminars occurred outside core hours. After feedback from our last application and extensive consultation, all seminars now occur within core hours. Although seemingly simple, this was a significant cultural shift for the School.



School social activities are scheduled at different times of the day over the annual cycle to ensure everyone gets a chance to participate at some point. They are advertised in advance to help people with caring responsibilities. We coordinate a variety of activities (with and without alcohol) to be welcoming to all staff and students (**AP 7.5**).

School Away Day



(vii) Visibility of role models

Describe how the institution builds gender equality into organisation of events. Comment on the gender balance of speakers and chairpersons in seminars, workshops and other relevant activities. Comment on publicity materials, including the department's website and images used.

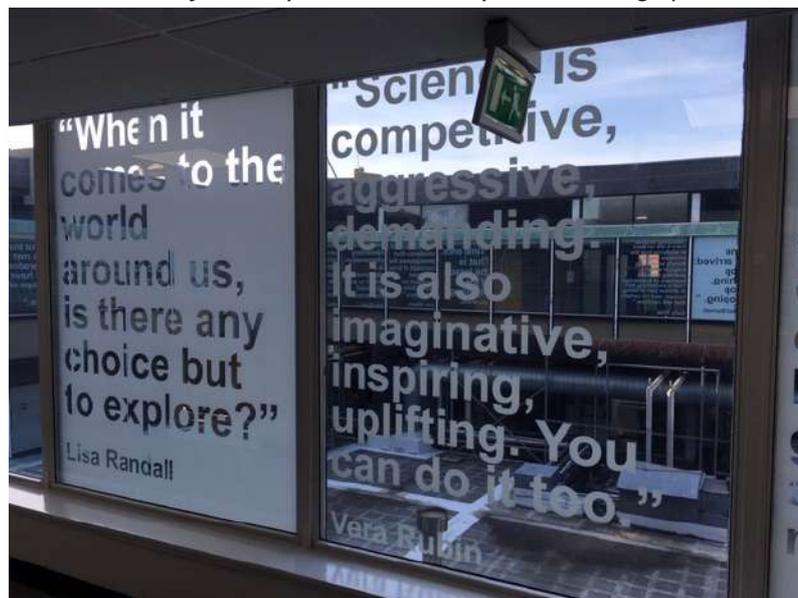


By setting targets for female seminar speakers, the proportion of female seminar speakers has increased dramatically from roughly 15% to 30% over the last three years (depending on the section, see 5.1). Continued improvement is necessary and a minimum percentage of female speakers (30%) is required at all School funded events (**AP 7.2, AP 7.3**). In response to student feedback, we now have female lecturers teaching Stage 1 Maths/Stats students.



The School is in the process of revamping its space (physical and virtual) to increase the visibility of female role models in Maths and Physics. The front foyer for the School currently only displays pictures of the previous FRS of the School (who also happened to all be white men) so we are currently planning to redesign this space to highlight the research achievements of our more diverse current staff.

Quotes from Physicists in the Physics Teaching Space



The School website has an EDI section, which currently only links to external University policies (www.ncl.ac.uk/maths-physics/equality-diversity), we are currently working on updating this website and our intranet to include our positive initiatives and actions (**AP 7.6**).



(viii) Outreach activities

Provide data on the staff and students from the department involved in outreach and engagement activities by gender and grade. How is staff and student contribution to outreach and engagement activities formally recognised? Comment on the participant uptake of these activities by gender.



Our flagship outreach activity is the WISDOM (Women in Science doing outstanding Maths) event, held annually within the School. The event has run for three years with attendance ranging from

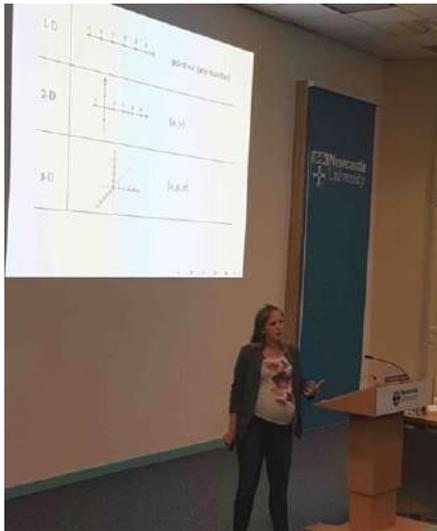
150-250 students and parents. The event is aimed at Year 9-10 girls and highlights applications of Maths across disciplines. Every year, there are three keynote female speakers, female UG, PGR and alumni speakers and helpers. There is also significant time between talks where students browse booths from a variety of employers and departments highlighting the relevance of Maths for a variety of careers. WISDOM is a very successful event, which is considered best practice within the Faculty.

"I have attended WISDOM running one of the careers stand for three years. Every year the school pupils which attend leave their talks by researchers and academics excited and eager to learn more about STEM subjects. WISDOM is a great way to get young people interested in STEM subjects and higher education. This is something which I would like to see repeated throughout the faculty and is an excellent example of best practice"

Laura Heels, Faculty Gender Champion and School of Computing



Dr Martina Balagovic (lecturer in Pure Maths) speaking at a WISDOM event and participants



In addition to WISDOM, the School puts on numerous outreach events and is conscious of female representation in their delivery. Regular participation to outreach and student recruitment events is recognised in the workload allocation model.

Table 26: Annual outreach events

Outreach Event	Female representation
Year 10 conference	50% female speakers
Year 9 problem solving	100% female speakers
Maths Inspiration	50% female speakers
Maths challenge	66% female hosts/speakers 50% female prize winners
Further Maths centre	50% female speakers
Physics Enrichment	33% female presenters



Key Achievements since 2015

- ✓ Dedicated EDI budget of £15,000/year, which supported 11 female visitors in 2017/18 and a variety of EDI activities.
- ✓ All School meetings and seminars are held within core hours.
- ✓ Improved gender representation on decision-making committees.
- ✓ Flagship activity WISDOM (150-200 attendees each year) considered best practice in the Faculty.
- ✓ EDI standing item on all decision-making committees.
- ✓ Implemented multiple staff feedback mechanisms.



Action List for 2019 Application



AP 7.1 Diversify the use of EDI budget.



AP 7.6 Improve communication on EDI policies in the School



AP 7.2 Increase proportion of female seminar speakers to ensure higher visibility of female role models across all subject areas.



AP 7.7 Organise Women in Maths and Physics lunches.



AP 7.3 School funding for workshops conditional on having a percentage of invited female speakers higher than the proportion in the field.



AP 7.5 Social activities scheduled at different times of the day and varied (with/without alcohol).

(7572 words)