



**Department Application**  
Bronze and Silver Award



Department application	Bronze	Silver
<b>Word limit</b>	<b>10,500</b>	<b>12,000</b>
<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

<b>Name of institution</b>	University of Warwick	
<b>Department</b>	School of Engineering	
<b>Focus of department</b>	<b>STEMM</b>	
<b>Date of application</b>	30 <sup>th</sup> April 2019	
<b>Award Level</b>	<b>Silver</b>	
<b>Institution Athena SWAN award</b>	<b>Date: October 2018</b>	<b>Level: Silver</b>
<b>Contact for application</b> Must be based in the department	Dr Joanna Collingwood	
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<b>Telephone</b>	02476 523152	
<b>Departmental website</b>	<a href="https://warwick.ac.uk/fac/sci/eng/">https://warwick.ac.uk/fac/sci/eng/</a>	



**Cover Picture:** clockwise from top – national Women’s Engineering Society (WES) student conference at Warwick, November 2018; School of Engineering (SoE) members of Warwick Racing with their in-house battery pack; SoE Warwick WES President and Women in Engineering Scholar at the annual SoE ‘Engineering Day’ for the public.

**SCHOOL OF ENGINEERING AWARDS:**

Athena SWAN Bronze Award 2012

Athena SWAN Bronze Award Nov 2015

**TOTAL SUBMISSION WORD COUNT = 11935/12000**

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## GLOSSARY OF TERMS

Academic staff / Academic-related	Academic staff: teaching/research roles at FA7-FA9; Academic-related staff: teaching/research roles FA5-FA9/non-FA
Acad-R	Academic post with a research-focus: Assistant Professor FA7 to Professor FA9. Category within Academic staff/Research staff.
Acad-T	Academic post with a teaching-focus: pre-2018 'Teaching Fellow', post-2018: Assistant Professor FA7 to Professor FA9. Category within Academic staff.
Acad-T&R	Academic post with a balance of teaching and research: Assistant Professor FA7 to Professor FA9. Category within Academic staff.
AO	Administrative Officer with oversight of HR in School of Engineering
AP2015	Athena SWAN Action Plan (AP) and associated impact from the 2015 SoE application
AP2019	Athena SWAN Action Plan (AP) accompanying the 2019 SoE Silver Award application
AS-2015	Athena SWAN School of Engineering Bronze submission in 2015
AS-2019	Athena SWAN School of Engineering Silver application in 2019
ASAS-2017	Primary Athena SWAN All-Staff Survey in SoE, November 2017
ASSM	Academic & Student Services Manager, SoE
AS-Network	University Athena SWAN Network Group sharing good practice and linking departments with the UoW Athena SWAN Steering Group.
BAME	Black and Asian Minority Ethnic
BEng	Bachelor of Engineering
CDT	Centre for Doctoral Training
CEE	Civil & Environmental Engineering (CEE)
DDL	Discipline Degree Leader: managerial responsibility for teaching provision in one of the four SoE Discipline Streams.
DHS	Deputy Head of School
DoS	Director of Studies
DGS	Director of Graduate Studies
DS	Discipline Stream: four discipline areas in SoE providing academic management structure: CEE, E&E, M&P, S&I.
DSL	Discipline Stream Leader: managerial responsibility for academic-related staff in one of the four SoE Streams (akin to Divisions).
ECR	Early Career Researcher (Grades FA5/FA6 and Non-FA posts such as KTP, Marie Curie, unless otherwise stated), majority FTC
EDC	Equality and Diversity Committee, University-level
ED&I	Equality, Diversity, & Inclusion
EDCW	Future Equality, Diversity, Communication and Welfare Committee, SoE
E&E	Electrical and Electronic Engineering Discipline
EO	Executive Officer (Administrative Support to Senior Management Team)
EPSRC	Engineering and Physical Sciences Research Council
ESO	Engineering Student Office
FA Grade	Employment grades for staff at UoW
F:M	Female:Male ratio
FT	Full time
GTF	UoW Gender Task Force: established 2017, to embed gender in Warwick's Strategy and support institutional AS action delivery

HAT	Head's Advisory Team, a strategy-focussed group in SoE 2015 - 2017 with diverse staff representation (Academic staff & PSS, across grades)
HEADSTART	Headstart is a course for female and male Year 12 students. It originated with the Royal Academy of Engineering promoting engineering undergraduate courses to high performing Year 12 pupils. The remit has widened to explicitly include gender diversity.
HoR	Head of Research, School of Engineering
HoS	Head of School, School of Engineering
HoT	Head of Teaching, School of Engineering
ICWES18	18 <sup>th</sup> International Conference for Women in Engineering and Science, to be hosted at UoW by DoSR/DDL for CEE in 2020.
IFMBE	International Federation of Medical and Biological Engineering
INSPIRE	3-day non-residential course for female year 11 students with an interest in STEM subjects
Intersectionality	Considering experience arising from the intersection of two or more legally protected characteristics or other key factors affecting identity.
INWED	International Women in Engineering Day (23 <sup>rd</sup> June)
INWES	International Network of Women in Engineering and Science
KTP	Knowledge Transfer Partnership
LDC	Learning and Development Centre: staff-training unit for UoW.
MEng	Master of Engineering
M&P	Mechanical and Process Engineering Discipline
MSc	Master of Science
NB	Non-binary, term used to describe individuals who chose to identify as 'other' instead of male or female; distinct from 'prefer not to say'.
NSS	National Student Survey
PDR	Personal Development Review (formally Departmental Performance Review), UoW-wide voluntary annual review process
PDRA	Post-Doctoral Research Associate
PG	Postgraduate
PGC	Postgraduate Coordinator
PGR	Postgraduate degree by research (including PhD)
PGT	Postgraduate Taught (leading to MSc qualifications)
PRP	Progress Review Panel
PTES	Postgraduate Taught Experience Survey, co-ordinated by Advance HE
PSS	Professional and Support Staff (administrative: PSS-Admin; technical: PSS-Tech)
PT	Part time
PULSE	PULSE is the University's Staff Engagement Survey, conducted regularly to identify staff views on a range of university and employment issues.
RAE2008	Research Assessment Exercise in 2008
RC	Research Committee
RDM	Research Development Manager
REF2013	Research Excellence Framework evaluation 2013
REF2021	Forthcoming Research Excellence Framework evaluation 2021
R&IS	Research & Impact Services: central UoW administrative function, key support for academics and collaborators developing research bids.
RO	Research Officer in the School of Engineering

SAO	Senior Administrative Officer
SAT	Athena SWAN Self-Assessment Team in the School of Engineering
HR-AT	HR Administrative Team
SCS	Student Careers & Skills (UoW, with SoE-dedicated advisor)
S&I	Systems and Information Engineering Discipline
SMC	School Management Committee in the SoE
SMT	Senior Management Team in the SoE
SoE	School of Engineering
SRO	Student Recruitment Officer
SSLC	Staff Student Liaison Committee
STEMM	Science, Technology, Engineering, Mathematics and Medicine
TEC	Teaching Excellence Committee in the School of Engineering
ToR	Terms of Reference
UB	Unconscious Bias
UG	Undergraduate
UoW	University of Warwick
WWES	WES-affiliated Warwick student group
WES	Women's Engineering Society (national)
WiE-Scholar	Women in Engineering Scholar
WiBME	Women in Biomedical Engineering Committee (international)
WM	Web Manager for SoE
WMG	Warwick Manufacturing group, a separate department that co-teaches on SoE undergraduate courses
WP	Widening participation

## SCHOOL OF ENGINEERING ACTION PLAN 2019 PRIORITY AREAS

- 1 ENCOURAGING APPRAISAL** Improve understanding among all staff of the benefits of appraisal (Personal Development Reviews, **PDRs**), to encourage higher participation levels in our UoW-wide voluntary process. Staff engagement dropped below 50% in 2018 following UoW revision to the PDR process. Therefore, it is essential that SoE does not present barriers to progression if staff choose not to participate in the PDR process. **(Examples: AP-2019-2.a)**
- 2 COMMUNITY GROWTH** Increase Unconscious Bias (**UB**) training for staff and students, and introduce Bystander training to support students and staff tackle inappropriate behaviour, promoting more open and supportive communication and culture. Increase completion rates of biennial PULSE staff survey to >70% to ensure SoE is fully aware of staff welfare concerns. Areas of concern highlighted in PULSE include increased level of work life balance, staff are kept informed on SoE committees ensuring a transparency and communication, improved communication, networking opportunities and raise awareness of the diversity of staff in SoE. **(Examples: AP-2019 - 5a, 5b, 6a, 7a, 7b, 7c, 7f)**
- 3 CAREER PIPELINE: PGR to EARLY-CAREER ACADEMIC** Actions encouraging a higher proportion of female postgraduates (**PG**) to progress into postdoctoral (**PDRA**) roles, and to enable PDRAs to return to academia after career breaks (e.g. raising children). Trialling a Returners Fellowship modelled on best practice in the Daphne Jackson Fellowship scheme, and drawing on recent experience of the Zeeman Lectureships in Maths at UoW that offer a trial period at Acad-FA7 for an individual to explore the academic career path with departmental support. Ensure gender is not a barrier to progression and postdoctoral and early career academics have the opportunity to develop a personal career development plan with support of their line manager, including support from the LDC. Ultimately increasing the numbers of female applications to academic posts. **(Examples: AP-2019 - 2c, 2e, 4a).**
- 4 INTERSECTIONALITY AMONG STAFF AND STUDENTS** Address under-representation where more than protected characteristic is involved (for example: UK-sector-wide BAME under-representation of female engineers, and within SoE there is striking BAME under-representation in PSS for females in PSS-Tech and males in PSS-Admin). Promotion of female role models with partnership between SoE and student-led groups including WWES to help break down the stereotypes and have an understanding of student concerns prior to arrival at Warwick relating to ED&I. Raising awareness of the Athena SWAN agenda internationally will ensure SoE has better understanding of diverse cultural challenges faced by current and prospective international staff and students. **(Examples: AP-2019 – 2e, 2m, 4a, 4b, 4c, 7d, 7f)**
- 5 ENGINEERING DISCIPLINE FOCUS** Explore pipeline issues as a factor for engineering sub-disciplines, identifying how UGs are influenced in degree selection, and scope to increase gender diversity in the most under-represented areas. Possible gender bias in teaching materials limits gender diversity in our student cohorts and in their future ambitions. Ensure that students are aware of the concept of UB and that 100% of 1st year UG students receive appropriate UB training **(Examples: AP-2019 – 4d, 4f).**



## 1. LETTER OF ENDORSEMENT FROM THE HEAD OF DEPARTMENT

AS2019 School of Engineering

Athena SWAN  
Equality Challenge Unit  
First Floor, Westminster Tower  
3 Albert Embankment  
London SE1 7SP

10 January 2020

Dear Athena SWAN manager,

I am writing to endorse the Athena SWAN silver submission from the School of Engineering (SoE), University of Warwick (UoW). I confirm that the information presented in this application, both quantitative and qualitative, is an honest, accurate and true representation of the department.

I became Head of School (HoS) in September 2017 and it has been a pleasure to have direct involvement in the implementation of actions following the successful 2015 Athena SWAN Bronze submission, and witness the increasingly positive impact through a number of initiatives, including increased gender diversity among SoE staff and students.

### **Quantifiable impact from our 2015 Athena SWAN Action Plan includes:**

- Significant increase in senior management diversity: School Management Committee female membership **increased +46%** from 10% (08/2015) to 56% (08/2018)
- **Four** female academics promoted to **Readerships** (2015-2018), overturning lack of female Associate Professor progression from 2012-2015.
- Two female academics promoted to Professor in 2018/19 (post-submission census date), diversity **increased +5.7%** from 11.5% (08/2015) to 17.2% [**5.5% ahead of sector @ 11.7% AdvanceHE2018**].
- UG cohort female diversity **increased +3%** from 19.2% (10/2015) to 22.2% (10/2018) [**5.6% ahead of sector @ 16.6% AdvanceHE2018**].
- PGT cohort diversity **increased +17.8%** from 18.4% female (10/2015) to 36.2% female (10/2018) [**12.2% ahead of sector @ 24.0% AdvanceHE2018**].

The quantifiable increase in staff diversity addresses key issues we had identified in the academic pipeline in 2015, and qualitative impacts are also evident.

Athena SWAN is valued in SoE because it encourages deeper understanding of diversity issues, and supports SoE to meet its strategic goals. SoE senior management appointments have been made on merit, but I have also been keen to increase the diversity profile to improve the breadth of perspectives influencing policy decisions, as well as increasing role model diversity. Within SoE we consult with individual staff in as confidential a way as possible to accommodate scheduling and flexible working requirements. Ultimately, I hope these changes continue to strengthen the relationships between individual members of staff and SoE.

I have first-hand experience of seeing the benefits of gender diversity from my time in the automotive industry in the late 1990s. Whilst the industrial context was to ensure products met the requirements of both female and male drivers, the wider benefits of gender diversity in design, project management and leadership roles drove cultural changes in the business benefitting all staff.

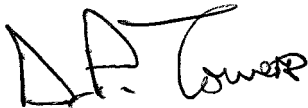
Many challenges remain, and we highlight in [Section 2 five Action Plan 2019 Priority Areas](#); the details and rationale for prioritization follow in [Sections 3 - 8](#).

- ① Encouraging Appraisal
- ② Community Growth
- ③ Career Pipeline: PGR to Early-Career Academic
- ④ Intersectionality among staff and students
- ⑤ Engineering Discipline Focus

I feel there is a momentum and growing understanding of the importance of diversity, including intersectionality, at all levels within SoE and the positive effect this has on our performance. We continue to champion this issue, and look forward to engaging with the international community when we host ICWES18 in 2020.

[Word count = 558 + AP2019 content/references]

Yours sincerely



Professor David Towers  
Head of School

See overleaf

## 2. DESCRIPTION OF THE DEPARTMENT

Founded in 1965 UoW SoE is one of the UK's leading unified schools. SoE is consistently in the top ten of all UK university league tables, with an international reputation for excellence in research and teaching, offering degrees in 19 engineering fields: 12 undergraduate (**UG**), 7 postgraduate taught (**PGT**); alongside postgraduate degrees by research (**PGR**). SoE is the third largest integrated department of its kind in the UK based on academic staff numbers, and the second largest recruiter of UG students. Since 2014, SoE has gone through a period of rapid growth and change, including increased staff numbers [Section 4.2], but also UoW-wide changes to processes such as timetabling and staff appraisal impacting since our Bronze AS submission (**AS-2015**). UoW-wide decline in engagement with a formal appraisal process is a priority for SoE under **AP2019**. → **CATALYST FOR AP-2019 Priority Area 1 Encouraging Appraisal**

The organisational structure of SoE is shown in **Figure 2\_a**, following the demographic overview in **Table 2\_a**. Compared with senior management staffing in 2015 (100% male), there has been a significant increase in gender diversity in leadership, with the Senior Management Team (**SMT**) 40% female, and gender equality in the leadership of the four engineering Discipline Streams (**DS**) used for academic staff and teaching management (**Figure 2\_b**). The four DS's developed as a common framework for teaching and research: research groups are now identified within a particular DS but flexibility remains over affiliation of individual researchers to any research group. This revised structure gives greater clarity over line management to each DS Leader (**DSL**), whilst members of the SMT remain directly accessible as needed.

Our **AP2015** work has delivered changes that support staff regardless of gender identity, including timetabling of delivered teaching systematically accommodating staff caring responsibilities [Section 6 Case Studies], and an ED&I-team-led focus group on Bullying and Harassment addressing concerns reported in the PULSE2018 UoW-wide staff survey. Underpinning this work is the knowledge that women are historically under-represented in the engineering sector, constraining recruitment; the UK has one of the lowest proportions of women in engineering in the developed world. Factors such as role model visibility, and an understanding of the impact of UB on opportunities for career progression, have informed development of our **AP2019**, which will enable us to embed processes and curriculum content to support long-term change. → **CATALYST FOR AP-2019 Priority Area 2 Community Growth**

A priority has been understanding the constraints and opportunities in the pipeline from student admissions to senior-career stage, and to identify where SoE can make national and international contributions to increase the number of women entering the engineering profession. Progress towards this objective is evident in our changing demographic from 2015 to 2018 (**Table 2\_a**), but despite now approaching sector value for early career researchers (**Acad-R-FA5-6, Table 2\_a**), female headcount remains low. Head of Research (**HoR**) encouraged a former PDRA to apply for a Daphne Jackson Fellowship after a career break (outcome pending), and our HoS champions a proactive

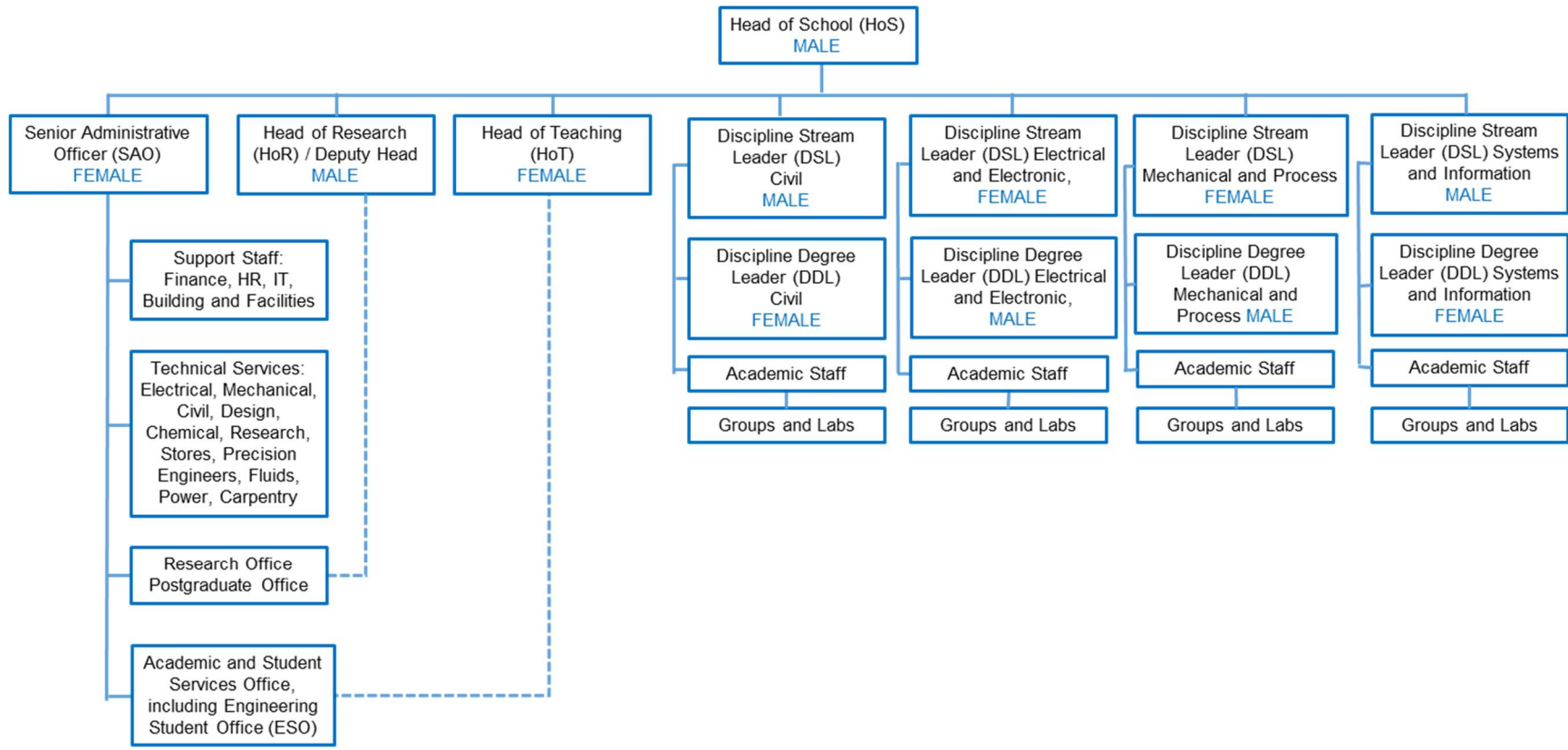
approach, trialling a returners scheme. → CATALYST FOR AP-2019 Priority Area ③ Career Pipeline: PG to Early Career Academic

Staff and student numbers presented in this submission are by headcount: staff number 218 (at 01/08/2018); 55 (25%) female. This is lower than the UoW institutional gender split which is 53% female. Other protected characteristics demonstrate above-average diversity compared with UoW, including self-reporting of disability that can indicate how supported individuals feel. Institutionally 2.4% female and 2.0% male declare disability, whereas in SoE reporting is higher at 3.1% (**Figure 2\_c**) with academic-related staff reporting at 2.7% and PSS at 3.9%. Sector-wide this is in line with disclosure rates of 2.1% – 3.6% for academics according to engineering sub-discipline [2018-AdvanceHE report Table 2.14]. Institutionally, 16% of employees are Black & Asian Minority Ethnic (**BAME**), compared with 25% in SoE: ethnic diversity is greater among SoE academic-related staff (35%), and lower for SoE PSS (5%). SoE academic BAME diversity is consistent with UK sector for General Engineering (13% UK BAME, 48% non-UK BAME) [2018-AdvanceHE report Tables 3.16, 3.18] Current staff diversity in the context of job function is illustrated in **Figure 2\_d**; part time (**PT**) working is utilized across all functions; and BAME is the characteristic most skewed with respect to headcount. → CATALYST FOR AP-2019 Priority Area ④ Intersectionality among Staff and Students

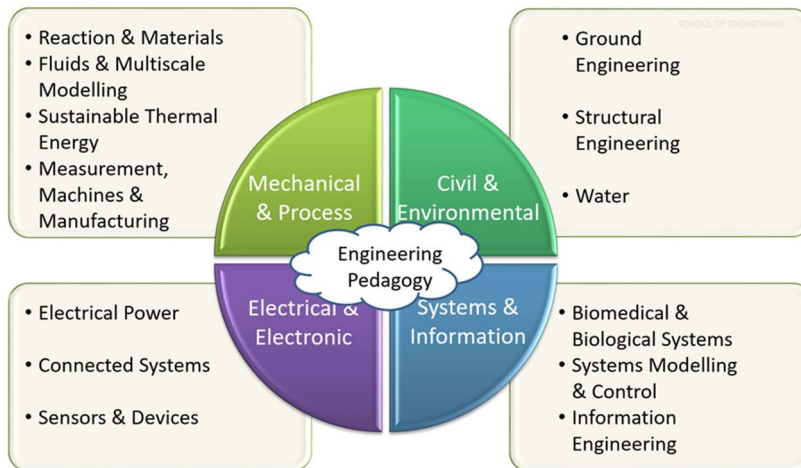
**Table 2\_a:** Academic, PSS and student headcount for 2018 versus 2015. \*PGR recruitment mid-year and incomplete, UoW census in May 2019. Benchmarking is for **General Engineering (AdvanceHE-2018 Staff and Student Reports)**, which sets a benchmark 1% higher than the aggregate value achieved by mapping SoE DS (CEE/E&E/M&P/S&I) to the corresponding **AdvanceHE categories (CENG/ELEC/MECH/ITCS)**.

Category	HEADCOUNT SCHOOL OF ENGINEERING (SoE)			FEMALE:MALE RATIO SCHOOL OF ENGINEERING (SoE)			FEMALE:MALE RATIO SECTOR COMPARISON	
	2015	2018	Female change in headcount 2015-2018	2015	2018	F:M change 2015-2018	General Engineering (*AdvanceHE2018; ^Engineering UK 2017)	Gender diversity SoE c.f. Sector
<b>Total staff number</b> Census 1 <sup>st</sup> August	<b>209</b> 39F/170M	<b>218</b> 55F/163M	<b>+ 16</b>	<b>0.23</b>	<b>0.34</b>	<b>+ 0.11</b>		
Acad-T&R/T/R [FA7-FA9]	<b>83</b> 13F/70M	<b>87</b> 15F/72M	<b>+ 2</b>	<b>0.19</b>	<b>0.21</b>	<b>+ 0.02</b>	<b>0.19<sup>#</sup></b>	Slightly more diverse
Acad-R [FA5-6 & non-FA]	<b>66</b> 8F/58M	<b>57</b> 12F/45M	<b>+ 4</b>	<b>0.14</b>	<b>0.27</b>	<b>+ 0.13</b>	<b>0.28<sup>#</sup></b>	Approaching equivalence
PSS-Admin	<b>27</b> 17F/10M	<b>35</b> 26F/9M	<b>+ 9</b>	<b>1.70</b>	<b>2.89</b>	<b>+ 1.19</b>	<b>4.13<sup>#</sup></b>	Significantly more diverse
PSS-Tech	<b>33</b> 1F/32M	<b>39</b> 2F/37M	<b>+ 1</b>	<b>0.03</b>	<b>0.05</b>	<b>+ 0.02</b>	<b>0.05<sup>^</sup></b>	Slightly more diverse
<b>Total student number</b> Census 30 <sup>th</sup> October	<b>1351</b> 260F/1091M	<b>1336</b> 298F/1037M/1NB	<b>+ 38</b>	<b>0.24</b>	<b>0.29</b>	<b>+ 0.05</b>	<b>0.20<sup>#</sup></b>	Significantly more diverse
Undergraduates (UG)	<b>1150</b> 211F/ 939M	<b>1090</b> 225F/ 864M/ 1NB	<b>+ 14</b>	<b>0.22</b>	<b>0.26</b>	<b>+ 0.04</b>	<b>0.18<sup>#</sup></b>	Significantly more diverse
Postgraduate Taught (PGT)	<b>65</b> 12F/53M	<b>91</b> 33F/58M	<b>+ 21</b>	<b>0.23</b>	<b>0.57</b>	<b>+ 0.26</b>	<b>0.32<sup>#</sup></b>	Significantly more diverse
Postgraduate Research (PGR)	<b>136</b> 37F/99M	<b>155 *</b> 40F/115M	<b>+ 3 *</b>	<b>0.37</b>	<b>0.35 *</b>	<b>- 0.02 *</b>	<b>0.33<sup>#</sup></b>	Slightly more diverse

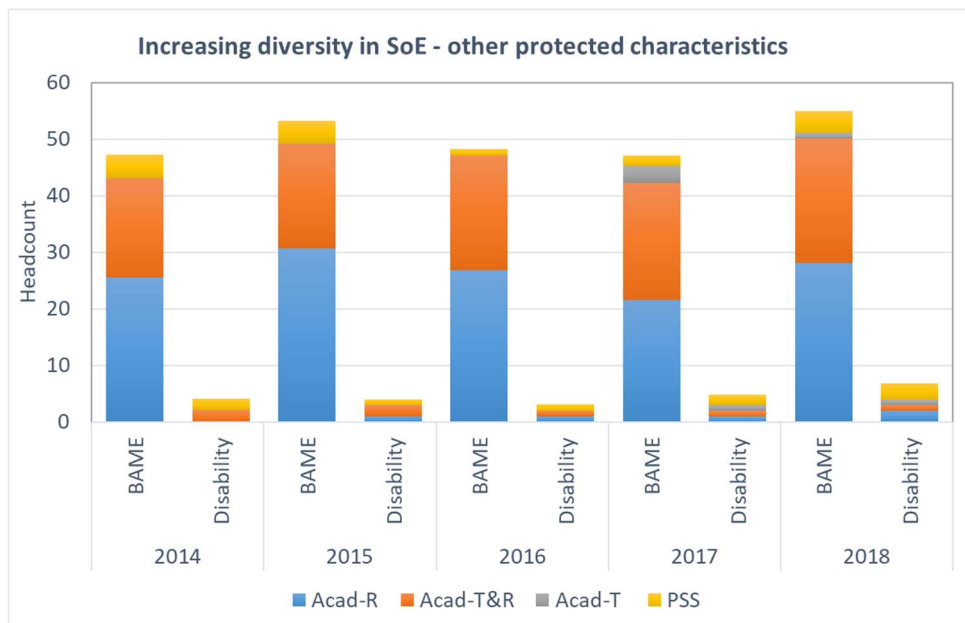
Figure 2\_a: Organisational structure of SoE



**Figure 2\_b:** The four Discipline Streams and associated topics



**Figure 2\_c:** Staff diversity in SoE 2014-2018

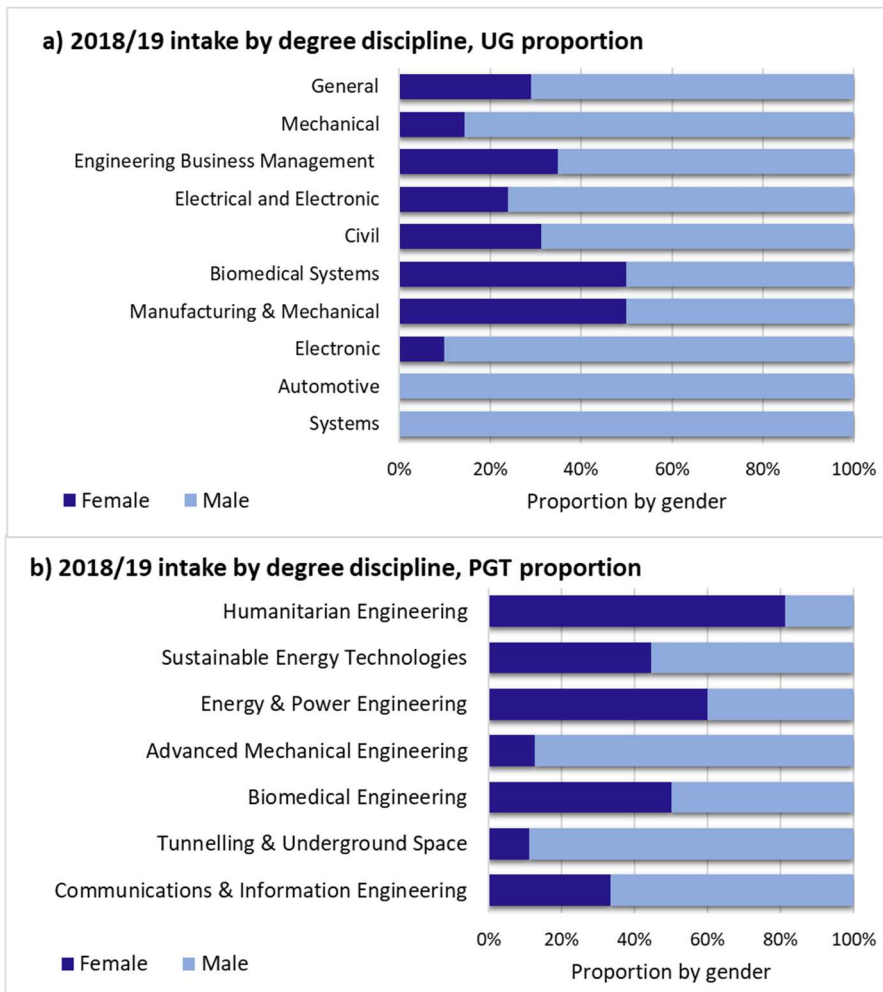


**Figure 2\_d:** SoE staff diversity in the context of protected characteristics, job function and full-time (FT) or PT working at 01.08.2018.

*Figure removed in public domain version to ensure anonymity due to low numbers in some areas*

In the student cohort, gender diversity varies with engineering degree subject as illustrated in **Figure 2\_e**. → Catalyst for AP-2019 Priority Area 5 Engineering Discipline Focus This is examined in more detail in **Section 4.1\_v**.

**Figure 2\_d:** a) UG and b) PGT 2018/19 proportional intake by subject area.



[Section 2 word count = 748 words]



### 3. THE SELF-ASSESSMENT PROCESS

(i) A description of the self-assessment team

**Table\_3.1\_a:** The Self-Assessment Team (SAT), including members from the AS-2015 SAT (\*) and those new in post since 2015. SAT staff annual workload recognition: SAT-Chair = 200 hours, SAT-member = 50 hours.

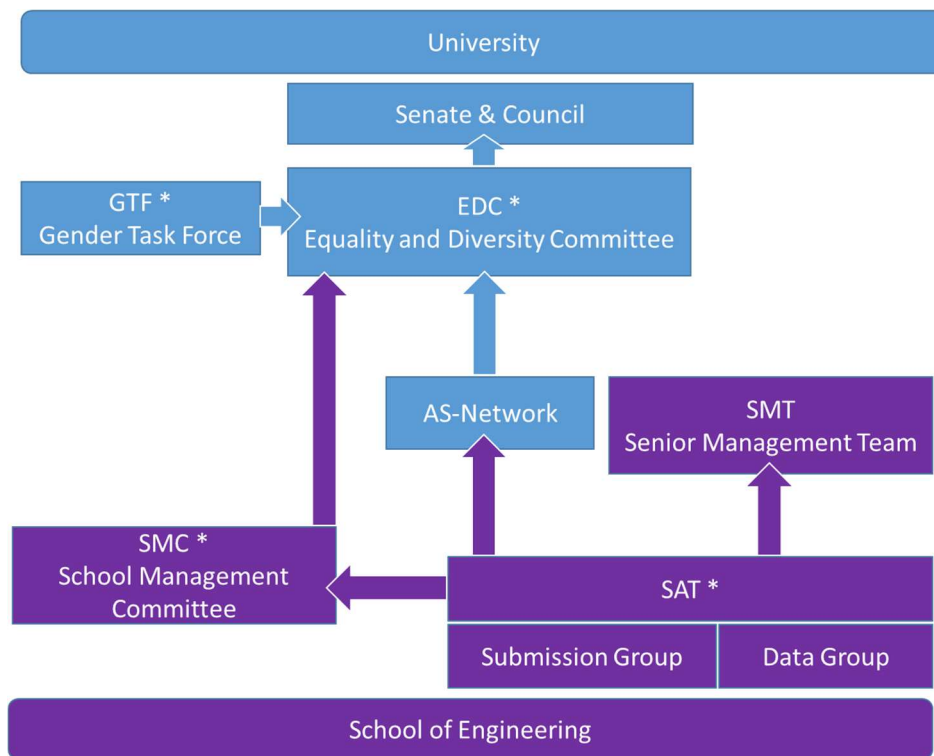
NAME	GENDER	ROLE /GRADE	SAT ROLE & CONTRIBUTION
* Joanna Collingwood	Female	Acad-T&R-FA8 Reader, FT, GTF-Chair	Appointed SAT-Chair, leads AS delivery, submission team, final assembly and review.
Amir Ben-Romdhame	Male	UG Student, SSLC Representative	Nominated by HoT, Data analysis, survey design, encouraging UG survey participation
Jake Brooks	Male	PhD Student, Biomedical Engineering	Nominated by SAT-Chair. Data analysis, survey design, Outreach experience including widening participation (WP)
* Rosanna Castaldo	Female	PDRA (former SoE PhD Student)	Supervisor-nominated, data analysis, survey design, presents AS internationally (IFMBE-2016/2018), WiBME member
Carys Evans	Female	UG Student, Civil Engineering, graduated 2018, 1 <sup>st</sup> class	Tutor-nominated, Data analysis; survey design; WiE Scholarship holder
Julie Freemantle	Female	Academic & Student Services Manager (ASSM), FT	Appointed, Staff/Student data advisor, collection and analysis
Rachel Grimes	Female	Executive Officer (EO), FT	Appointed (key to role), AP developer and manager; submission coordinator
* Amy Hamson	Female	Senior Administrative Officer (SAO), FT	Appointed (key to role), AP development/ implementation; PSS content, editing, final review
* Georgia Kremmyda	Female	Acad-T-FA8, DDL CEE, FT	Line-manager-nominated, Data Group, WES Council, INWES/ INWES Europe, ICWES2018 Host

Peter Lever	Male	Website Manager (WM), FT	Appointed (key to role), website development, role model display content
* Leandro Pecchia	Male	Acad-T&R-FA8, FT	Volunteered, lead for international AS impact
Adrian Seymour	Male	Building Facilities Manager, FT	Volunteered, Event initiation, display provision, AP delivery, advisor, survey development, testing
Kathryn Thompson	Female	Student Recruitment Officer (SRO), FT	Nominated by SAO, Social media design, delivery, student recruitment and applicant surveys
David Towers	Male	HoS, Acad-T&R-FA9, FT	Appointed, implementation of AP2015, AP2019, submission development
Caroline Whitehouse	Female	Administrative Officer, HR	Nominated by SAO, HR data acquisition and advice, PDR engagement data, final review
Natalie Wride	Female	PhD (sabbatical from Arup)	Volunteered, Data analysis, staff and student survey design and testing; AP development
Gill Cooke	Female	Acad-T&R-FA9, HoT, FT	Appointed through role, Teaching overview, admissions strategy, AP2015 delivery, AP2019 review
* Daciana Iliescu	Female	Acad-T&R-FA8, Outreach, FT, Multicultural Scholars programme lead	Volunteered, Admissions, Outreach overview, workload model, survey design
Duncan Lockerby	Male	Acad-T&R-FA9, Head of Research (HoR), FT	Appointed, Research overview, AP Review, REF engagement, facilitating committee shadowing
* Nigel Stocks	Male	Acad-T&R-FA9, FT, former HoS	Invited, founded Head's Advisory Team for AS oversight (2015-2017)
* Claire Algar	Female	ED&I Officer, FT, Athena Panellist, Stonewall Ally 2018	Invited, SAT Advisor, Overview of AS-2019 submission
* Sandra Beaufoy	Female	ED&I Manager, FT, Athena Panellist	Invited, SAT Advisory, Overview of AS-2019 submission

(ii) An account of the self-assessment process

SAT members were appointed/nominated as described in **Table 3.1\_a** based on role and/or experience, bringing together a diverse group with complementary skills, experience (including former **HoS** and Head's Advisory Team (**HAT**) Chair), and networks to deliver impact with **AP2015** in SoE. The SAT Chair is the ED&I representative on the School Management Committee (**SMC**), and leads on the standing ED&I agenda in order to give updates on staff/student data and together with senior managers to agree ownership of actions and their implementation.

**Figure 3.2\_a:** The reporting structure for the SAT in SoE, feeding into UoW ED&I management, with the SAT representing staff groups throughout SoE and SMT serving as the advisory members of the SAT.



\* SAT Chair presently serves as SMC ED&I Rep, EDC Faculty Rep, and GTF Chair

Consultations with staff and students were conducted (summarized in **Table 3.2\_a**), and guidance on ED&I was explicitly sought from the external panel conducting the 2015 Research Review for SoE, shaping SoE strategy and the **AP2015**. Additional guidance was obtained by SAT members participating in national WES meetings, InsideGovernment Women in STEM events, EPSRC Early Career Engineering Forum, and via online diversity resources from WES and the Royal Academy of Engineering (**RAEng**).

Beyond **AS-2015**, the SAT Chair reported on **AP2015** progress to HAT and SMC twice termly. The formal SAT expanded in response to **AS-2015** Panel feedback, incorporating all members of SMT as core or advisory members, meeting monthly from December 2016. Two-hour meetings with lunch were scheduled accommodating staff flexible/PT working arrangements.

SAT-led All-Staff surveys (**Table 3.2\_a**) provided feedback June/November 2017. Data Group updated SMC with staff/student metrics in December 2017, monitoring impact of new degrees on student recruitment, and a new WES Educational Partnership on academic recruitment. **AS-2019** was coordinated by the SAT Submission Group (SAT Chair, EO, SAO, HoS).

**Table 3.2\_a** Summary of survey methods used. SAT-led surveys marked (\*)

Survey method & scope	Date(s)	Engagement
PULSE 2016, all UoW staff	Spring 2016	UoW: 63% response (3705/5854) SoE: 44% response (91/207) 16% F, 70% M, 14% undeclared
PULSE 2018, all UoW staff	Spring 2018	UoW: 74% response (4804/6477) SoE: 69% response (150/217) 22% F, 63% M, 15% undeclared. 123 FT, 13 PT, 14 undeclared. 108 OEC, 27 FTC, 15 undeclared.
* All Staff Values Survey 2017 (ASVS-2017), SoE	Summer 2017	All SoE members attending the SoE summer All Staff Meeting and lunchtime BBQ [Section 5.6_i]
* All Staff Athena Survey 2017 (ASAS-2017), detailed online anonymous survey of issues from ED&I perspective.	November 2017	50% of all SoE staff, with all staff categories proportionally represented.
ECR (PDRA) new training-focussed survey within SoE	Sept 2018	20% engagement [Section 5.3_iii]
UoW Postgraduate research experience survey (PRES) to inform internal improvements	Biennial (2017,19)	SoE engagement 29% in 2017, UoW 2019 target is 50%.
National PGT Experience (PTES)	Annually	2016: 26% / 2017: 34% / 2018: 39%
National Student Survey	Annually	SOE UG finalists: 2017: 64%, 2018: 75%
Open Day and Offer Holder Surveys (prospective students and parents)	Year-round	Voluntary by participants Open Day survey online by UoW Offer-holder by SoE
Outreach course surveys: e.g. 'Smallpeice', by external provider	Annually	'Smallpeice': 100% attendees engaged, female, year 10/11
* UG Values Survey (same format as ASVS-2017)	Jan 2018	All first year UGs attending core ES101 ED&I lecture
* UG Athena Survey trial (UGAS-2018), self-selecting volunteer response to email to all UGs, not strongly promoted to avoid clash with concurrent NSS.	Spring 2018	71 participants: [35% F, 63% M, 1% NB] [49% white, 30% BAME, 21% other] [4% disability, 1% carer] Year 1/2/3/4: 37%/31%/14%/14%

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

Preparation of this submission revealed SoE has made strong progress on developing and implementing processes, promoting role models, and increasing staff and student gender diversity for all groups where women are in a minority. An Equality, Diversity, Communication and Welfare (**EDCW**) committee will form summer 2019, incorporating the SAT, with the same reporting structure (**Figure 3.2\_a**), but an broader diversity and well-being remit.

A priority is to embed more frequent reporting of ED&I data to EDCW, to evaluate impact and support refinement of **AP2019**. The RAEng and Science Council co-published a “*Diversity and Inclusion Progression Framework for professional bodies*”, and with reference to the four-level maturity model (**1. Initiating** → **2. Developing** → **3. Engaging** → **4. Evolving**), SoE transitioned through **Level 3 Engaging** via the **AP2015**, meeting the criteria of *the case for change well-established, activity catching on, sustained senior support in place, and clear signs of change*. The work we have set out in **AP2019** will enable us to complete our move to **Level 4: Evolving**, where the case for change is dynamic, quantitative data are routinely shared, we can evidence clear change in individual behaviour and organisational culture, and confirm the national and international impact of our work for staff and students through initiatives including our WES partnership activities and hosting INWES18.

To deliver **AP2019**, recruitment to the new EDCW Committee will be undertaken using role descriptors. Where roles are not post-specific, this will enable all members of SoE to apply.

Qualitative and quantitative information gained from PULSE-2016/2018 and our ASAS-2017 has shaped our current **AP2019**, we will use the ASAS tool in future ensuring increased consultation with students and sustaining consultation with staff as set out in **AP2019**.

[Section 3 word count = 535 words]

## FUTURE ACTION POINTS FOR AP2019

**AP-2019-1.a Expand the Athena SWAN webpage to cover broader Equality, Diversity and Wellbeing issues. This will act as a landing page providing both University and School information on community, family related policies, LGBTUA, mental health, disability, recognition and awards, promotion, informal support networks and social events.**

- i. Develop Equality, Diversity and Wellbeing web area to improve communication and access to information and support for all SoE staff.
- ii. Website to be continually reviewed and updated as new information and resources become available with links being checked on a quarterly basis.
- iii. Trial 'Huddle' system as a communications tool to relay updates on Equality, Diversity and Welfare issues to staff instantly.

**AP-2019-1.b To expand and develop the Self-Assessment Team reforming as the EDCW Committee. This Committee will be responsible for collating annual data in order to monitor and share the developing Action Plan**

- i. Establish Committee with role descriptors, full ToR, membership and scheduling of meetings.
- ii. Allocate responsibility of collecting yearly data.
- iii. AS submission and Action Plan to be an agenda item at All-Staff Meetings.
- iv. Annual report on AS activities, data and action plan progress to be published and circulated to SoE.
- v. AS Action Plan to be reviewed annually.

**AP-2019-1.c Publish a report on the key issues identified from the ASAS and UGAS circulating to SMC for comment and proposed action before sharing with staff.**

- i. Issues to be collated and discussed at the EDCW committee.
- ii. Report to be prepared and circulated to SMT and then to all staff.
- iii. Staff and student working groups to be set up to discuss issues and form actions.
- iv. Actions to be presented to SMC for agreement and implementation of actions.

## 4. A PICTURE OF THE DEPARTMENT

### 4.1. Student data

#### IMPACT DELIVERED FROM ACTION PLAN 2015

The increased gender diversity in our student cohort is evidenced through **Section 4.1**

**Objective:** Gender is not perceived as a barrier to student applications, progression and employment.

**Approach:** SoE Athena website promotion in advertisements/recruitment literature; consulting with SoE members and external partners on potential barriers to female applicants; offering Women in Engineering (**WiE**) Scholarships to 1<sup>st</sup> year UGs; expanding humanitarian-engineering-related offerings at UG/PGT level.

#### Success Measure

**Students:** Female UG/PGT/PGR headcount increased since 2015, UG/PGR F:M ratio well-ahead of UK sector, with highest F:M in 2018/19 for new humanitarian-focused degrees (UG Biomedical Systems F:M=1, PGT Humanitarian Engineering F:M=4.3). Female SoE graduate earnings ranked 5<sup>th</sup> in UK for engineering sector.

**Table 4.1** UG and PGT degree courses offered by SoE: all are FT, but CEDA and HE offer a different model with intense blocks of delivered teaching integrated with employment.

	<b>Undergraduate (UG)</b>
ENGA	Automotive Engineering
ENGBE	Biomedical Systems Engineering
ENGC	Civil Engineering
CEDA	Civil and Infrastructure Engineering <i>[Degree Apprenticeship]</i>
ENGEE	Electrical and Electronic Engineering
ENGX	Electronic Engineering
ENG	Engineering
ENG/BS	Engineering and Business Studies
ENGBM	Engineering Business Management
ENGMM	Manufacturing and Mechanical Engineering
ENGML	Mechanical Engineering
MENGS	Systems Engineering
	<b>Postgraduate Taught (PGT)</b>
AME	Advanced Mechanical Engineering
BME	Biomedical Engineering
CIE	Communications and Information Engineering
EPE	Energy and Power Engineering
SET	Sustainable Energy Technologies
TUS	Tunnelling and Underground Space
HE	Humanitarian Engineering

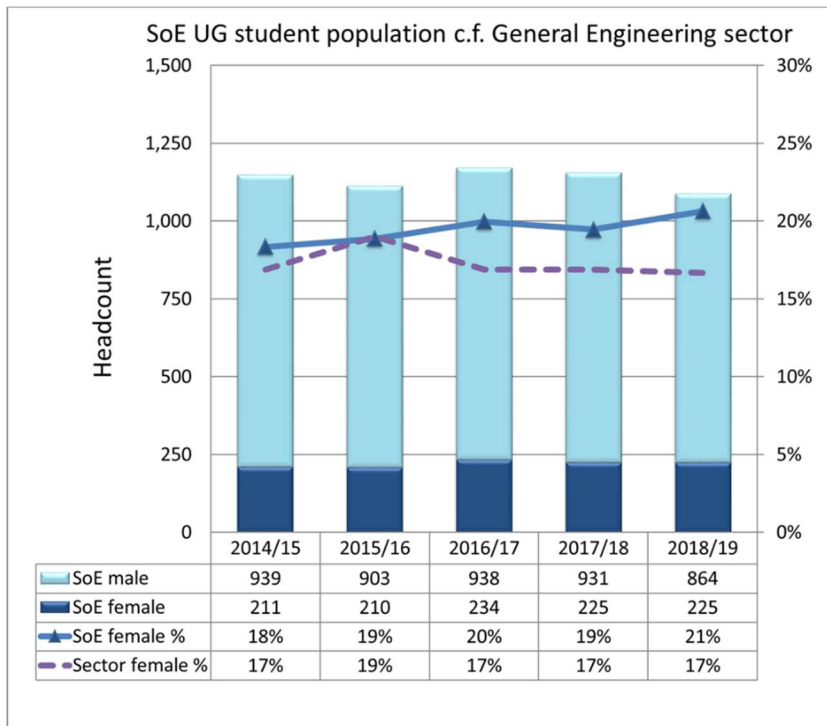
(i) Numbers of men and women on access or foundation courses

N/A

(ii) Numbers of undergraduate students by gender

The gender diversity of the total UG headcount increased from **17%** (2014/15), to **21%** (2018/19) (**Figure 4.1\_ii\_a**). This continues to be ahead of the latest sector value for General Engineering UK (**16.6%**; Advance HE 2018).

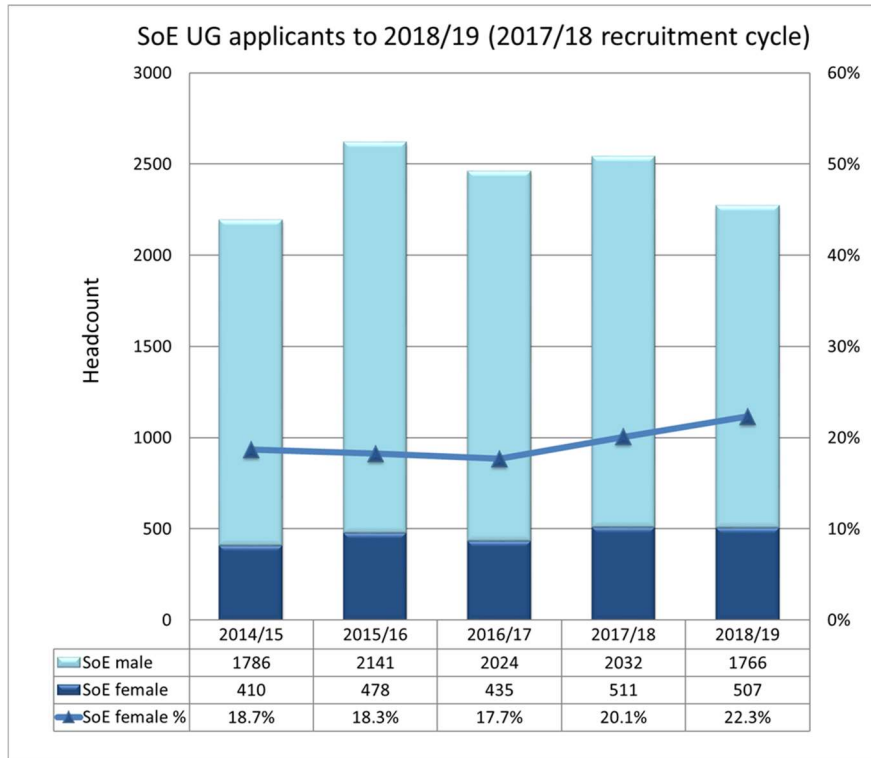
**Figure 4.1\_ii\_a: UG student headcount (FT) 2014-2018**





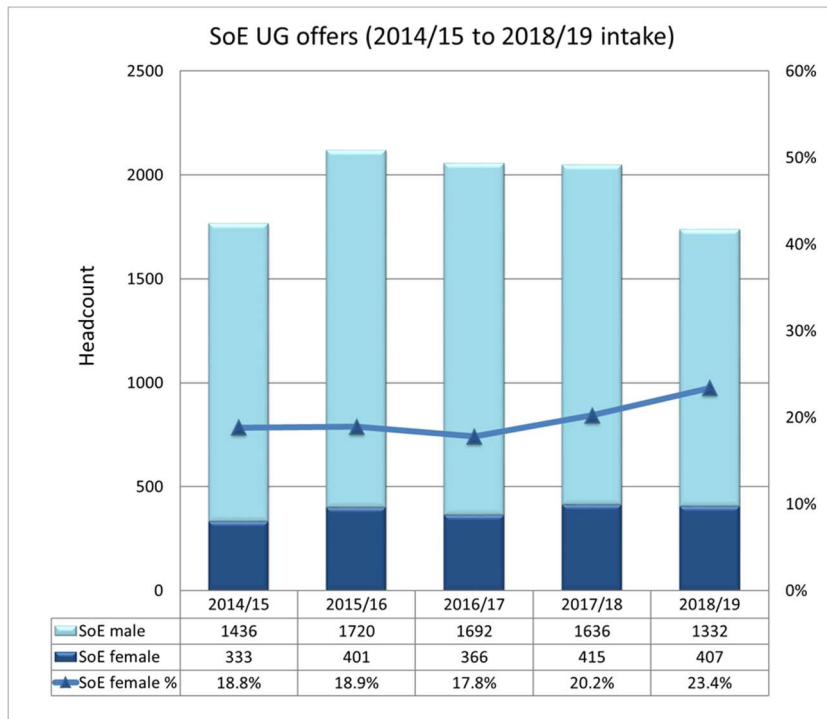
Recruitment up to 2017-18 (2018-19 intake) was as follows:

**Figure 4.1\_ii\_b:** UG student applicants by gender 2014-2018

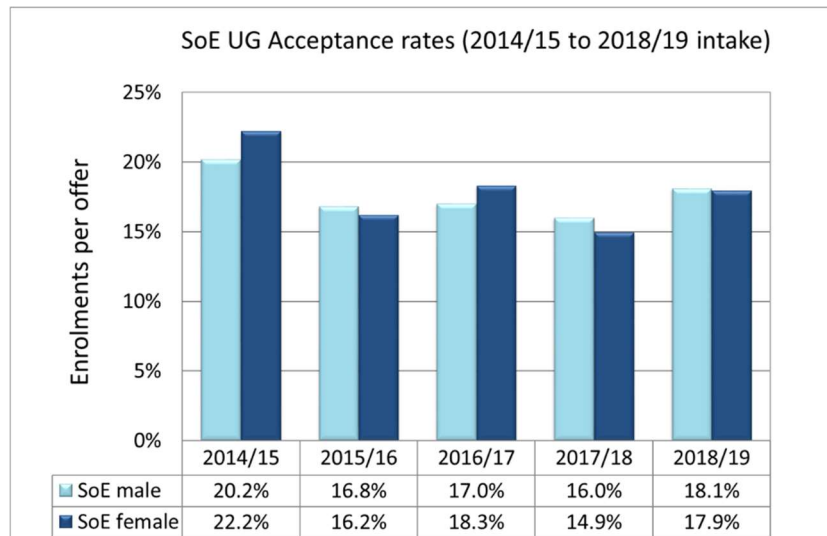


Females are slightly more likely than males to receive offers, but the difference is not significant.

**Figure 4.1\_ii\_c:** UG student offers by gender



**Figure 4.1\_ii\_d:** UG student acceptances, where conversion rates (Figure 4.1\_ii\_d) show slight fluctuations but there are no consistent significant differences by gender.



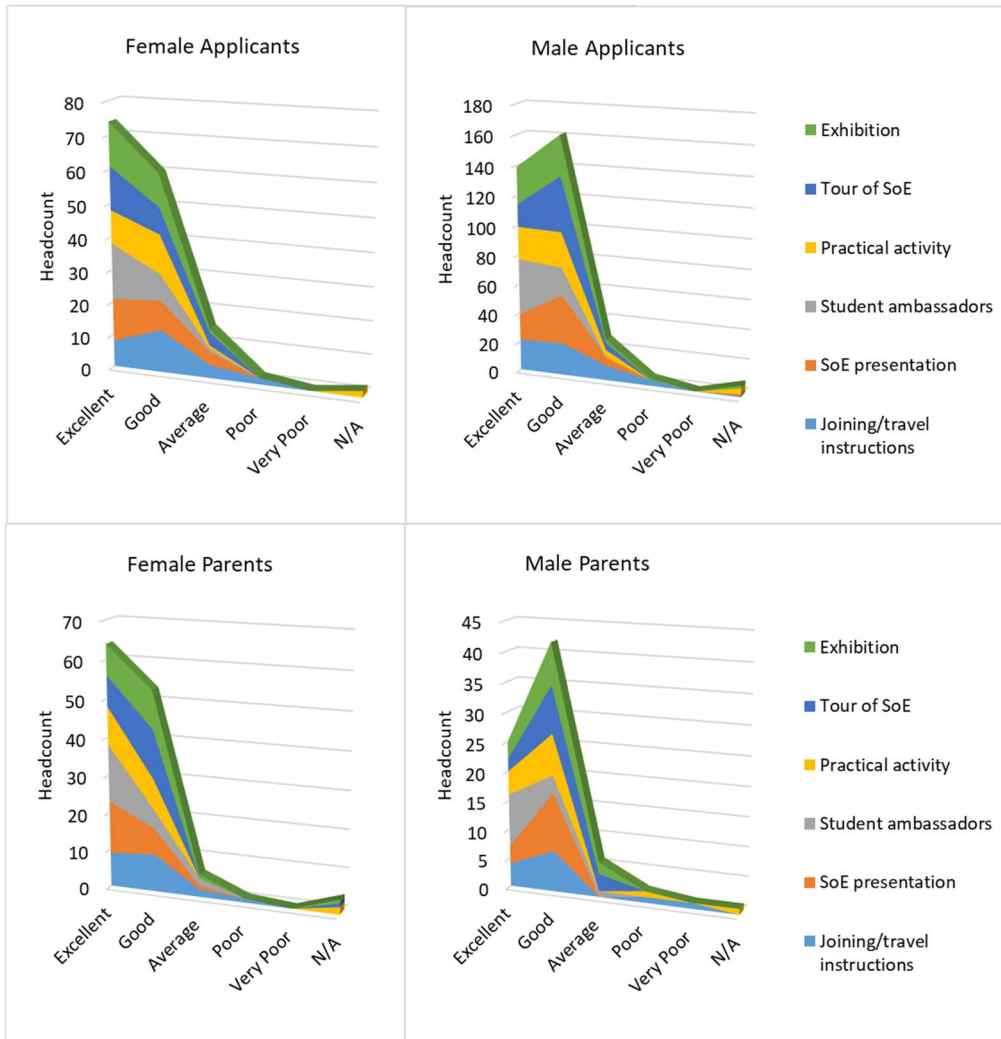
The increasing proportion of UG female students arises from increased applicant gender diversity. Qualitative/quantitative Offer Holder Day (**OHD**) feedback suggests this increase is supported by visibility of female staff and students in SoE:

Acceptor/Decliner Survey 2018: What one thing about the course you accepted at Warwick impressed you the most?

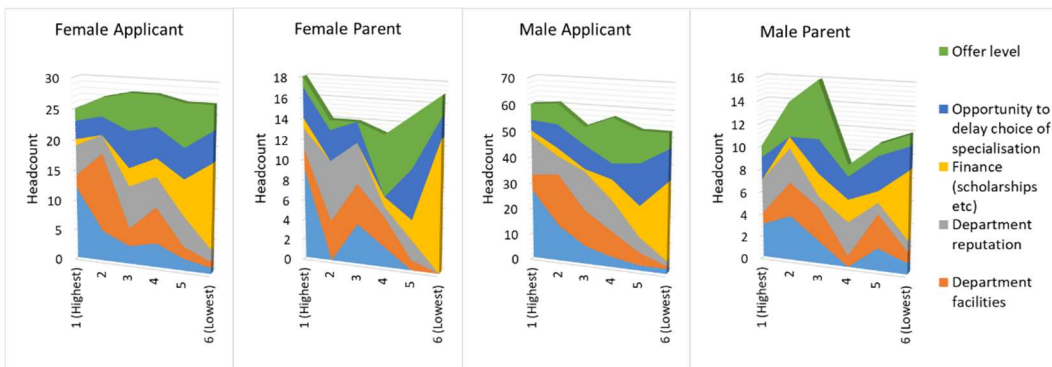
*“As a woman going into engineering, I loved how many women were at the open days to represent engineering. Warwick has the most equal gender split of any uni I looked at, which is really inspiring and sends out a great message. As a gender that’s constantly being told that engineering is just ‘not the path for us’ it really makes me super happy to see professional, well respected women in STEM subjects! Well done Warwick!”*

Advance timetabling and offering a choice of events (weekend/weekday) enables equal participation of all female and male staff in Open Days/OHD as part of allocated workload. OHD survey analysis shows SoE student ambassadors are the highest-ranked element of the day (**Figure 4.1\_ii\_e**); the Student Recruitment Officer (**SRO**) ensures the ambassador team represents gender diversity and the spectrum of engineering disciplines. Online presence (achieving gender diversity in our outward-facing SoE student case studies also affects applicant perceptions of SoE; the AS pages receive a high level of traffic from external IP addresses.

**Figure 4.1\_ii\_e:** Survey-reported experience of UG applicants and parents at OHD in SoE, 2018

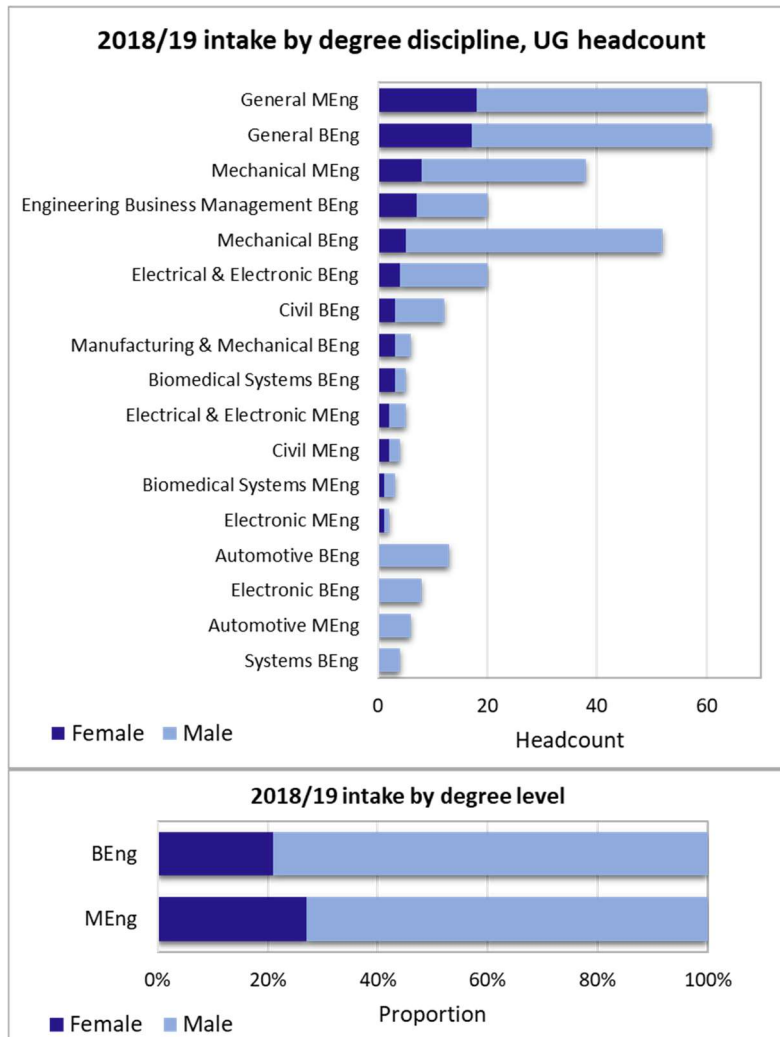


**Figure 4.1\_ii\_f:** Offer holder course priorities by gender, 2018, where course content, and opportunity to delay choice of specialization, is a slightly higher priority for females (applicants and parents) than males



When students indicate their intended degree discipline at enrolment, this reveals significant differences by gender (**Figure 4.1\_ii\_g**).

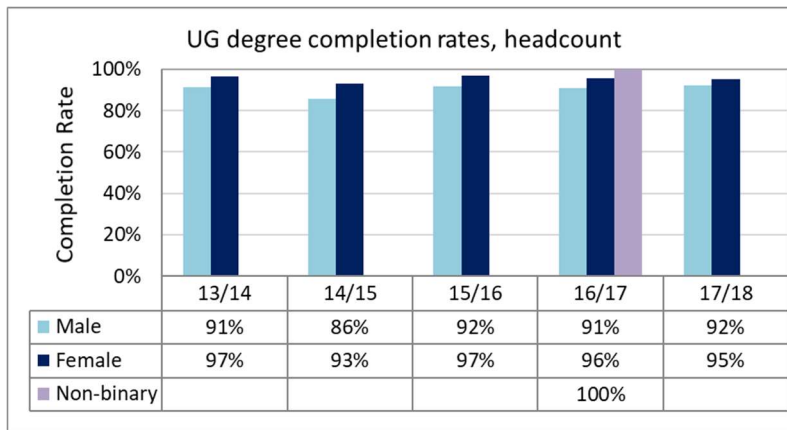
**Figure 4.1\_ii\_g:** 2018/19 intake by UG degree area and level, revealing differences in intended degree discipline and chosen route (MEng vs BEng) by gender.



We previously identified discipline-difference in diversity at PGT-level, and in **AP2015** we monitored gender diversity for humanitarian-related disciplines as our provision expanded driven by Acad-T appointee expertise.

**Figure 4.1\_ii\_g** reveals a higher proportion of female students chose the MEng route in 2018. This requires a higher entry tariff, and likely reflects the ambition of our female applicants, perhaps explaining why female UGs have higher completion rates (**Figure 4.1\_ii\_h**).

**Figure 4.1\_ii\_h:** UG completion rates by gender, 2014-2018



Attainment levels (**Figure 4.1\_ii\_i**) vary year-on-year; gender-specific differences (such as the spike in 1<sup>st</sup> class female performance in 2014/15) are not sustained, suggesting these arise from variations in cohort ability.

**Figure 4.1\_ii\_i:** UG degree attainment by gender, 2014-2018

*Figure removed in public domain version for anonymity due to low numbers in specific areas*

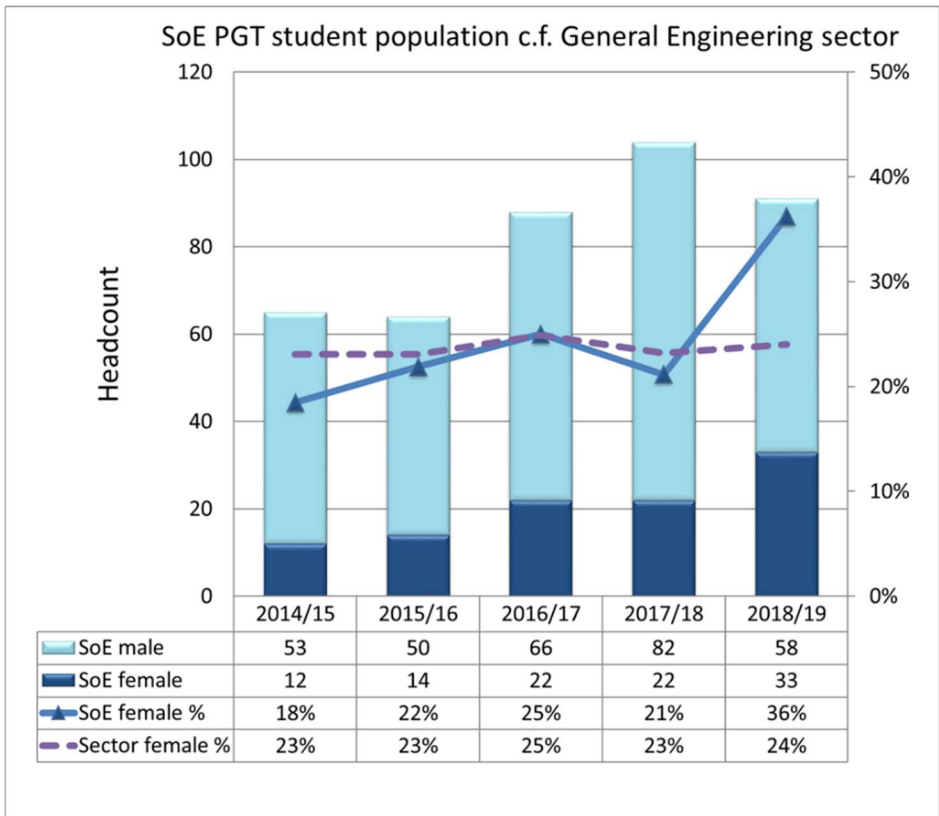
Except for individual/small-group face-to-face assessment, the majority of assessment is name/gender-blind. High-level data suggest UG attainment in SoE is not significantly influenced by gender; **AP2019** will enable granular exploration of Engineering-Discipline-specific factors and intersectional considerations.

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

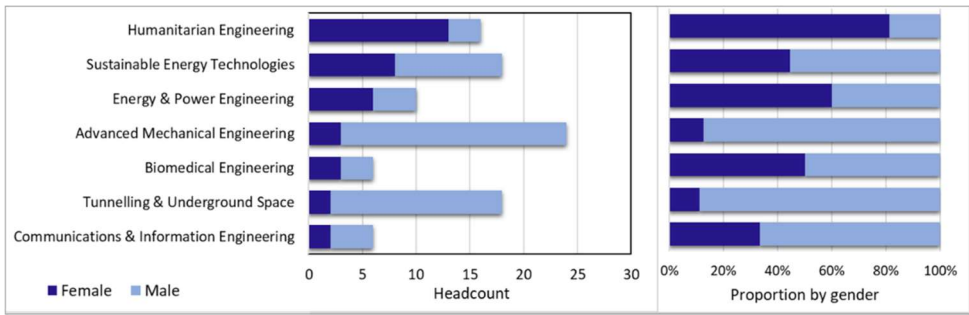
**IMPACT DELIVERED FROM AP2015**

PGT gender diversity has increased from 18% in 2014/15 to 36% female for the current cohort. The 2018 intake includes a new MSc in Humanitarian Engineering [13F:3M, **Figure\_4.1\_iii\_b**]. Excluding the new course, PGT gender diversity still shows an increasing trend, remaining above sector (27% SoE c.f. 24% sector).

**Figure 4.1\_iii\_a:** PGT student headcount (FT) 2014-2018

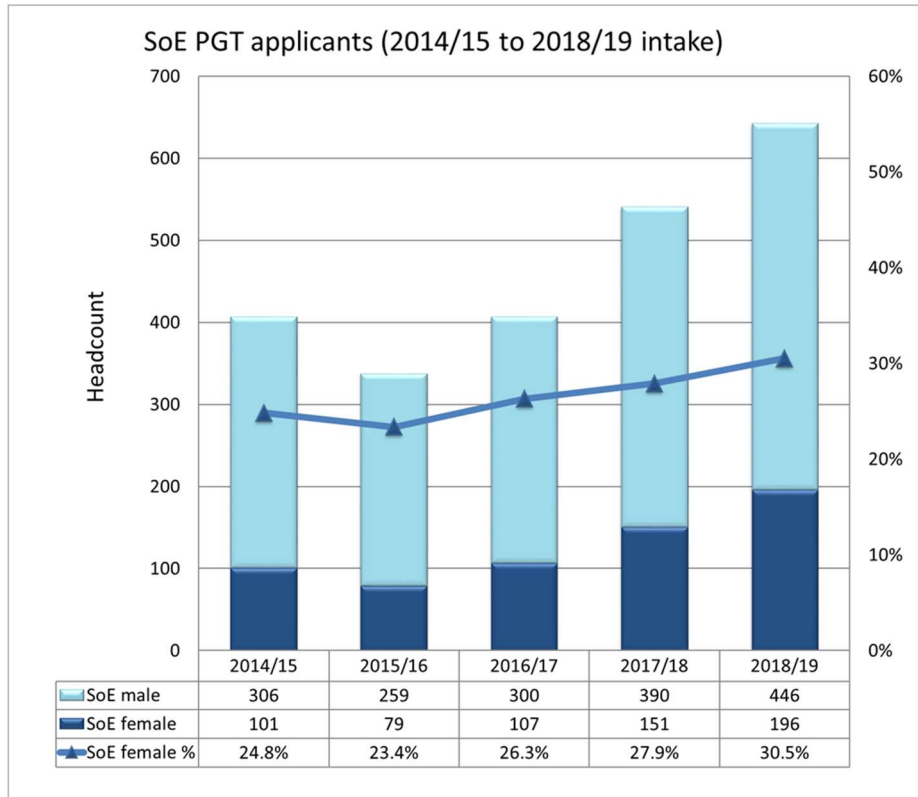


**Figure 4.1\_iii\_b** PGT student intake 2018/19 showing diversity by discipline



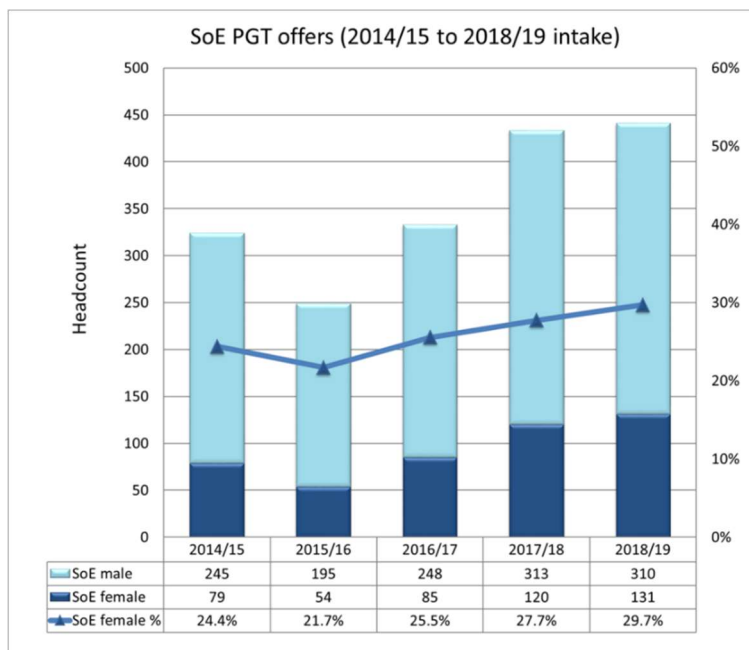
Recruitment up to 2017-18 (2018-19 intake) was as follows:

**Figure 4.1\_iii\_c:** PGT student applications by gender



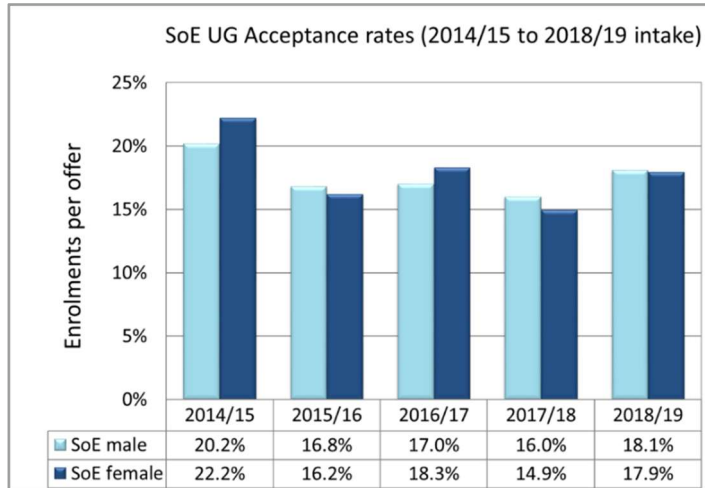
The increasing number of females receiving offers is proportionate with increased applicant gender diversity.

**Figure 4.1\_iii\_d:** PGT student offers by gender.

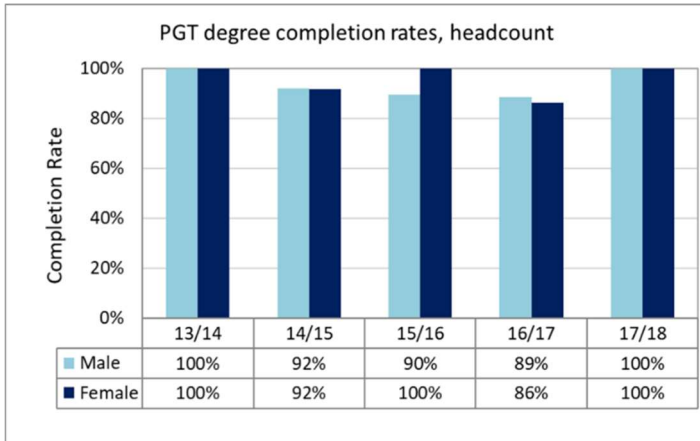


The increasing proportion of PGT female students arises from increased applicant gender diversity. The overall increase in headcount is expected in line with SoE strategy to expand PGT teaching. The SoE website and word-of-mouth are the main sources of influence for PGT applicants: international students would not typically attend an Open Day for a one-year course, while many UK students are SoE alumni.

**Figure 4.1\_iii\_e:** PGT student acceptances, where conversion rates show no sustained differences by gender.



**Figure 4.1\_iii\_f:** PGT completion rates by gender



**Figure 4.1\_iii\_g:** PGT degree attainment by gender, noting that PGT graduation occurs in the next academic year after the study year.

*Figure removed in public domain version to ensure anonymity due to low numbers in specific areas*

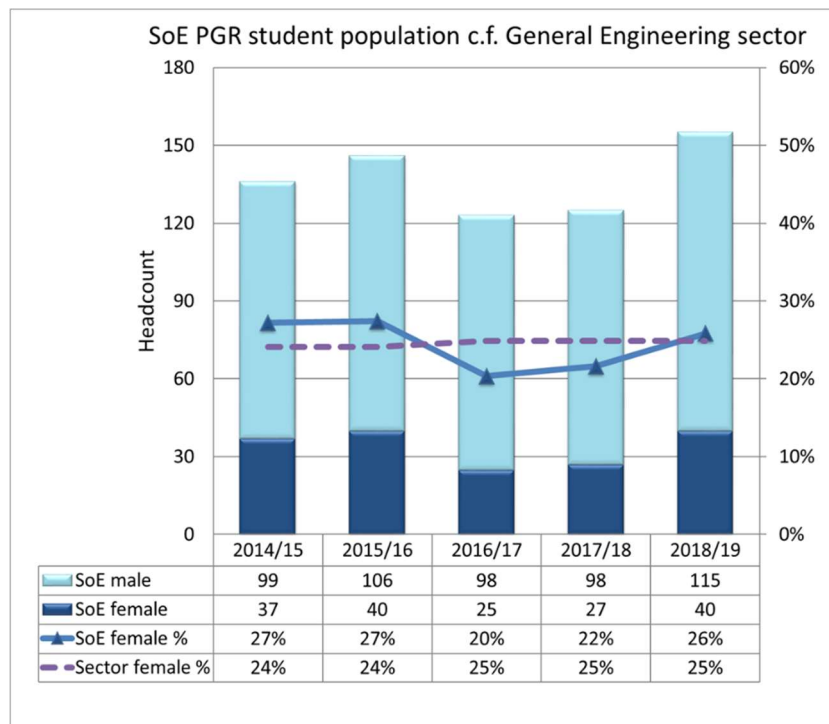


Year-on-year fluctuations in completion rates and degree attainment do not indicate any systematic difference by gender, and it is not viable to separate variations in cohort ability from impact of rolling revisions to the PGT courses through this period.

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

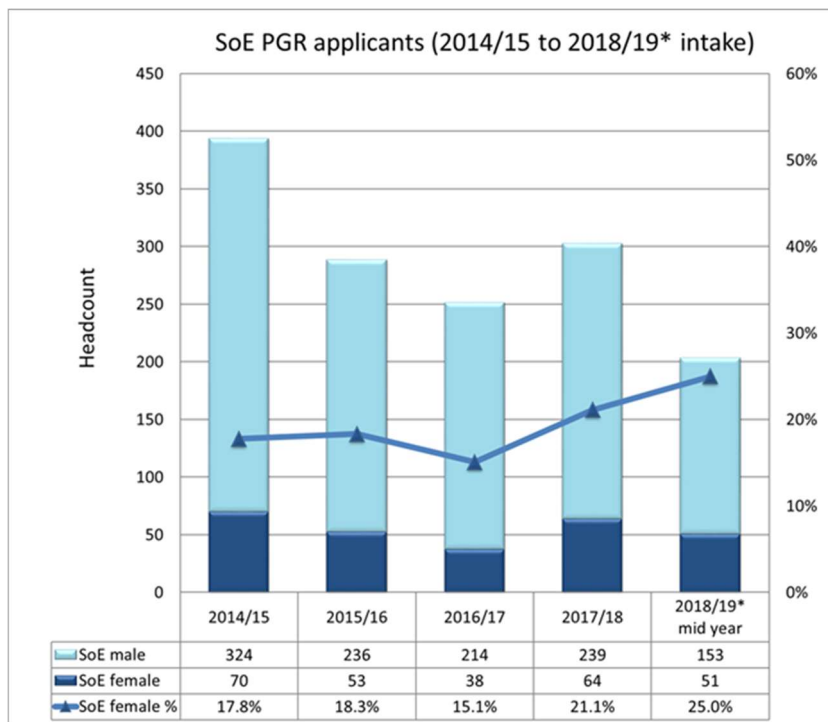
The PGR data in this section is aggregated for FT students taking PhD, MSc by Research, or EngD. The significant majority are PhD students. While female students are less likely to apply for the MSc/EngD routes (14% of applicants) they are more likely to accept offers (21% of enrolments).

**Figure 4.1\_iv\_a:** PGR student numbers (FT) 2014-2018

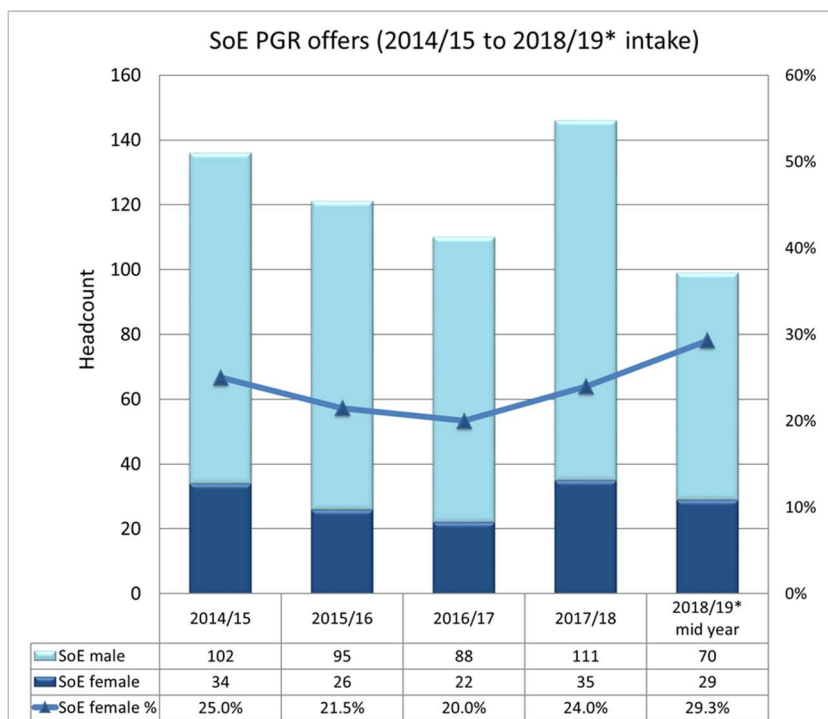


PGR gender diversity and headcount are increasing after a dip in 2016/17 that is most evident in application numbers (**Figure 4.1\_iv\_b**), arising from disruptions to the timeline for coordination of PhD funding with recruitment. Significant SoE-level support has followed, with information regularly shared at academic staff meetings, by email, and the SoE Newsletter to optimise coordination of funding opportunities, and helping individual supervisors support candidates apply for fellowships.

**Figure 4.1\_iv\_b:** PGR student applications by gender

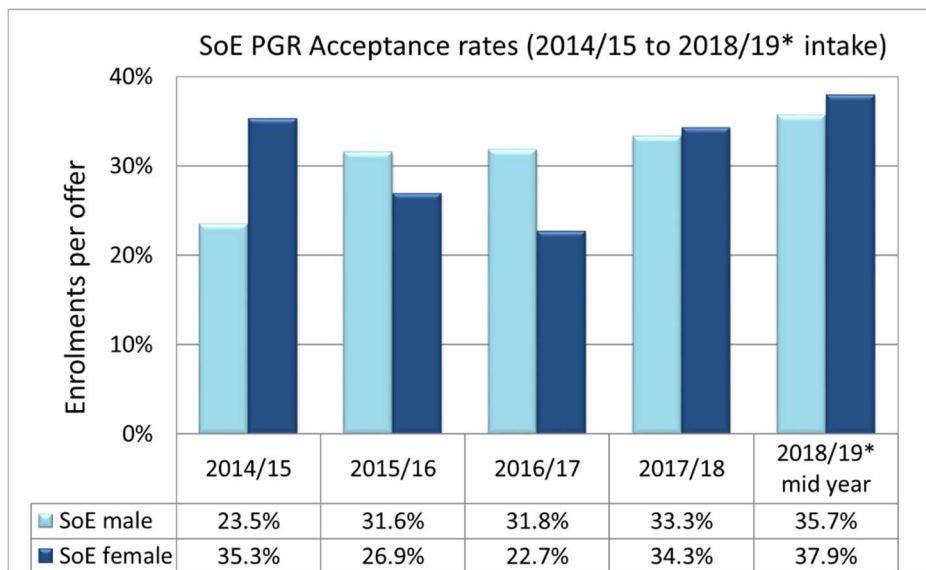


**Figure 4.1\_iv\_c:** PGR student offers by gender



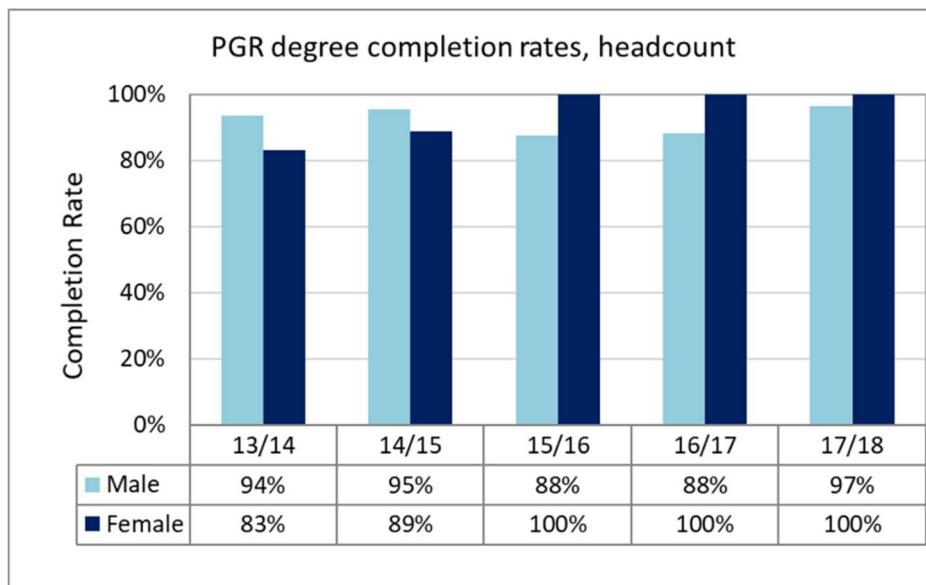
While 2018/19 acceptance data are mid-cycle (**Figure 4.1\_iv\_d**), they indicate that conversion rates are increasing. Entry criteria are strictly managed at Director of Graduate Studies (DGS) and Graduate School level, so the increased acceptance rates suggests SoE efforts to help supervisors align eligible PGR candidates with opportunities (funding, industry collaborators etc.) are proving successful.

**Figure 4.1\_iv\_d:** PGR student acceptances



For graduating PGR students, females have 100% completion rates since 2016 (**Figure 4.1\_iv\_e**); this may reflect the quality of monitoring and support that requests monthly input from student and supervisor(s), quarterly input from the PGR administrative team, and six-monthly/annual evaluation by each student’s Progress Panel.

**Figure 4.1\_iv\_e:** PGR completion rates by gender

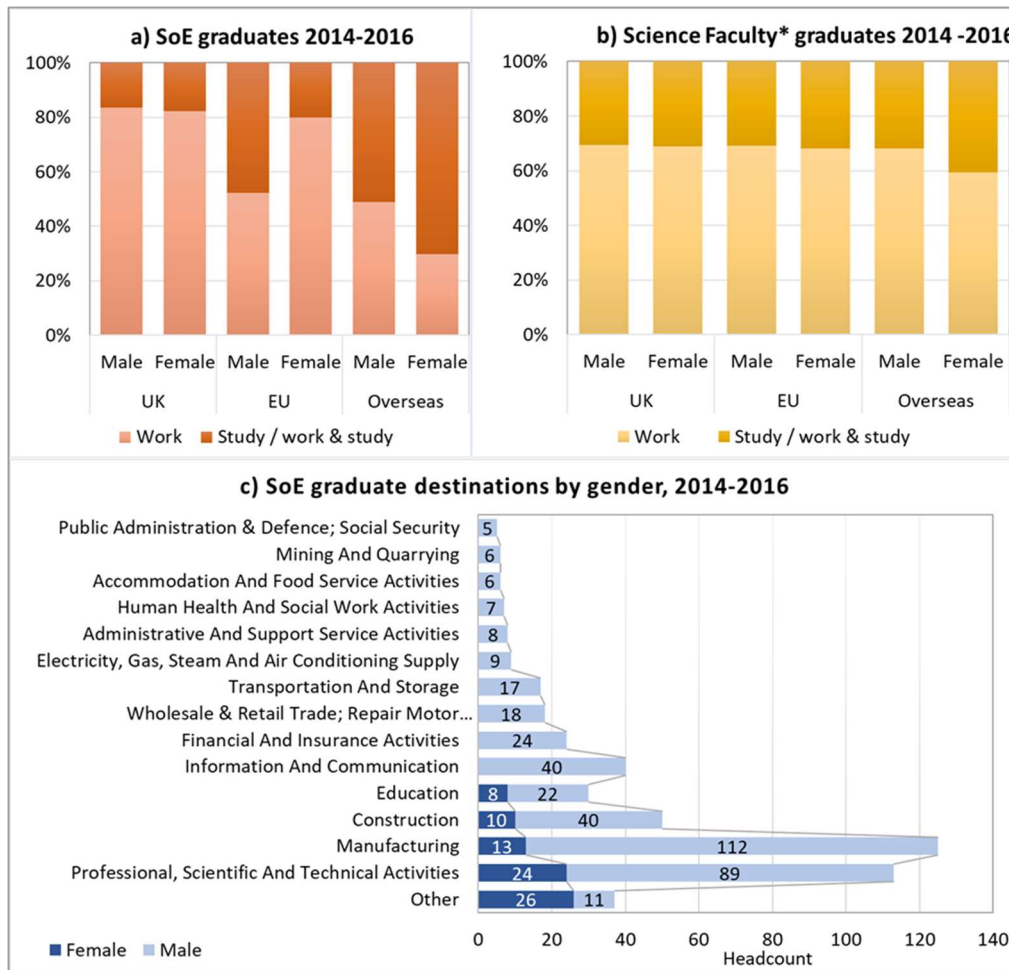


(v) Progression pipeline between undergraduate and postgraduate student levels

**Pipeline stage [UG→PG]:** SoE MEng and BEng graduates typically select further study (PGT/PGR), or graduate into industry/ employment. We support students into all three routes; prioritising equipping them for careers utilizing their STEM capabilities. Additionally, from 2018/19, SoE offers a strongly vocational route with the Civil and Infrastructure Engineering Degree Apprenticeship (CEDA), taught over five years via one-week block-release and using the UoW Virtual Learning Environment. The first CEDA

intake is 2F/7M (22% female), well above sector for apprenticeships [same-year SoE BEng-Civil=25%F, MEng-Civil=50%F].

**Figure 4.1\_v\_a:** Known destinations ([work], or [study/work & study]) for SoE and Science Faculty graduates 2014-2016, where students with known destinations, SoE overseas female graduates are more likely to be engaged in work and/or study (90.2%) than Science Faculty females (82.9%) (headcount analysis, data not shown). Further study is a minority option for Science Faculty overall, whereas SOE graduates are more likely to undertake further study (b) c.f. (c) with >50% overseas SoE graduates likely to continue studying, of these ~70% are female.



We accessed Graduate Employment Market Statistics (**GEMS**) data for graduate destinations aggregated 2014-2016 (**Figure 4.1\_v\_a**), comparing SoE with Science Faculty (\*subsequently Science and Medicine Faculty). The higher proportion of SoE graduates engaging in further study is likely because of higher-level professional qualifications associated with primary destinations indicated in **Figure 4.1\_v\_c**.

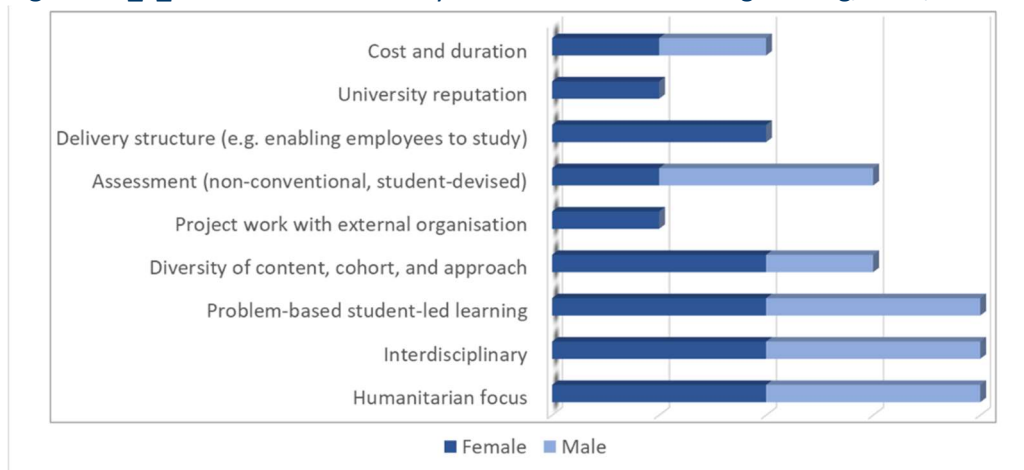
**Pipeline UG→PGT:** From **AS-2015**, we were aware of the sector-wide disparity in gender representation across the engineering sub-disciplines (**Figure 2\_d/Figure 4.1\_ii\_g**), reinforcing the former observation that our MSc Biomedical Engineering degree attracted the highest gender diversity. Our emerging hypothesis, that degrees with a clear humanitarian engineering purpose might be disproportionately of interest to female candidates, is supported by the demographic for the new MSc in Humanitarian

Engineering (13F/3M). We explored this further by asking all the students taking Humanitarian Engineering their motivation for selecting the course. Our initial hypothesis was that the topic, the humanitarian scope, would be the primary motivator. This mattered, a comment included:

*"The course opens pathways to helping people all around the world, and gives us a grounding to make a real difference."* **MSc student 2018-19**

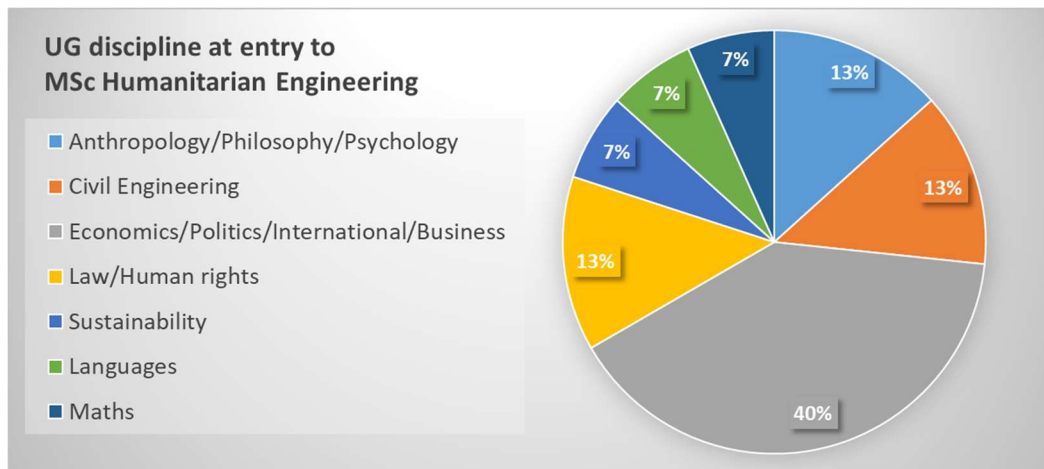
However, analysis of free text comments submitted by 50% of the cohort (summarized in **Figure 4.1\_v\_b**) suggests our initial assumption was simplistic. The modes of teaching, learning, assessment, and interdisciplinary content, ranked equally with the humanitarian aspect (**Figure 4.1\_v\_b**). This was irrespective of gender, and supports the importance of the current work led by our HoT, **new Assessment and Feedback Policy** to diversify and balance modes of learning and assessment across our taught degree programmes.

**Figure 4.1\_v\_b:** motivations to study MSc in Humanitarian Engineering, 2018/19 intake



Analysis of their entry qualifications and country of origin (**Figure 4.1\_v\_c**) indicated an important new input to the **[UG→PG]** pipeline.

**Figure 4.1\_v\_c:** UG entry qualification to MSc in Humanitarian Engineering



**Pipeline UG/PGT→PGR:** To encourage students into a research career, we launched an autumn term PhD Information Lunch for UG/PGT. If successful this should encourage strong internal competition for UoW/SoE scholarships schemes. Approximately 25 attended in 2018, with ~ 1/3 female participants, aligned with cohort gender diversity.

**Pipeline UG→Industry:** Our female graduates are successful in finding employment, and are ranked 5<sup>th</sup> securing above-average earnings in sector (**Table 4.1\_v\_a**).

**Table 4.1\_v\_a:** “Which university courses boost graduates' wages the most?” Guardian, <https://www.bbc.com/news/education-44413086> showing UoW SoE graduate earnings rank in Engineering Sector 2018: reported difference in earnings (+/- average) by subject and university for English students, five years after graduation

FEMALE	Institution	Difference
	Imperial	£14,064
	Nottingham	£12,515
	Southampton	£11,741
	Sheffield	£11,278
5th	Warwick	£10,993
	Durham	£10,338
	Northumbria	£9,351
	Cambridge	£9,205
	Loughborough	£9,140
	Bristol	£8,909
MALE	Institution	Difference
	Cambridge	£18,108
	Durham	£16,296
	Oxford	£15,791
	Imperial	£14,472
	UCL	£12,750
	Edinburgh	£12,294
	Bristol	£10,334
	Southampton	£10,322
	Lancaster	£9,817
	Bath	£8,964
	Liverpool	£8,180
	Surrey	£8,117
	Birmingham	£7,693
	KCL	£7,470
	Sheffield	£7,377
	Nottingham	£7,335
	Leeds Beckett	£7,152
18th	Warwick	£7,071
	Oxford Brookes	£6,268
	Loughborough	£6,223

Through our educational partnership with WES, SoE is:

- Raising UoW UG student awareness of, and engagement with, WES
- Strengthening UoW UG peer networks with WES student groups nationally
- Strengthening UG links with established professional engineers (e.g. at annual WES Student Conference).
- Sponsoring 5+ students annually to attend WES Student Conference since 2016
- Publishing feedback on SoE Athena pages to inspire future attendees
- Hosting WES Conference at Warwick for the first time in November 2018.
- Involving eight final-year female students in the WES Final Year Industry Mentoring Scheme (Jan-Dec 2019), evaluating how this influences graduate destinations and future retention across the UK-wide cohort.

We anticipate these activities will increase the chance of our UG students being retained in STEM careers, including opportunities to re-enter the sector after career breaks.



**Figure 4.1\_v\_d:** SoE Director of Studies Ian Tuersley with SoE UG 2<sup>nd</sup> year and WWES President Floriane Fidegnon-Edoh. Floriane originally became known to the SoE when we heard her speak on Woman's Hour (Sept. 2017) about her motivation to study engineering at Warwick; subsequently in her first year of the UG degree she gave the HEA STEM 2018 Keynote on 01-02-2018 about 'making it as a minority woman in STEM'.

[Section 4.1 word count = 1473]

#### FUTURE ACTION POINTS FOR AP2019

##### **AP-2019-2.e Gender is not a barrier to progression and development for students.**

- Continue to monitor UG degree performance by gender, and extend to PGT degrees.
- Targeted action plan to address any identified issues for student progression.
- Continue to promote and award Women in Engineering Scholarships and run joint events with the Multicultural Scholars programme (MSP), encouraging intersectional peer support.
- Bio-medical seminars presented by postdoctoral students were opened up to UG students in Oct 2018 with the aim of exposing students to the opportunity of PG study and the full career pathway. If this proves to be successful extend principal to other streams.
- Evaluate impact of WES Mentoring scheme implemented with final year female UG engineering students, to determine if this should be continued in future years.

##### **AP-2019-4.b Understand the priorities of prospective PGT and PGR students including E&D and funding concerns.**

- Promotion of PhD studentships through gender diverse social media.

- ii. Survey the attendees of the annual PhD information lunch for UG and PGT in order to determine how gender influences the choice to select the industry and/or research pathway.
- iii. Introduction of a new SoE scholarship to fund up to four PhD students per year. Diversity of scholarship holders will be monitored.
- iv. A revised approach to University wide PhD scholarships competitions, providing support for supervisors in preparing statement.
- v. Promotion of PhDs worldwide through SoE international representatives.
- vi. Introduction of two new PGT scholarships providing Alumni discount to all eligible students who progress onto one of the SoE MSc degrees and 20 scholarships of £1000 to students commencing PGT study in 2019. Diversity of scholarship holders to be monitored.
- vii. Hold a 'Realities of work-life balance in academic careers' event in October 2019 and annually thereafter for PGT/PGR students who are concerned about managing academic careers and family life.

**AP-2019-4.c Understand the priorities of prospective UG students including their perspectives on E&D at Warwick.**

- i. Continue and develop surveys of potential applicants and offer holders.
- ii. Monitor impact of outreach courses and identify any gender-specific issues.
- iii. Better understanding of impact and value of outreach courses and targeted actions if appropriate to increase the proportion of female students.
- iv. Better understanding of views of prospective students, addressing any issues as appropriate.

**AP-2019-4.d Understand and address evidence of gender bias within degree courses.**

- i. Consult with current students on degree content and gender bias
- ii. Upon completion of the new Assessment and Feedback policy, EDCW will monitor any revisions made and whether they differentially affect students by gender and other protected characteristics.
- iii. Consult with external examiners on whether there is any evidence in gender bias within degree courses.

**AP-2019-4.e Unconscious bias training integrated into Student Skills (UG, PGT, PGR, outreach).**

- i. Continue to deliver UB training through the mandatory 1st year module, ES101.
- ii. Ensure that all new and continuing PGR students receive UB training.
- iii. Continue to embed UB training in Outreach activities, i.e. SmallPeice/Inspire.

**AP-2019-4.f Understand how and when students select their final degree route after joining Warwick.**

- i. Qualitative understanding of impact of role models.
- ii. Quantified comparison of exit with entry route (proportions across degree routes) for 2019/20 UG cohort.



## 4.2. Academic and research staff data

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

### IMPACT DELIVERED FROM ACTION PLAN 2015

The increased gender diversity in our staff cohort is evidenced through **Section 4.2**

**Objective:** Gender is not perceived as a barrier to applications for employment in SoE, or to subsequent progression.

**Approach:** SoE Athena website promotion in advertisements/recruitment literature; consulting with SoE members and external partners on potential barriers to female applicants and progression.

#### **Success Measure**

→ Female staff headcount increased in all categories, and applicants for posts increased ~50% (equally for females and males) when advertisements were included in the WES portal.

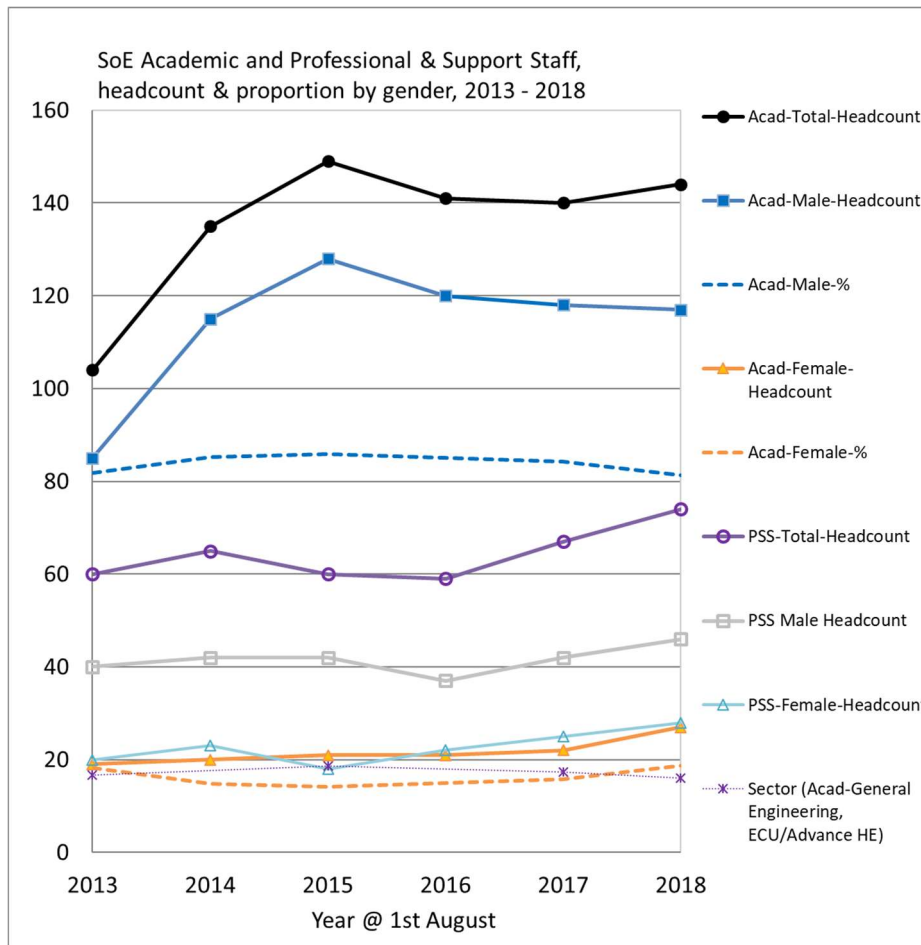
Addressing the two greatest pipeline concerns:

→ Proportion of Acad-FA6 females increased from F:M=0.14 (2015) to 0.28 (2018) via retention & recruitment.

→ Proportion of Acad-FA8 females at Reader level increased from 0% in 2015 to 40% in 2018 by internal promotion.

→ **AS2015** revealed a sharply declining PSS:Academic staff ratio 2013-2015, explaining increased operational pressure on SoE staff. This underpinned a case from SoE to UoW management for additional PSS (**Figure 4.2\_i\_a**). This increased PSS headcount (also gender diversity) since 2016, quantified in **Table 4.2\_i\_b** underpinned improved staff workload and wellbeing, particularly in timetabling and flexible working. Part-time working is now normal in all staff roles: **Table 4.2\_i\_c** & **[Section 6 Case Study 2]**.

**Figure 4.2\_i\_a:** Overview of SoE staffing by headcount and proportion c.f. sector



Academic staff headcount by grade is shown in **Table 4.2\_i\_a**, with the growth in female staff numbers illustrated in **Figure 4.3\_i\_b**.

**Table 4.2\_i\_a:** Academic staff headcount by gender and grade 2014-2018 (census 01.08.18)

*Table removed in public domain version to ensure anonymity due to low numbers in some areas*

Gender diversity in the specialist Acad-T/R routes (rather than Acad-T&R) is increasing [**Table 4.2\_i\_b**]; these routes are more attractive now progression to FA9 via all three routes is demonstrably achievable in the UoW promotion system. **AS2015** was critical to highlight pipeline constraints at FA6 (early-career, typically FTC), lack of progression for female Acad-T&R-FA8, and low female headcount at FA9. The breakdown by grade for a) female and b) male academic staff is shown in **Figure 4.2\_i\_b** where there has been a rise at FA6 to match sector [2018 F:M=0.28]. The apparent decrease in Acad-T&R-FA8 females arises from their promotion to Acad-T&R-Reader from 2016 [2018 F:M=0.38].

**Table 4.2\_i\_b:** Academic staff roles (with PSS for comparison) by gender, headcount and proportion

Headcount	All Academic			Acad-T&R			Acad-R			Acad-T			All PSS			PSS-Tech			PSS-Admin		
	M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F	M	F	% F
2014	115	20	15%	53	11	17%	55	8	13%	7	1	13%	42	23	35%	34	1	3%	8	22	73%
2015	128	21	14%	58	11	16%	62	9	13%	8	1	11%	42	18	30%	32	1	3%	10	17	63%
2016	120	21	15%	56	10	15%	57	9	14%	7	2	22%	37	22	37%	30	1	3%	7	21	75%
2017	118	22	16%	55	10	15%	51	8	14%	12	4	25%	42	25	37%	35	1	3%	7	24	77%
2018	117	27	19%	57	9	14%	51	13	20%	9	5	36%	46	28	38%	37	2	5%	9	26	74%

**Figure 4.2\_i\_b:** Academic staff headcount by gender and grade, 2014-2018

*Figure removed in public domain version to ensure anonymity due to low numbers in some areas*

**Table 4.2\_i\_c:** Headcount and function by gender for PT staff 2014-2018.

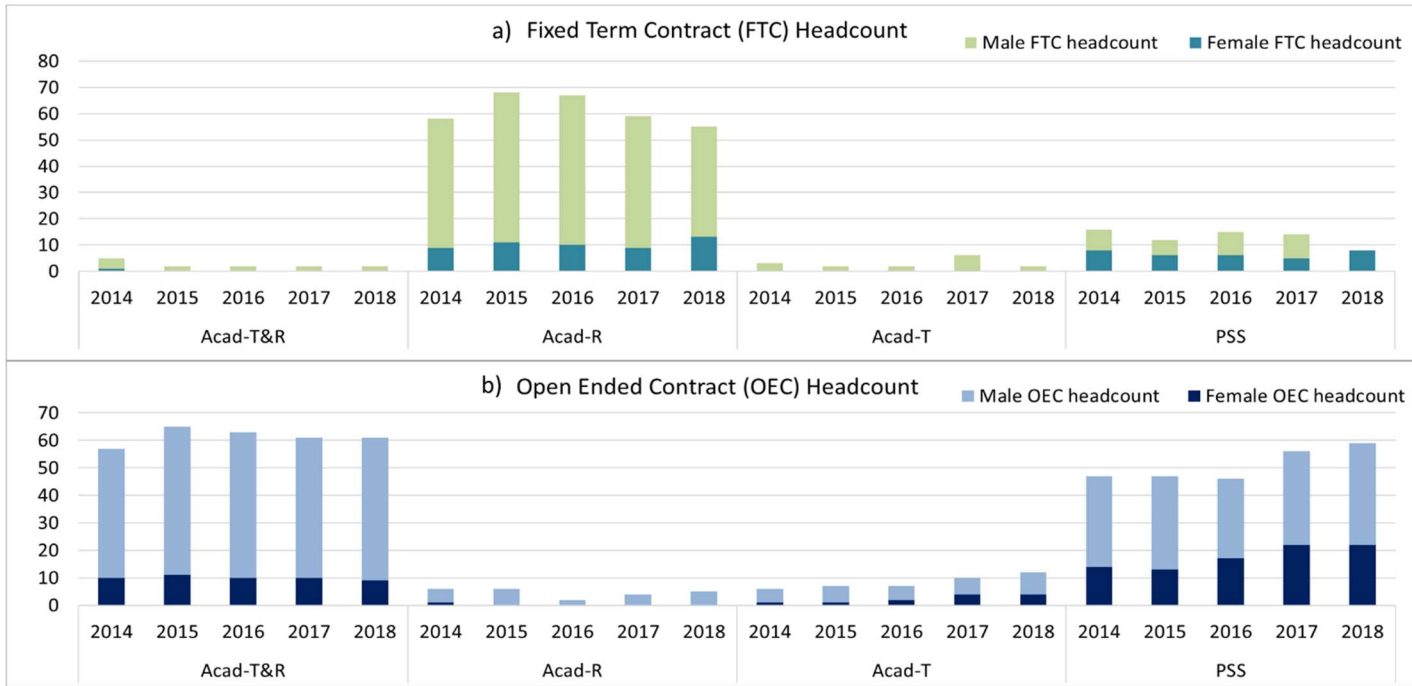
Headcount	All Academic Staff				All PSS			
	M	F	M	F	M	F	M	F
2014	9	3	75%	25%	3	5	38%	63%
2015	11	4	69%	27%	3	6	33%	67%
2016	13	2	81%	13%	2	8	20%	80%
2017	14	4	78%	22%	4	11	27%	73%
2018	15	4	74%	21%	2	11	17%	83%
Total	62	17	75%	22%	14	41	27%	73%

The majority of staff are FT, but PT working is established across all staff roles and grades. For academic staff PT uptake by gender is proportionate, but PSS shows a disproportionate increase in PT female headcount, possibly enabled by increased PSS resource (coupled with recruitment emphasising PT options) from 2015 (**Figure 4.2\_i\_a**).

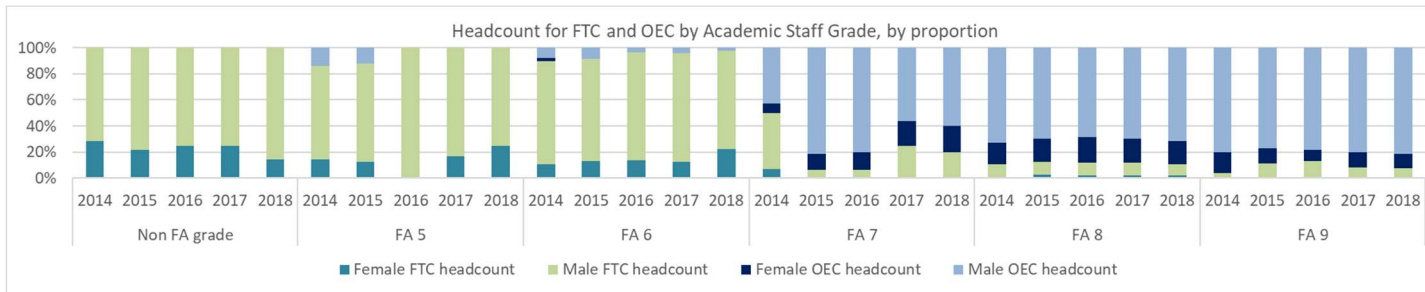
(ii) Academic and research staff by grade on fixed-term, open-ended/permanent and zero-hour contracts by gender

The majority of academic staff are on open-ended contracts, and zero-hour contracts are not used in SoE. FTC primarily arise for externally-funded posts, primarily ECRs (FA5-FA6) (**Figure 4.2\_ii\_a**). There is no obvious gender discrepancy by academic grade in use of FTC (**Figure 4.2\_ii\_b**), and **Section 5.3** outlines SoE career support mechanisms for all categories of FTC staff.

**Figure 4.2\_ii\_a:** Academic staff headcount by role and gender, alongside PSS for reference, a) FTC, b) OEC.

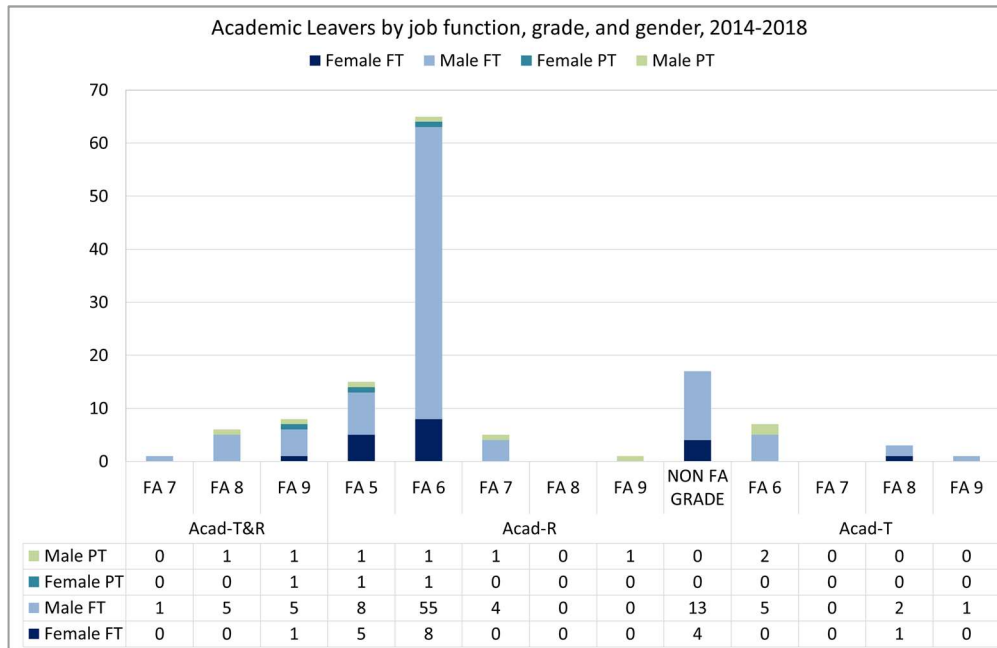


**Figure 4.2\_ii\_b:** Academic staff headcount shown as proportion by grade and gender for FTC and OEC.



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

**Figure 4.2\_iii\_a:** Academic leavers by function and FT/PT status 2014-2018

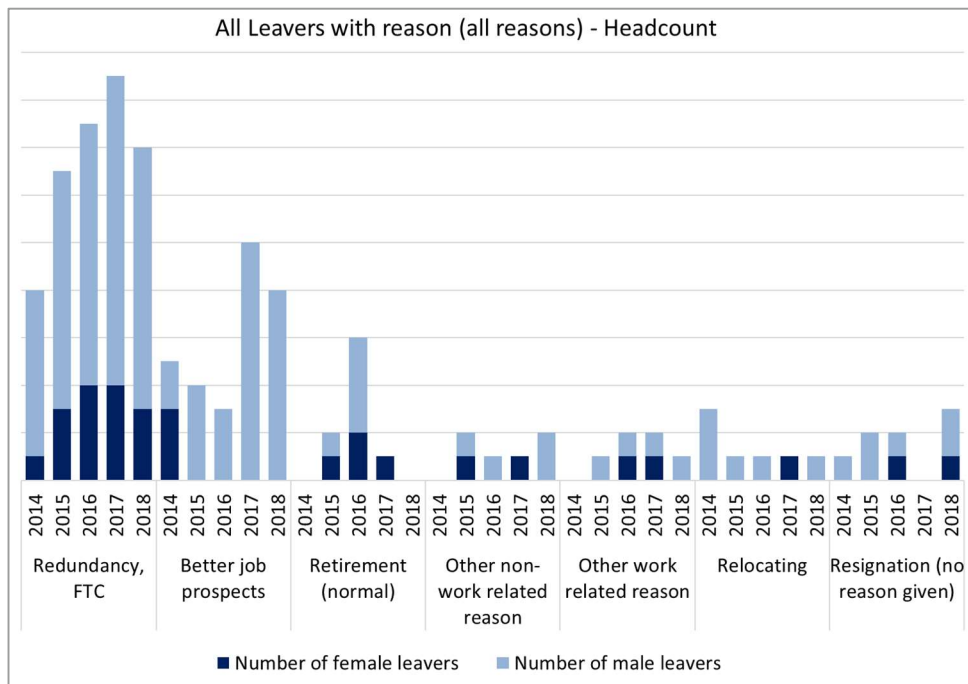


Turnover for academic posts is shown in **Figure 4.2\_iii\_a**. In the sector ([AdvanceHE\\_2018\\_Report\\_Section\\_4.22](#)) female academic staff are more likely to leave (Sector 17.7% F vs 16.1% M). Conversely, SoE female academic staff are less likely to leave (SoE 14.8% F vs 21.4% M). Reasons for leaving are summarized in **Figure 4.2\_iii\_b**; central HR records known reasons, including leaver-volunteered reasons invited at exit interview.

Analysis by grade confirms the data are dominated by externally-funded Acad-R FTC (FA5/6/non-FA), with 30-50% turnover. Within this group female turnover was disproportionately low, indicating female staff in longer-duration contracts than males. Whether this is because male staff might leave before a contract completes (Leaver Reason “Better job prospects” accounted for 15 M and 0 F at FA6, 2014-2018), or whether ECR females are more successful than males in securing longer contracts, will be evaluated in **AP2019**.

Acad-FA7-9 turnover is much lower at ~ 5%, with staff typically leaving to take external academic appointments

**Figure 4.2\_iii\_b:** Leavers by reason over the period 2014-2018, headcount



[Section 4.2 word count = 633]

#### FUTURE ACTION POINTS 2019

##### AP-2019- 4.a Gender is not perceived as a barrier to applications for employment in Engineering at Warwick, increasing the proportion of female applications

- i. SoE to fund nursery places at the University nursery for applicants attending interviews. Information will be displayed on all job advertisements
- ii. Continue to advertise via the Women’s Engineering society in addition to the usual channels in order to test whether initial indications that it increases the number and diversity of applicants, prioritising FA9 appointments
- iii. Trial a ‘Returners’ Fellowship at post doctoral level who have had a career break Modelled on Daphne Jackson Trust scheme, with structured support and mentoring to realise the potential of returners
- iv. Screen gendered advertising for posts and in our online materials. Trial with the support of GTF, language analysis tools, screening for gendered language prior to advertising.

## 5. SUPPORTING AND ADVANCING WOMEN'S CAREERS

### 5.1. Key career transition points: academic staff

#### (i) Recruitment

##### IMPACT DELIVERED FROM AP2015

**Objective:** Gender is not perceived as a barrier to applications for employment in Engineering at Warwick, increasing the proportion of female applicants.

**Approach:**

From May 2016, SoE advertisements include statements to encourage applicants for PT/flexible working, prioritization of gender equality, and a criterion for collegiality.

SoE Educational Partnership with WES (from 11/2017) enabled advertising of 4 SoE posts/year on the WES recruitment website

**Success measure:**

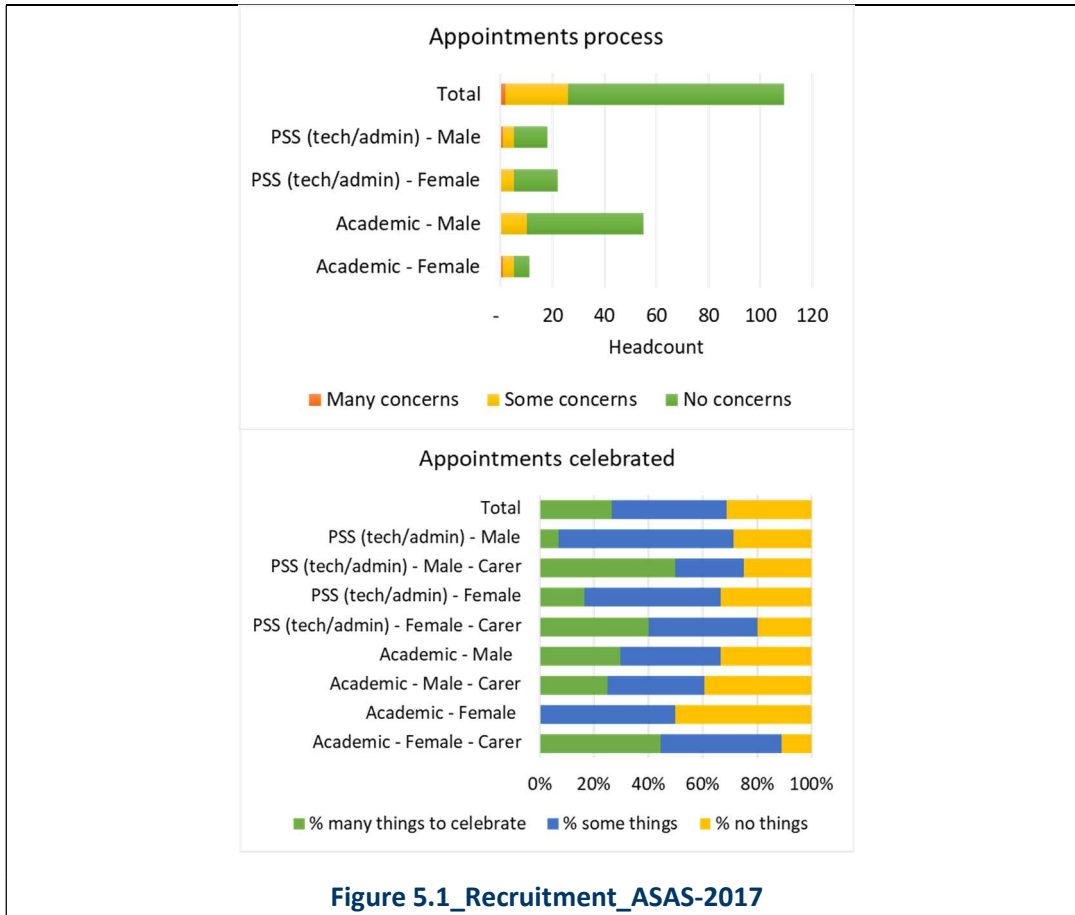
Increased academic staff gender diversity, especially females recruited to FA6 [F:M=0.14 (2015) to 0.28 (2018) matching sector]

Female applicant headcount doubled on average for WES-advertised posts.

In ASAS-2017-Survey, we asked SoE staff if they had concerns about the appointment process (**Figure 5.1\_Recruitment\_ASAS-2017**). The majority did not; proportionally, academic female carers had the highest level of concern, but were also most likely to identify things to celebrate about our processes:

*"Concern? Too few women and minority ethnic employments. Celebrate? Better than it's ever been. Increased awareness of the issue."* [Academic Female]





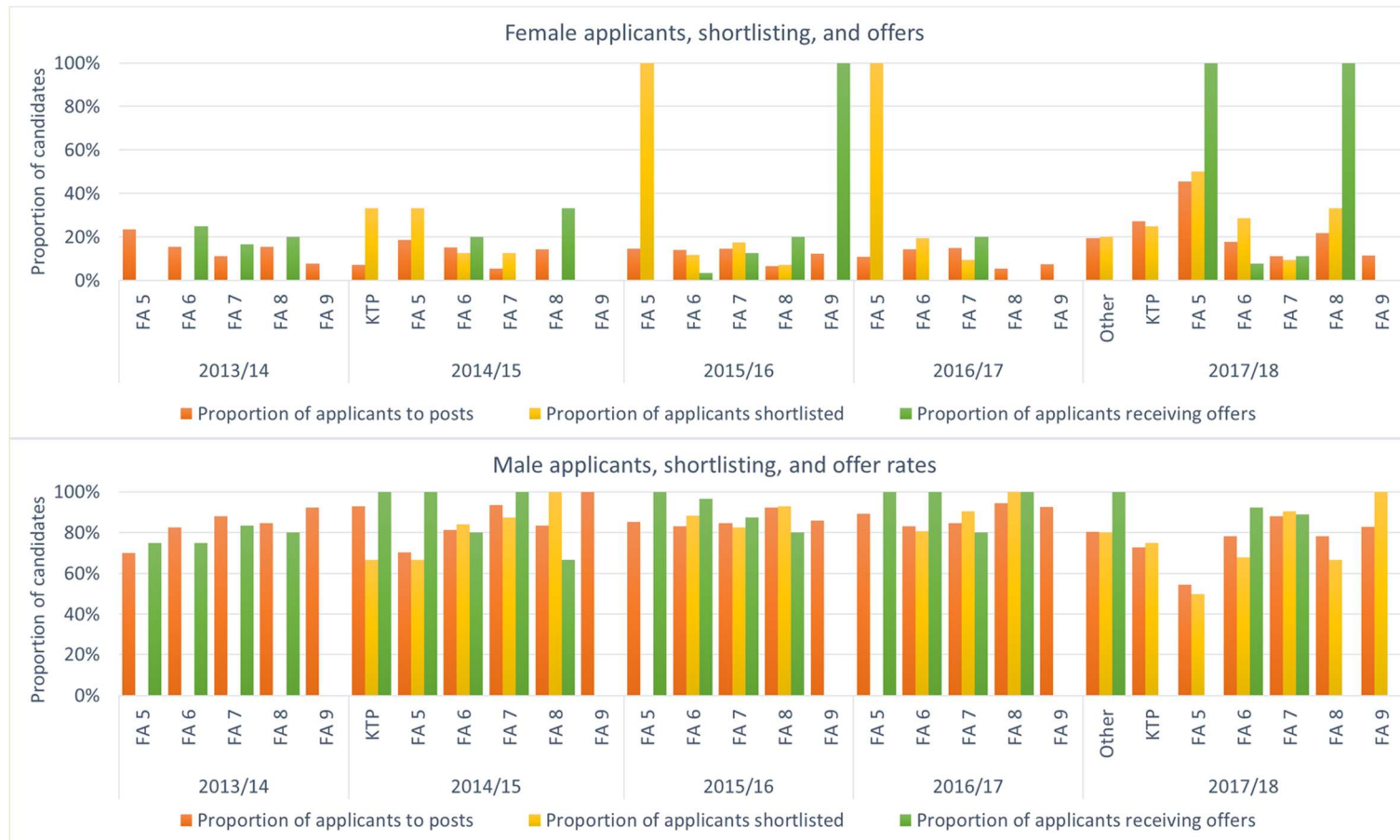
Academic staff recruitment to 2017/18 is shown in **Table 5.1\_i\_a**. **Figure 5.1\_a** shows shortlisting and offer rates by gender are proportionate to the number of applicants, supporting the evidence in **Table 5.1\_i\_a** for a trend towards increased numbers of female applicants to academic staff posts.

The success rates of candidates in being invited to interview and receiving offers, indicates that SoE attracts a high calibre of female candidates (**Table 5.1\_i\_b**); factors for male candidates are closer to 1 (= the proportion being shortlisted or successful at interview is the same as the applicant proportion). While these data might indicate above-average success rates for female candidates, the success rates vary at individual grades and the numbers for female applicants are below the threshold for robust statistical analysis: it remains a priority to increase candidate numbers.

**Table 5.1\_i\_a** Academic staff recruitment 2013/15 to 2017/18, showing number of applicants, shortlisted applicants, and offers by year, grade, and gender. Shortlisting data for 2013/14 are omitted as a revised rigorous record-keeping process was available from 2014/15 onwards.

*Table removed in public domain version to ensure anonymity due to low numbers in some areas*

**Figure 5.1\_i\_a** Applications, shortlisting, and offer rates for academic points by grade and gender 2014-18.

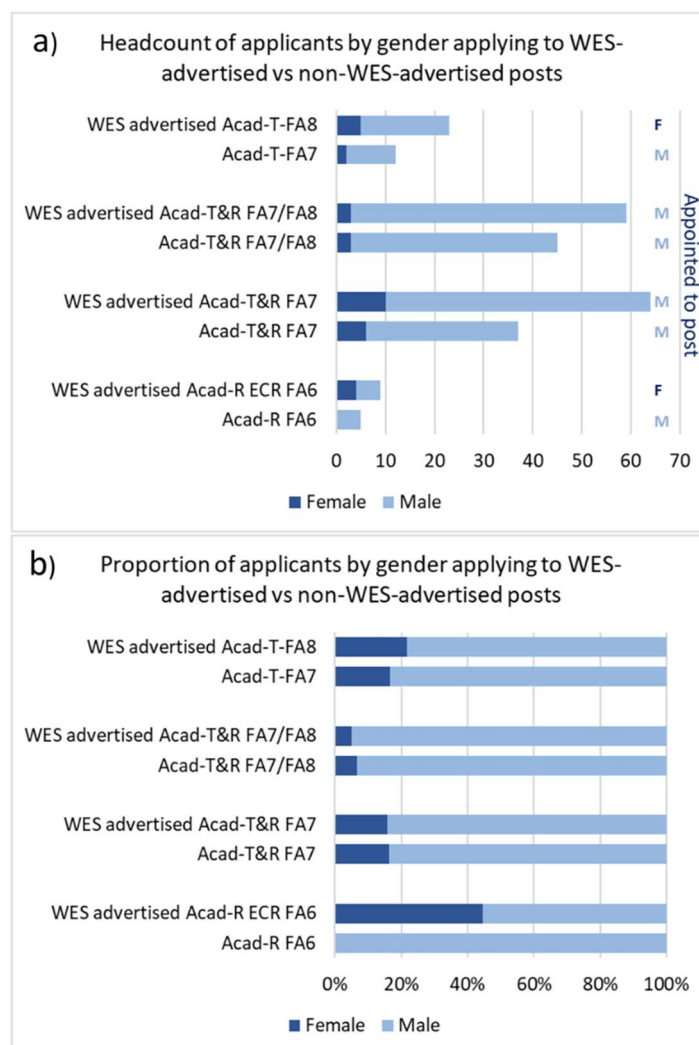


**Table 5.1\_i\_b** Success rates of candidates by gender as ratios of [proportion shortlisted/proportion of applicants] and [proportion receiving offers/proportion of applicants], where >1 indicates elevated success rate.

	Female shortlisting success rate	Male shortlisting success rate	Female interview success	Male interview success rate
2014/15	1.9	1.0	0.7	1.1
2015/16	2.0	0.8	2.5	0.8
2016/17	2.8	0.8	0.3	1.1
2017/18	1.2	0.9	1.6	0.7

SoE has trialled advertising Acad-T&R/T/R posts via the WES recruitment website, the results of this trial can be seen below in **Figure 5.1\_i\_b**. Similar posts (grade, remit) are paired for purpose of comparison, and the outcome for each appointment is indicated by gender.

**Figure 5.1\_i\_b** Influence on gender diversity of advertising academic posts in the WES portal 2017-18



This experiment showed preliminary evidence that the WES advertising increased applicant number and gender diversity. The proportion of female applicants was almost identical for the WES-advertised posts (14%) versus non-WES-advertised (13%); numbers of applicants overall increased ~50%, and females were appointed to two of the four posts advertised.

The increased applications arising from WES advertising was well-received by SMC resulting in requests from senior male staff to ensure posts that historically attracted low numbers (certain specialities and/or FA9) is advertised this way in future.

At UoW, it is mandatory for all Chairs of Recruitment Panels to receive training on ED&I, and UB, and all members of staff involved in recruitment are encouraged to undertake 'Diversity in the Workplace' as a precursor to the 'Recruitment and Selection' module and 'UB' training on our UoW Moodle platform.

A 'How to Guide' has been created to assist panel chairs in creating the right panel composition and ensuring fair selection methods are used throughout the process. As part of the Chair's Recruitment training, Chairs are responsible for ensuring recruitment panel compositions are diverse, with the appropriate gender balance and required skills. This is documented for panel chairs, recruiting departments and panel members in various formats including checklists as prompts. Panellists refresh mandatory training every 3 years.

In conjunction with UoW Recruitment Policy, SoE has an HR Admin Team (**HR-AT**) advising on process, policy and training requirements. **HR-AT** police diversity of panels and where it is not possible to have a female panel member from SoE, a request is made to the SAO who approves the panel before it proceeds, a typical solution is for the external panel member to be female from another STEM department.

#### FUTURE ACTION POINTS 2019

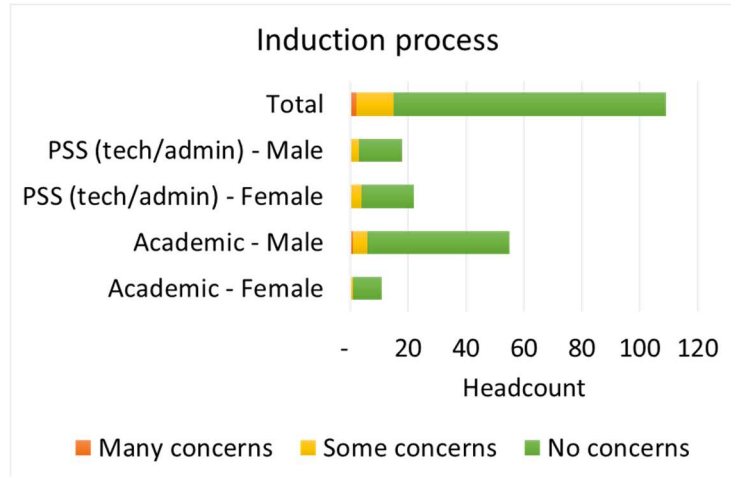
**AP-2019-4.a Gender is not perceived as a barrier to applications for employment in Engineering at Warwick, increasing the proportion of female applicants for academic posts.**

- i. SoE to fund nursery places at the University nursery for applicants attending interviews. Information will be displayed on all job advertisements.
- ii. Continue to advertise via the Women's Engineering Society in addition to the usual channels in order to test whether initial indications that it increases the number and diversity of applicants, prioritising FA9 appointments.
- iii. Trial a 'Returners' Fellowship, to support staff at postdoctoral level who have had a career break. Modelled on Daphne Jackson Trust scheme, with structured support and mentoring to realise the potential of returners.
- iv. Screen gendered advertising for posts and in our online materials. Trial with the support of GTF, language analysis tools, screening all job advertisements for gendered language prior to advertising.

(ii) Induction

**IMPACT DELIVERED FROM AP2015**

The ASAS-2017-Survey showed that the significant majority of academics have no concerns about induction.



**Figure 5.1\_Induction\_ASAS-2017**

SoE staff share a common induction programme [see **Section 5.2\_i**] tailored to individual roles – this determines who the individual meets and the additional information they receive. Examples relevant to academic staff roles include:

University systems (Tabula, SITS, Moodle, Concur, IDEATE) required for managing teaching duties, research administration, finance etc.

Laboratory-based academic staff have a more in-depth Health and Safety (**H&S**) induction than non-lab-based, appropriate to role support.

**FUTURE ACTION POINTS 2019**

**AP-2019-7.f Host termly lunches for new members of staff.**

- i. To trial the first lunch for new members of staff. To have members of SMT in attendance and representatives from different teams/streams to assist new staff in becoming familiar with different roles within the SoE and encourage networking.

**AP-2019-7.g Introduce an online evaluation form for New Starters on the SoE Induction process.**

- ii. Creation of an online form to be sent to new starters three months post start date

(iii) Promotion

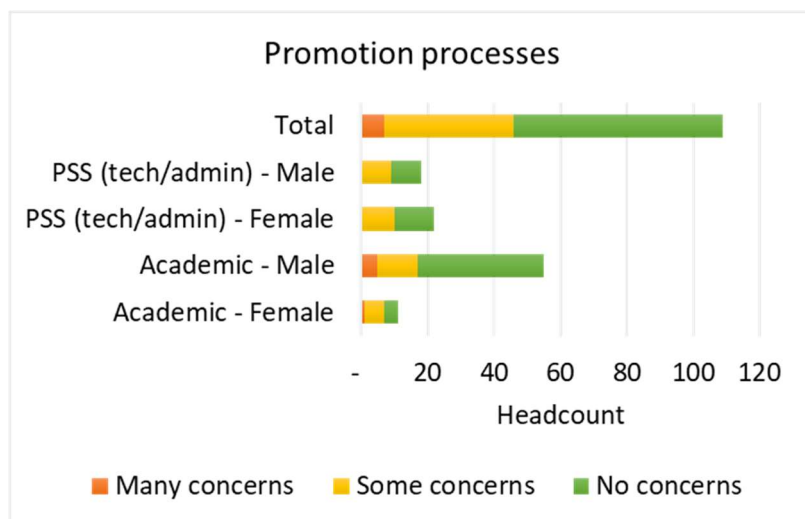
**IMPACT DELIVERED FROM AP2015**

In 2014/15 no SoE female Acad-FA8 were Readers or being promoted to FA9 internally.

In PULSE-2016 only **22%** of SoE staff considered the UoW promotions process fair.

In ASAS-2017-Survey, we asked SoE staff if they had concerns about promotion.

Concerns were widespread:



**Figure 5.1\_Promotion\_ASAS-2017**

Six months later, UoW announced significant reforms to the academic promotions process. The consultation received feedback from groups including GTF (chaired by SoE SAT Chair) which sought to enhance gender equality in the revisions. Significant changes were introduced for 2018/19. The new promotion framework allows staff to more easily self-assess whether they meet criteria for promotion; case studies are available from the UoW HR website.

Annual joint SoE-Chemistry sessions: ‘Demystifying the Promotions Process’ (an AS Action initiated by the UoW ED&I team in 2013) are well-received based on feedback, with the new system welcomed for its structure and clarity.

PULSE-2018 question about promotion process fairness: SoE score increased +8%

Since 2016, four FA8 female academics promoted to Reader (**Table 5.1\_iii**), paving the way for female applications for promotion to FA9 in 2018/19 and beyond.

In the 2017/18 promotion round, SoE females, as 17% of those eligible, comprised ~30% of the applicants; 100% of the cohort was successful.

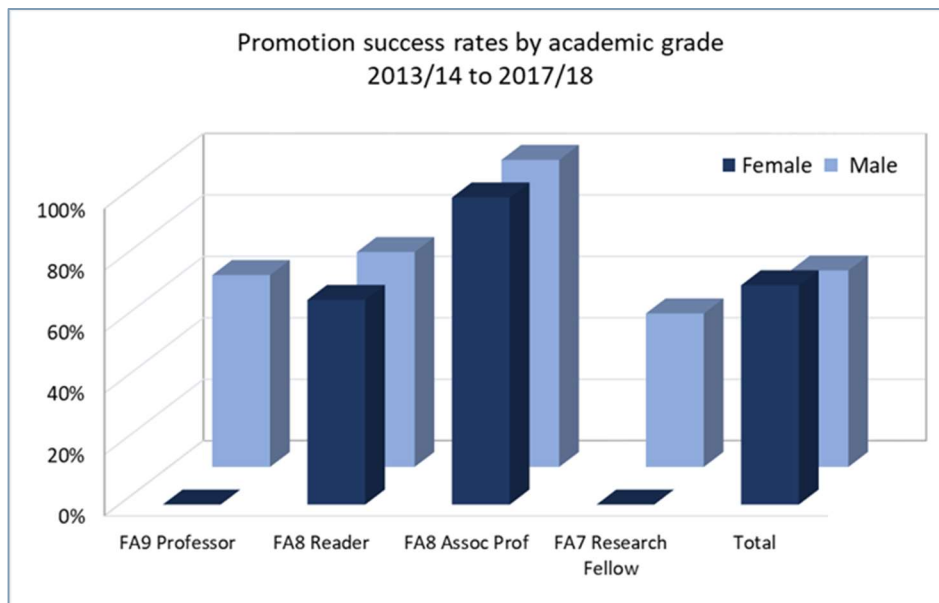
Promotion data for SoE from 2013-14 until 2017-18 are shown in **Table 5.1\_iii**.

**Table 5.1\_iii** Number of applications and promotions by year, grade, and gender. All staff applying for promotion in the period 2014-15 to 2017-18 were in full time roles, with the exception of one male candidate in 2013-14 who worked part-time within that year. All women in SoE eligible for academic promotion through this period (Acad-T&R/Acad-T/Acad-R) were in FT roles except for one Acad-R FA8 funded to work PT by a combination of SoE and external project funding.

*Table removed in public domain version to ensure anonymity due to low numbers in some areas*

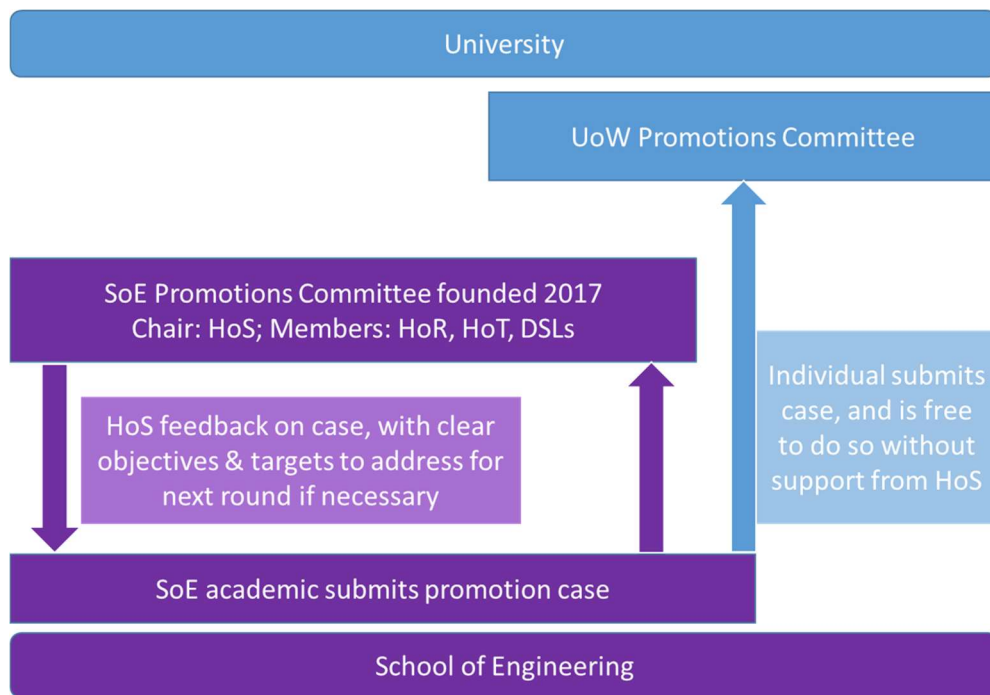
Success rates by grade are shown in **Figure 5.1\_iii\_a**. Promotion to Acad-FA8 marks completion of probation, this is normally completed within 5 years of first appointment at Acad-FA7 (**Section 5.3\_iii**).

**Figure 5.1\_iii\_a:** Success rates aggregated for 2014-2018 to compare by grade.



There are fewer female applicants in the period 2013-2018, but their overall success rate (71%) is higher than that of male colleagues (64%). We checked long-term outcomes for all those who were rejected for promotion.

**Figure 5.1\_iii\_b:** SoE process to support individuals prepare their promotion case for the UoW Promotions Committee



**FUTURE ACTION POINTS 2019**

**AP-2019-2.d Academic Staff (those staff beyond probation on grades FA8 and above), early-mid career, progress and develop their career.**

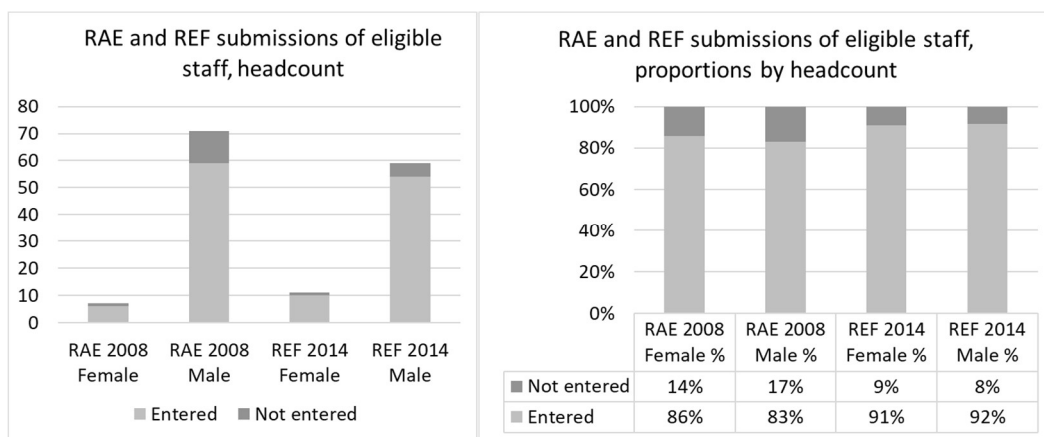
i. SoE to host an annual Promotions Event and monitor the impact of the new promotions system.



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

In the RAE 2008 and REF 2014, the proportions of female and male staff eligible for entry, entered into the assessments, were equivalent (**Figure 5.1\_iv**). The data for both reporting periods represent a combined entry from SoE and WMG (Warwick Manufacturing Group). Of the eligible female staff from SoE, 100% were entered in the RAE 2008, and all REF eligible female SoE staff were entered in 2014, aside from one with special/complex circumstances (ill health). There is no evidence of gender disparity in the data for inclusion in REF, but we noted that in 2014 all 6 case studies were led by men. The REF 2021 is expected to include all REF-eligible staff, and UoW has invested support in developing an impact case study led by a female Acad-T&R-FA9 in SoE.

**Figure 5.1\_iv** Headcount and proportion of eligible staff entered into RAE2008 and REF2014.



[Section 5.1 word count = 1147]

**FUTURE ACTION POINTS FOR AP2019**

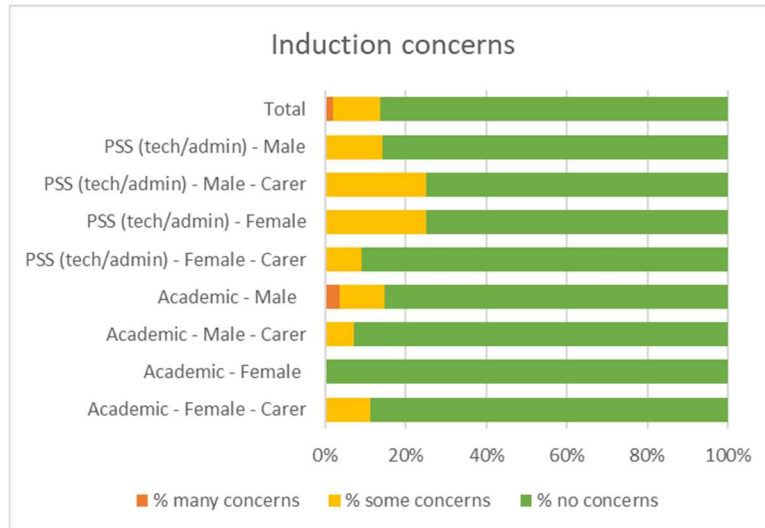
**AP-2019-2.I Ensure there is no gender disparity in impact case study development for REF2021.**

- i. Monitor gender diversity of staff contributing impact case studies.

## SILVER APPLICATIONS ONLY

### 5.2. Key career transition points: professional and support staff

#### (i) Induction



**Figure 5.2\_i\_Induction\_PSS:** In ASAS-2017, PSS expressed some concerns about induction, more so than academics [Figure\_5.2\_i\_Induction\_PSS]. Suggestions primarily focussed on improving provision of role-specific support.

A key way SoE is addressing concerns is through regular revision of formal role descriptors, which play a critical role in PSS role management and progression (**Section 5.2\_ii**).

Induction is led by the HR-AT, and key meetings with SMT staff, mandatory training and role-specific information is provided for all staff (**Section 5.1\_ii**). At the one-to-one meeting with the AO, policies including flexible working, parental leave etc. are discussed and queries/issues explored.

SMART objectives are set with individuals in liaison with line managers, clarifying expectations and supporting the probation process. For individuals not subject to probation (e.g. internal post transfer within UoW), regular one-to-one meetings ensure support for the transition.

#### (ii) Promotion

As shown earlier in **Figure 5.1\_Promotion\_ASAS-2017**, many PSS have concerns about promotion. ASAS-2017 responses confirmed some PSS felt constrained in their roles. Whilst UoW does not currently have a PSS Promotion framework, PSS staff are encouraged and supported to develop personal and professional skills through courses and workshops provided by UoW Learning and Development Centre (**LDC**). This aids development to progress to higher level roles within SoE or the wider UoW. PSS vacancies in SoE are circulated to staff to raise awareness of opportunities, and senior management looks to create secondment opportunities internally, supporting career progression. PSS role descriptors are reviewed every 3 years ensuring accuracy. Where remit and responsibility evolve, they are submitted to UoW for job evaluation/re-grade.

Formal training (**Section 5.4\_i**) and wider engagement outside of direct roles is key to enabling PSS progression.

[Section 5.2 word count = 246]

### 5.3. Career development: academic staff

#### (i) Training

#### IMPACT DELIVERED FROM AP2015

**Objective:** Staff receive appropriate training to support them in their roles

**Approach:** Core staff training needs identified at /prior to induction (e.g. H&S, UoW systems key to role), and mandatory ED&I training for staff involved in recruitment (**Section 5.1\_i**).

Staff encouraged to take UoW leadership and management courses at LDC, and (self)-nominated individuals are also supported to attend external leadership and development courses.

**Success measure achieved:**

Overall uptake of LDC training by SoE staff is increasing (**Figure 5.3\_i\_a**)

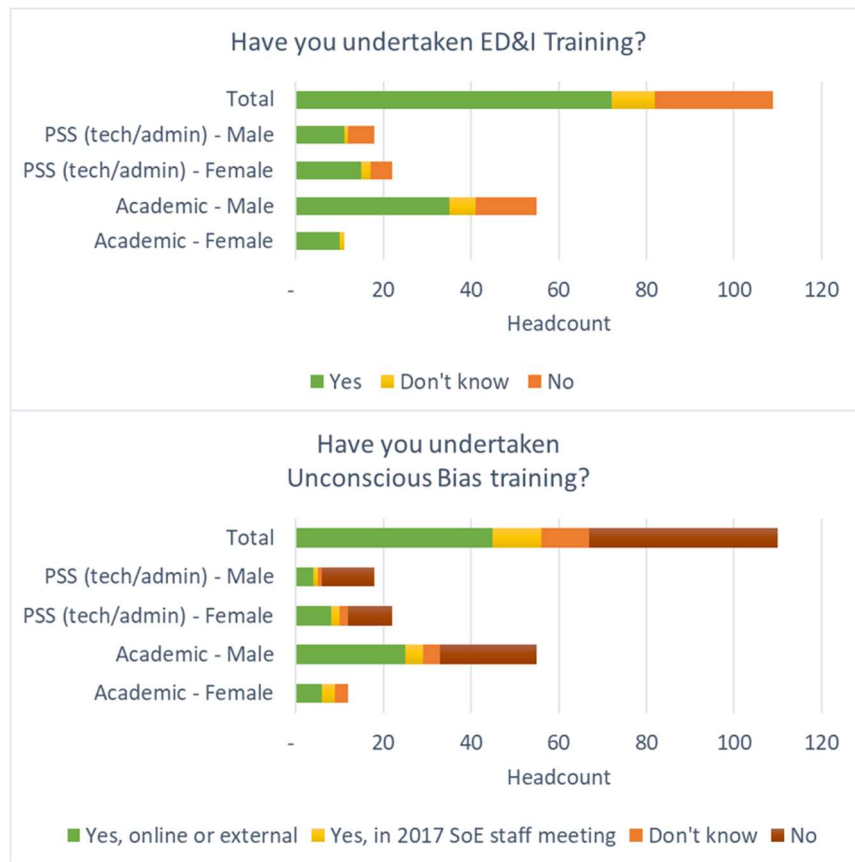
100% of staff involved in the recruitment and selection have completed the above training to ensure the appointment of diverse recruitment panels and a fair selection process is adhered to.

**Figure 5.3\_i\_a:** There is a significant increase (>240% for 2018 versus 2015) in SoE staff taking LDC workshops. This is encouraging as it suggests staff development concerns concerning training, expressed in ASAS-2017, are being addressed [**Section 5.3\_ii**]



In ASAS-2017 we asked staff if they were aware of having taken some form of ED&I and UB training (**Figure\_5.3\_ED&I\_UB\_Training\_ASAS-2017**).

**Figure 5.3\_i\_ED&I\_UB\_Training\_ASAS-2017:** By Nov 2017, 66% staff self-reported completion of ED&I training and 58% UB training (online course available since Nov 2016).



Training was well-received, and feedback from DSLs at SMC indicated professionally-produced training videos are particularly effective for embedding understanding. This was also reflected in the ASAS-2017 survey:

**“I found the online courses surprisingly useful” [Male, Academic, ASAS-2017]**

The majority of SoE academic staff in substantial leadership roles have taken Warwick Leadership Programme (WLP), DSLs nominate appropriate candidates when courses are available. The three nominated WLP participants (2 in 2016, 1 in 2017) were female, indicating senior SoE line managers are proactive in equipping female staff for substantial leadership roles [see Section 6 Case Study 1].

SoE supported UoW nomination of one female FA8 academic to participate in the national Aurora Leadership Training (2016/17), the member of staff was promoted to Reader (2017-18) and cites the course as the catalyst to apply for promotion.

The UoW LDC provides a comprehensive range of training available to all staff groups to support personal and professional development. Courses are attended in person (from half-day to multi-session courses), some are via self-directed learning online using LDC-provided resources.

For staff on academic probation, completion of Academic and Professional Pathway for Teaching Excellence (APP-TE) is essential (PT, 12-month course).

Development courses specifically for academic staff include:

- Research (including one-to-one support with academic writing/career development)
- Teaching and learning, accommodating all levels of academic staff, extending to formal qualifications for PhD students developing a university-level teaching portfolio.

WLP is available to staff at FA8 upwards undertaking significant leadership roles: this is a HoS nomination programme.

Training opportunities are regularly advertised to staff via the LDC and SoE newsletters, and explored with individuals during induction and subsequent Personal Development Reviews (**PDR**) aligning training needs with career development. Staff do not need permission to attend LDC courses.

#### **FUTURE ACTION POINTS 2019**

##### **AP-2019-3.b Staff are supported with role specific information and skills development to deliver their roles.**

- i. Staff to be encouraged through the PDR process to actively engage in training opportunities run by the University and, if necessary, by outside providers.
- ii. SoE to set up a training budget, circa. £10,000, for which staff can apply for funding to attend external training courses, to cover all staff groups

##### **AP-2019-8.b Staff receive appropriate wider training to support them in their roles.**

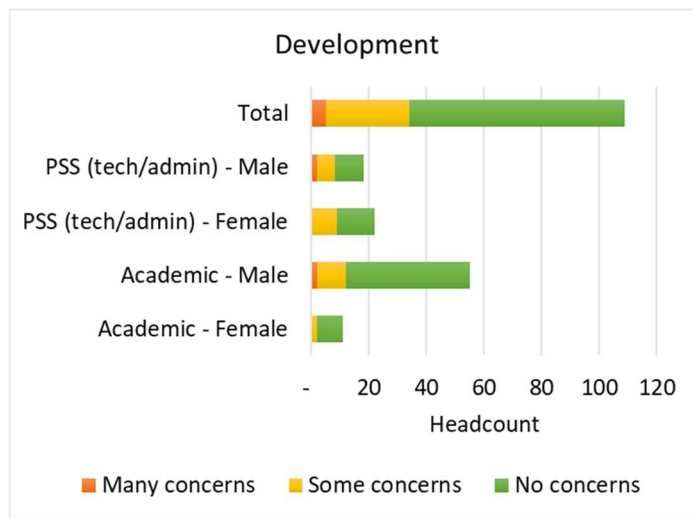
- i. E&D guidance for staff designing research studies and writing proposals (e.g. aligned with EU funder requirements) and drawing on international best practice.
- ii. Termly seminar series to be organised to support academics with key areas of their roles e.g. building links with industry, fellowship applications, creating impact etc.
- iii. Expand formal HR Policy training for Support Managers to ensure up to date knowledge of key policies, i.e. sickness absence.
- iv. To ensure all eligible staff are nominated for WAMP within the next 3 years. Any new staff to PSS management positions to be supported to undertake WAMP (or suitable alternative) within the first 2 years of appointment.
- v. Consider academic nominations for WLP as part of the PDR process with relevant staff actively encouraged to attend.

(ii) Appraisal/development review

**IMPACT DELIVERED FROM AP2015**

PDR engagement rates peaked in 2016 when merit pay was aligned, and formal documentation (evidence of participation) declined in 2018. In 2017, PDR and merit pay was decoupled. Free text comments reflected the perceived value of PDRs was considered line-manager dependent, and there was a preference when merit pay was transparently linked to PDRs. Concerns were reiterated in the PULSE Survey (2017/18) (**Section 5.4\_ii**), and are a UoW-wide issue (2018PULSE response to “Q11 – I believe that my PDR assists me with my longer term career development” in lowest 3 scoring questions, accompanied by UoW-drop in engagement, prompting PDR-improvement actions for 2019 in our successful UoW Institutional Silver Renewal AS2018.

**Figure 5.3\_Development\_ASAS-2017** Majority of staff have no development concerns, but many question the value of the PDR process since it decoupled from merit pay



**Table 5.3\_ii\_a:** Eligibility and voluntary completion (return) of the PDR for academic staff compared with all staff in SoE. Data since 2015 are shown; in previous years the appraisal system was different.

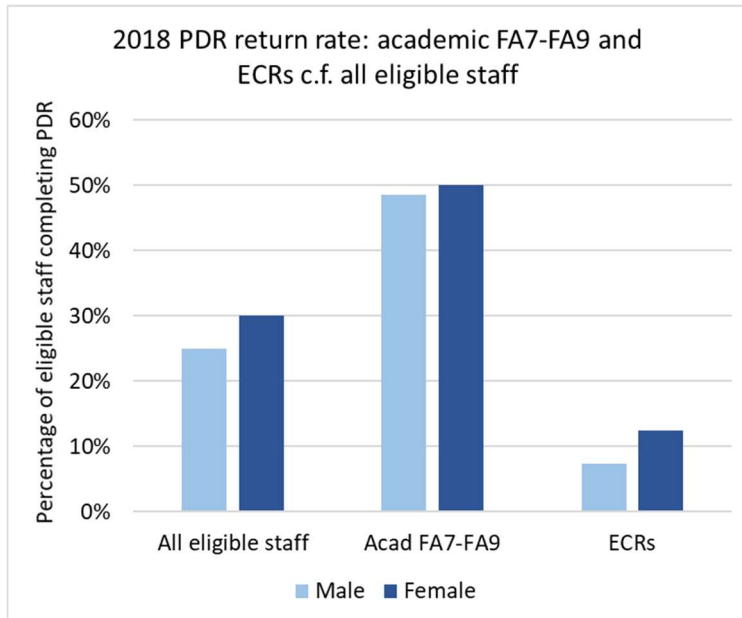
	2018				2017				2016				2015			
	Count		Proportion (%)		Count		Proportion (%)		Count		%		Count		Proportion (%)	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
PDR Eligible - All Staff	164	60			158	45			154	37			153	45		
PDR Return Rate - All Staff	41	18	25%	30%	80	26	51%	58%	90	28	58%	76%	82	31	54%	69%
PDR Eligible - Academic	124	30			120	23			121	21			115	23		
PDR Return Rate - Academic	38	9	31%	30%	63	17	53%	74%	81	13	67%	62%	59	11	51%	48%

Staff receive informal appraisal in one-to-one meetings with line managers throughout the year. Additionally, UoW offers an annual PDR which operates in a similar form for all staff; the main difference being topics covered on the PDR form. Historically PDR was compulsory, but recently it has become voluntary, with some staff not undertaking a review, and others undertaking review but choosing not to return documentation to HR-AT. A brief period when PDR was actively linked to merit pay (2016-17) saw the highest level of engagement, dropping significantly since 2017 after decoupling.

In 2017 feedback was received in staff consultations indicating female academic staff FA7-8 were most likely to engage with PDR [77% in 2017], followed by male academic staff FA7-8 [61% in 2017], **Table 5.3\_ii\_a**. Female ECRs engaged particularly strongly with PDRs, increasing return rates from 33% to 70% between 2015 and 2017.

The impact of gender for staff groups is that females are more likely to complete PDRs (**Figure 5.3\_ii\_a**). This might be because female staff value prioritised structured documented appraisal over informal feedback.

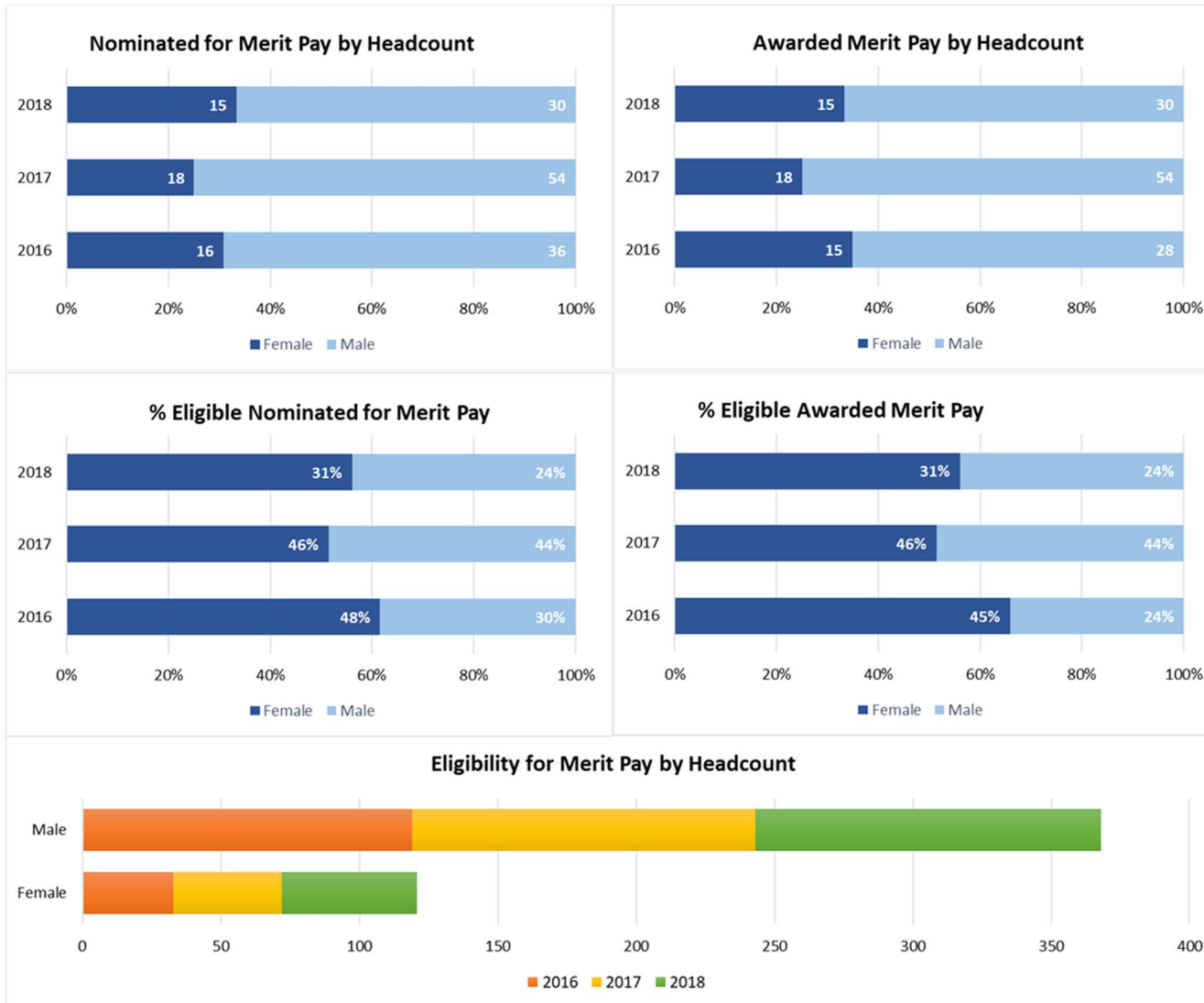
**Figure 5.3\_ii\_a.** Female academic staff are slightly more likely to engage with the formal PDR process than male academic staff, reflecting all-staff behaviour.



Analysis showed the proportion of SoE staff receiving Merit Pay was unaffected for 2018 versus 2016. Female staff are more likely to engage with PDR, and are also more likely to be nominated for Merit Pay (**Figure 5.3\_ii\_b**). Merit Pay success rates in SoE match UoW rates by gender.



Figure 5.3\_ii\_b: Merit pay success rates 2016-2018



Arguably merit pay is an opportunity to reward effort and attitude, ensuring staff are recognised and rewarded for work that may not be recognised in external metrics. Having discovered and evaluated the SoE staff concerns arising from these recent UoW-level changes, significant work underway to promote understanding of the benefits of PDR.

#### FUTURE ACTION POINTS FOR AP2019

##### AP-2019-2.a Ensure SoE does not present barriers to progression.

- i. Focus group incorporating all categories of staff to be organised to discuss improving the PDR process for optimum benefit to staff.
- ii. Develop bespoke guidance and briefing sessions to support consistent and effective implementation.
- iii. PDRs to be promoted through multiple channels to communicate their value to all categories of staff, supported by series of features by the SAO entitled "Getting to know the PDR process."
- iv. Consultation with PDRA staff to identify barriers to career progression.

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

#### IMPACT DELIVERED FROM AP2015

Acad-T&R/R are benefiting from the popular SoE-wide lunchtime term-time seminar series providing all new and long-serving Acad-FA7-9 an opportunity to share their research with colleagues and students.

Acad-T is increasingly a highly-respected route in SoE, supported by hiring of teaching-research-active academic staff 2015-2018, and with proven-equivalent career progression opportunity with SoE Acad-T FA9 achieved by internal promotion and external appointments.

Acad-T&R/T/R administrative roles are now advertised internally (e.g. SoE Admissions, DGS), and significant work to develop and maintain role descriptors for these posts enables staff to see and understand the opportunities available, and to apply for a balanced portfolio of experience to build their CV. This coordinates well with the UoW revised promotion criteria, making it transparent how delivery of administrative roles with sustained impact counts towards promotion eligibility in all academic posts

Support for academic staff is available through a variety of UoW and external training and development schemes, the scale of the DS structure in SoE ensures DSLs maintain one-to-one interactions with staff to identify and promote career support. Mentoring/coaching/shadowing of senior roles for career development are provided formally at UoW level. Beyond provision described in **Section 5.3\_ii**, specific support for probationers and ECRs includes:

### Support for Academic Probationers (Acad-FA7)

UoW requires a probation period of up to five years for academics in their first post beyond FA6.

This period includes

- Formally reduced teaching and admin load to enable establishment of research profile (including pedagogical research for the Acad-T route)
- Mentor within their DS
- Early Career Network peer support (encouraged by HoR and SAO)
- APP-TE training (**Section 5.3\_i**)
- Annual probation reviews (UoW policy) with DSL and HoS
- Concluding with automatic consideration for promotion to Acad-FA8.

### **Mentoring**

*I can speak with confidence about my mentor. The support has been continuous, meaningful and on all aspects. Fully satisfied from the support that I am receiving.*

**[Female academic, All Staff Survey 2017]**

### Support for Early Career Researchers (FTC)

ECR involvement in ASAS-2017 highlighted ECR-specific concerns about career development opportunities and their engagement with the SoE community. To address this, an ECR-specific survey piloted in autumn 2018, designed to:

- Address potential gaps in ECR provision,
- Draw on ASAS-2017 and PULSE2018 findings
- Draw on experience of LDC staff
- Draw on the RO's experience in post
- Take into account feedback from former ECRs

The piloted survey attracted a 20% response rate with insufficient information to report the results by gender while maintaining confidentiality.

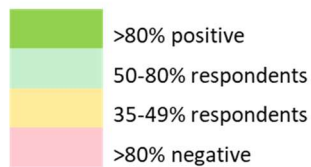
Based on **Table 5.3\_iii**, lack of awareness of career development support opportunities is priority to address.

ECR-volunteered priorities strongly emphasized preparation for the next academic career stage, while only 9% of respondents reported applying for high profile fellowships (EPSRC, Leverhulme). A SoE-dedicated Research Development Manager (**RDM**) was appointed in April 2018, increasing structured support for academics applying for research funding, prioritising ECR development. Previously the HoS highlighted an opportunity to invite final-year female PhD students/FA5-6 to a RAEng Fellowships Information event at UoW. Half the invitees attended, giving positive feedback, and Dr Rossana Castaldo (**Section 7**) successfully competed for fellowship funding in this period; others indicated an intention to do so.

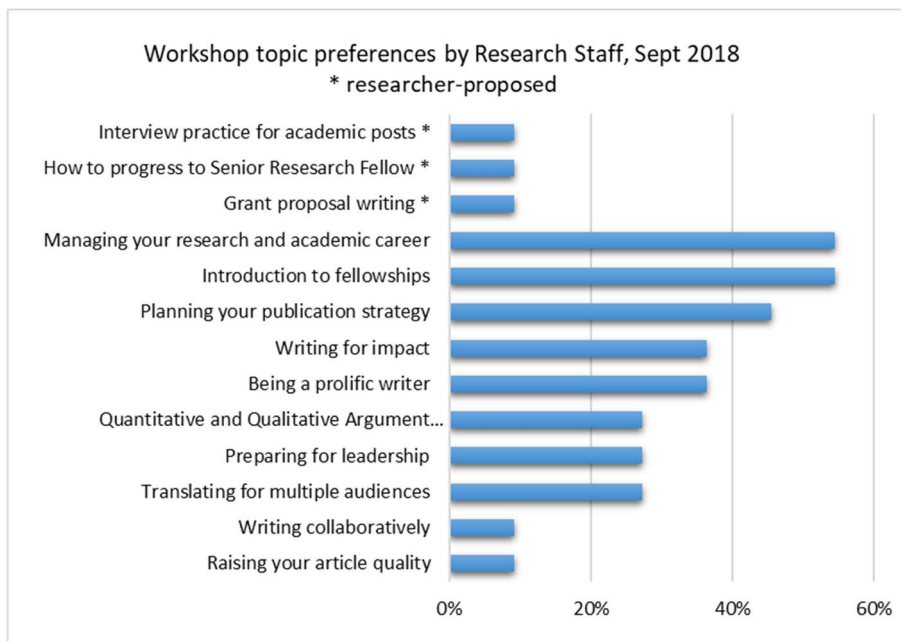
**Table 5.3\_iii: Early Career Researcher Survey Findings 2018**

RESEARCH STAFF SURVEY RESPONSES SHAPING SILVER ACTION PLAN 2019	AGREE	NEUTRAL	DISAGREE
<b>ENVIRONMENT</b>			
I feel I am a valued member of my research group	85%	8%	8%
I feel I am a valued member of the School	46%	38%	15%
<b>CAREER DEVELOPMENT</b>			
Do you feel that you are given adequate opportunities to present your research?	92%	0%	8%
Are you given adequate opportunities to contribute to journal articles?	85%	0%	15%
Do you feel comfortable in approaching your manager regarding your career plans?	69%	8%	23%
Do you feel informed about the career options open to you beyond this current position?	54%	8%	38%
Do you believe the PDR process is valuable for Research Staff?	46%	46%	8%
Have you been invited to have a PDR (personal development review) with your manager?	62%	0%	38%
<b>AWARENESS OF UNIVERSITY-LEVEL RESOURCES AND NETWORKS</b>			
Are you aware of Warwick's Learning and Development Centre (LDC)?	100%	0%	0%
Do you receive the LDC Newsletter for Research Active Staff?	85%	0%	15%
Are you aware of the LDC Resource Bank?	8%	8%	85%
Are you aware of Warwick's Research Staff Forum?	15%	0%	85%

**KEY**



**Figure 5.3\_iii: ECR future training and development priorities identified in ECR survey**



## FUTURE ACTION POINTS 2019

### **AP-2019-2.c Postdoctoral and early career academics are supported to progress and reach their potential.**

- i. Ensure postdoctoral and early career academics have the opportunity to develop a personal career development plan with support of their line manager, including support from the LDC.
- ii. RDM to hold a weekly drop in session for ECR (research focussed) staff to provide advice and guidance on bid writing and support for future careers.

### **AP-2019-2.f To repeat the ECR survey on an annual basis, conducting mid-academic year to maximise the opportunity for response.**

- i. Run ECR survey on an annual basis.

### **AP-2019-2.g To promote RSF forum activity at SoE level, to build awareness of, and engagement with the community.**

- i. Engage 1 - 2 ECRs to attend the termly RSF meeting and provide a report for circulation.

### **AP-2019-2.h To plan activities with the University's LDC focussed on Engineering specific ECR issues.**

- i. To hold one workshop per term for ECRs focussing on areas highlighted within the survey (e.g. Introduction to Fellowships).

### **AP-2019-2.i To provide greater information on funding and fellowship opportunities for ECRs.**

- i. To develop mechanism for regular dissemination of information to ECRs and opportunities for support/mentoring.

### **AP-2019. 2k Capture the impact of SoE Research Seminars on ECRs.**

- i. Monitor attendance of ECR staff at each seminar series.
- ii. Collect qualitative feedback from ECR staff through focus groups.
- iii. Where appropriate incorporate feedback from focus groups into future planning of seminar series.

### **AP-2019-8.a Staff are supported by the wider SoE community.**

- i. To implement an SoE mentoring scheme to be offered to all categories of staff with a mentor from within the School.
- ii. The University wide mentoring scheme supporting broader development (UoW-Mentoring) to be regularly promoted to current staff via the SoE Newsletter and staff intranet.

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

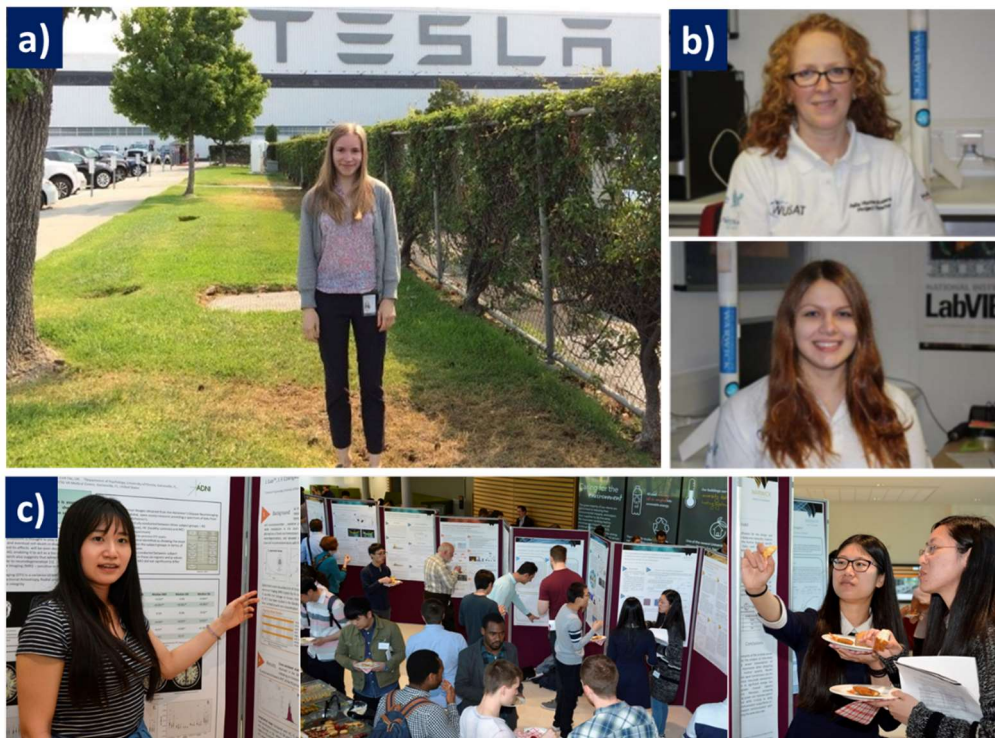
#### IMPACT DELIVERED FROM AP2015

AP2015 delivered Women in Engineering (WiE) Scholarships, the highest-ranked criteria is to be a willing ambassador for Women in Engineering. These competitive scholarships are empowering our students, for example - increasing their success competing for internships (Figure 5.3\_iv Isabella Curtis). WiE scholar Emma Osbiston secured a summer internship at the Diamond Light Source synchrotron, Harwell. Her work was subsequently featured in a 2-page article in the MagPi (the official Raspberry Pi magazine), which SoE celebrated in online news. Impact from dedicated and cohort-wide initiatives is also detailed in Section 4.1\_v.

“Having the chance to be part of the scholars has made me see that people have faith in my potential to succeed, the support has helped me immensely in pursuing academic and social goals I had set for myself...”  
WiE UG Scholar, 2016

At PGT/PGR level, SoE is increasing provision of scholarships, and supporting SoE staff and students to apply for highly competitive UoW scholarships (Section 4.1\_iii). Coordination and awareness enables long-term support of individuals transitioning from PGT-PGR (Figure 5.3\_iv\_c) and PGR-PDRA (Section 7 Rossana Castaldo).

Figure 5.3\_iv\_a) WiE Scholar Isabella Curtis, 3<sup>rd</sup> Year UG Systems Engineer and Warwick Engineering Society Outreach Officer, recent winner of a RAEng ‘Engineering Leaders Scholarship, spent a three-month Quality Internship at Tesla in summer 2018, based in the Metrology Team in Fremont Factory, CA, where she analysed and improved a gap and flush measurement routine; b) UG engineers build and sent satellites into space with the WUSAT Team: Co-Director Julia Hunter-Anderson and Marina Shcherbakova (UG Systems Engineering student) attend a Bio-logging Symposium in Konstanz after the European Space Agency selected the WUSAT-3 satellite and its wildlife monitoring mission; c) Ms Jierong Luo, SoE 2<sup>nd</sup> year PGR and International Chancellor’s Scholarship holder, presents at the annual SoE Postgraduate Symposium.



SoE has an excellent programme of career support embedded in the taught and research degree structures. This is enhanced by the vocational nature of Engineering, and SoE ensures degree accreditation from the professional engineering institutions to support graduates towards becoming chartered engineers. There is a dedicated engineering specialist in the UoW Student Careers Service, and the ASSM's team includes dedicated student placements and careers support. Engineering creates outstanding long-running projects that UGs engage with (**Figure 5.3\_i**), enabling specialist-subject-skill development and national/international academic and industry networking.

Dedicated SoE-issued scholarships, primarily funded via alumni donations coordinated by a central UoW team, allow directed support to under-represented groups. Presently, these include a Multicultural Scholars Programme (MSP) and WiE Scholars Programme. While the majority of UG applicants do not prioritize scholarships/finance (**Section 4 Figure 4.1\_ii\_f**), the financial support and confidence gained by a recipient seeking scholarship support can be transformative, demonstrated annually when the SAT-Chair and ASSM interview 1<sup>st</sup> Year UGs to award 5 – 8 scholarships (£2k/yr plus additional mentoring and development opportunities), and in the scholar's annual reports.

#### FUTURE ACTION POINTS 2019

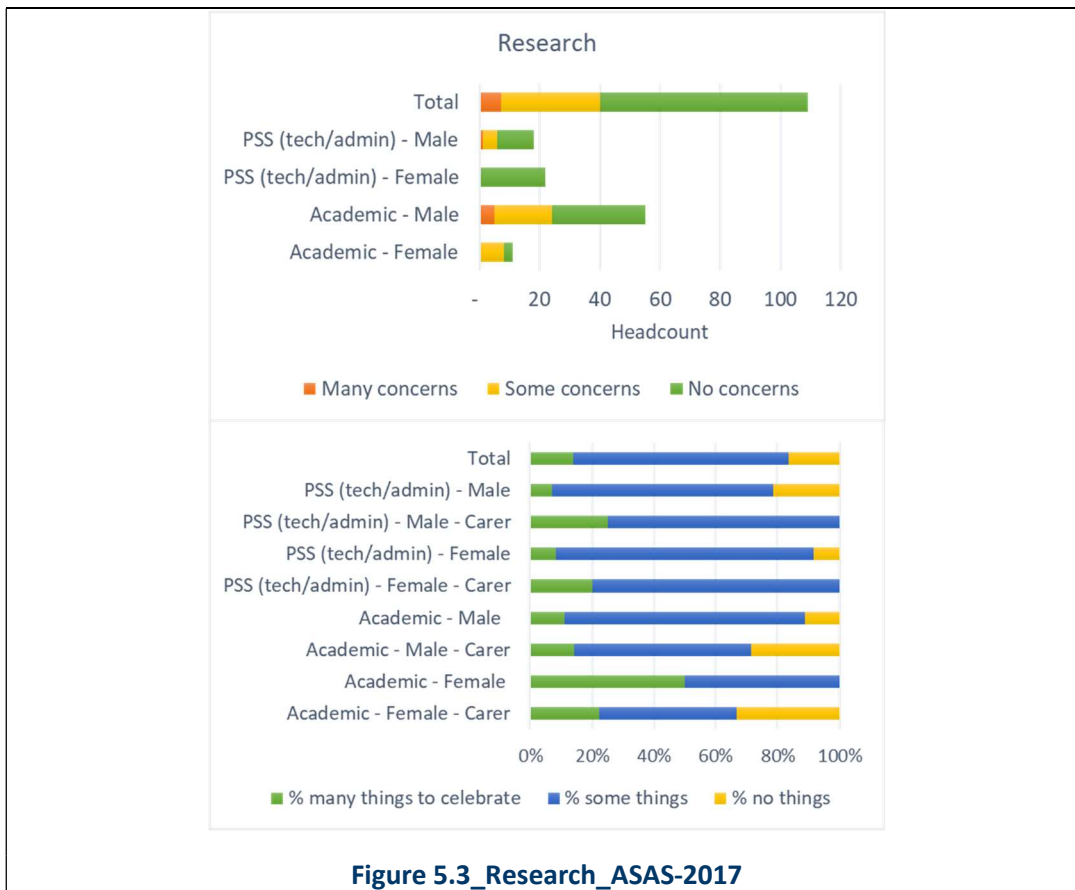
##### **AP-2019-4.e Unconscious bias training integrated into Students Skills (UG, PGT, PGR)**

- i. Continue to deliver UB training through the mandatory 1st year module, ES101
- ii. Ensure that all new and continuing PGR students receive UB training.
- iii. Continue to embed UB training in Outreach activities, i.e. SmallPeice/Inspire.

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

#### IMPACT DELIVERED FROM AP2015

In ASAS-2017 we asked staff about the value placed on research in SoE. The majority of staff in all groups felt there were things to celebrate. An identifiable concern was the need for a SoE-based RDM beyond the existing central support from Research & Impact Services (R&IS) – addressed with the RDM appointment.



Regular research funding alerts are distributed to research-active staff informing them of current/forthcoming funding opportunities appropriate to their research expertise. Support to prepare proposals, and develop previously unsuccessful proposals, includes grant-craft advice, provision of costings and funder-specific guidance, with advice on responding to reviewer comments and mock panel provision ahead of funder interviews.

Additional support is available for ECR's, including workshops familiarizing them with different funding. The RDM engages with ECRs in forums and one-to-one meetings to help them plan research funding strategies.

[Section 5.3 word count = 1793]

#### FUTURE ACTION POINTS FOR AP2019

##### **AP-2019-2.j. To recognise, and where possible quantify, co-investigator contributions in research projects.**

- i. To update the internal project costing form to capture proposed spread of effort across investigator team.
- ii. To request amendment to the IDEATE Grant System to make datasets viable to search and monitor.



## SILVER APPLICATIONS ONLY

### 5.4. Career development: professional and support staff

#### (i) Training

#### IMPACT DELIVERED FROM AP2015

In ASAS-2017 we asked staff about the value placed on Development. PSS directly associate this with training opportunities. Encouragement and facilitation of PSS to attend LDC training (described in **Section 5.3\_i**) has delivered an uptake in LDC use, females are disproportionately likely to take these opportunities (38% of PSS, 64% of workshop participants, **Table 5.4\_i**).

PSS LDC Workshops		
Year	M	F
2015	6	8
2016	1	13
2017	16	20
Total	23	41

**Table 5.4\_i** PSS Uptake by gender is available to year-end 2017

PSS in management and leadership positions are prioritized for management training, with gender diversity of participants 2015-2018 including:

Warwick Introduction to Management (**WIM**) for ≤FA5 [F:M=1]

Warwick Administrative Management Programme (**WAMP**) for FA6/FA7 [F:M=0.67]

#### (ii) Appraisal/development review

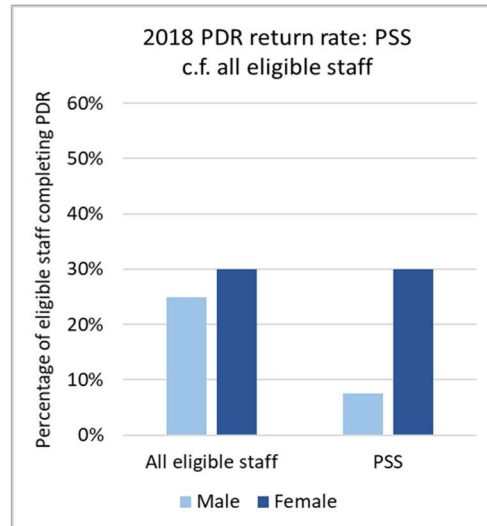
#### IMPACT DELIVERED FROM AP2015

Uptake of annual PDRs in the year we obtained detailed feedback from ASAS and PULSE was **high for PSS-Admin (75% in 2017)**, and **low for PSS-Tech (31% in 2017)** compared to the **SoE average (53% in 2017)**. Uptake reflects the perceived value of PDR's by staff groups.

Staff satisfaction with the University PDR process was low in the 2017 PULSE survey, with 47% of staff responding negatively to *"I believe my PDR assists with my longer term career development"*, in 2018 uptake dropped for all staff groups (**Table 5.4\_ii\_a**).

**Table 5.4\_ii\_a:** Eligibility and completion (return) of the PDR for PSS compared with all staff in SoE. Data since 2015 are shown; the prior appraisal system was significantly different.

	2018				2017				2016				2015			
	Count		%		Count		%		Count		%		Count		%	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
PDR Eligible - All Staff	164	60			158	45			154	37			153	45		
PDR Return Rate - All Staff	41	18	25%	30%	80	26	51%	58%	90	28	58%	76%	82	31	54%	69%
PDR Eligible PSS	40	30			38	22			33	16			38	22		
PDR Return Rate - PSS	<5	9	< 8%	30%	17	9	45%	41%	9	15	27%	94%	23	20	61%	91%



**Figure 5.4\_ii\_a:** For PPS, females are more likely to engage with PDR than males, a trend also observed for academic staff (Section 5.3\_ii).

The value of the PDR (concerns about decoupling of Merit Pay from 2017) were shared by PSS, impacting uptake. Academics and PSS share trends in uptake by gender. The suggestion that PDR is only valuable with a clear route to promotion is supported by evidence (Section 5.3\_ii) that academic staff FA7-8 are most likely to engage with PDR, and that PSS-Tech are least likely.

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

Support for staff progression is through applications for positions within SoE or UoW, secondments within SoE / UoW and re-grades.

Training is widely available to staff supporting their career development, which the School supports through time off to attend and funding. Technical apprentices undertake a HND and HNC as part of their apprenticeship, the School covers the fees. The study is undertaken alongside on the job training. On completion of the apprenticeship, and securement of employment in SoE, the cost of a degree is covered by SoE and time off given for study.

Opportunities such as the University mentoring scheme are promoted to staff via the School newsletter, one to one meetings and at PDR's, this provides a mentor/coach external to the School who provides support/guidance. The School is developing a work shadowing scheme, how this will operate has not yet been determined but will develop over the coming year.

Technical Apprenticeship courses are provided by an external college. Low numbers of women in the apprenticeship sector (3%) present challenges in terms of building a female network

[Section 5.4 word count = 418]

## FUTURE ACTION POINTS 2019

### **AP-2019-2.b Assess the feasibility of offering work shadowing for PSS within the school.**

- i. Consultation to take place with staff to determine whether there is an interest in work shadowing.
- ii. If feasible, shadowing scheme to be scoped and implemented for the academic year 2021/2022.

### **AP-2019-2.m Retention of female technical apprentices.**

- i. When the next vacancy/position becomes available for an apprentice, trial visits to schools/technical colleges and/or recruitment fairs to encourage female apprentices to apply to roles in SoE.
- ii. To support the SoE female apprentices to participate in the WES Apprentice Conference 'EngTechReady'

## 5.5. Flexible working and managing career breaks

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

SoE supports staff preparing for maternity or adoption leave in line with University policy. The SAO and HR-AT coordinate support for line managers and individuals with planning and preparing for leave..

Once SoE is aware an individual is pregnant a risk assessment is undertaken with support from the SoE H&S Officer, and appropriate adjustments made.

Following discussion of leave plans, line managers work with employees to clarify priorities for the period before leave, supporting handover planning. Handover involves the line manager and, where possible, the cover for the period of leave. SoE aims for a fortnight overlap between employee and cover to facilitate smooth transitions.

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

Communication methods and frequency are agreed with individuals before they start leave, this varies between individuals from no contact to regular updates on activities impacting their role. SoE clarifies individuals are not expected to undertake work during leave.

Employees are made aware of KIT days before their leave, it is up to the individual whether they undertake these but they are encouraged as their return to work nears. Where KIT days are taken they have a clear remit.

The University provides 10 paid KIT days. Some staff do not wish to undertake KIT days, preferring instead to make ad hoc visits with their children to keep in contact. The SoE policy on funding UoW childcare for recruitment applies to staff attending KIT days.

#### FUTURE ACTION POINTS 2019

##### **AP-2019-5.g Evaluate the uptake and effectiveness of KIT days.**

- i. Staff meeting to take place on return from leave to evaluate the effectiveness of KIT days

KIT Day To add the following statement to formal communications with staff due to take, and currently taking, parenting leave which includes KIT days:

“Childcare for pre-school children aged 3 months+ can be provided for you on a temporary basis at the University of Warwick Nursery in order for you to attend Keeping in Touch (KIT) days. Childcare is subject to availability of places at the Nursery, and KIT day availability is no indication of the availability of a permanent place: this is subject to waiting list system.”

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

SoE provides ongoing support to staff on their return to work and has supported with access issues with the UoW Nursery where an individual has struggled to secure the required days.

In ASAS-2017 female academics with caring responsibilities had the most concerns about parenting leave, including querying how leave can be covered in practice, or whether tasks are postponed until an individual returns. Since **AS-2015** we have supported returning academic staff with Warwick Academic Returners Fellowships, which protect them to focus on research for 6-12 months (proportionate to the amount of leave taken). Free text responses in ASAS-2017 indicated confidence in the application of the UoW processes, and staff noting tasks given to people subsequently going on maternity leave had been reallocated.

**FUTURE ACTION POINTS 2019**

**AP-2019-5.h Promote the milk-expression room and baby changing facilities and ensure all staff are aware of the policy on bringing children into the School.**

- i. Include information on ED&W area on SoE website and as part of general information about SoE facilities

(iv) Maternity return rate

**SILVER APPLICATIONS ONLY**

All employees remained in post 18 months after return from maternity leave, except one member of PSS (**Table 5.5\_iv \***) who left within 3 months, in the 2015-16 year. Whilst on maternity leave the PI of the project this PSS administrator (\*) was supporting, secured a new position. The grant transferred with the PI leading, the administrator's role was TUPE'd (TUPE: Transfer of Undertakings (Protection of Employment) Regulations). SoE negotiated to ensure the administrator could work remotely from UoW, allowing her to continue in her role upon return from maternity leave.

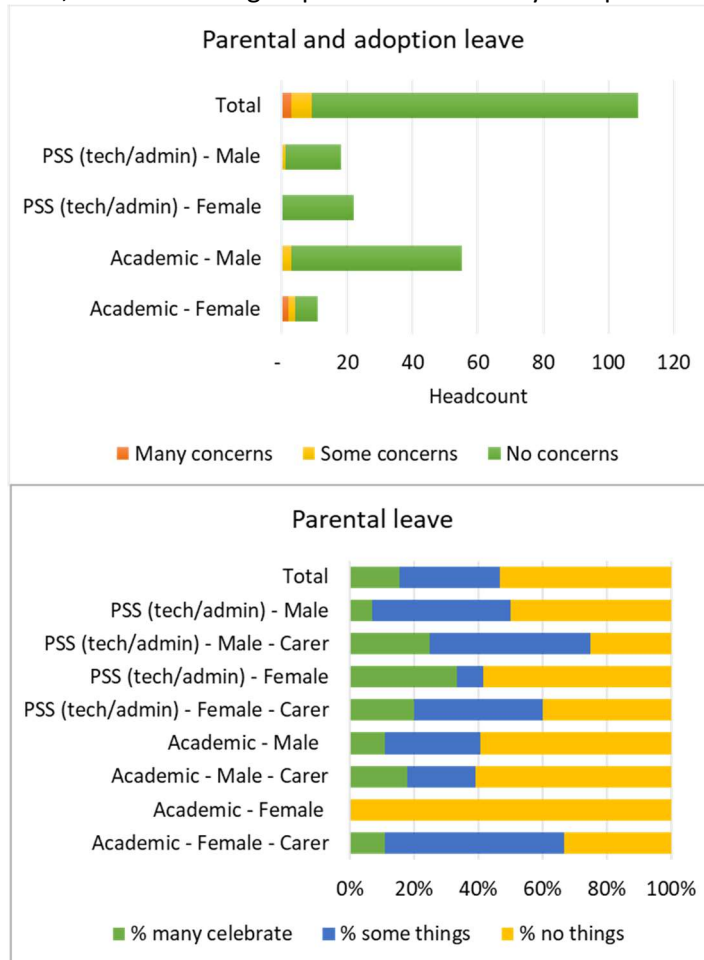
**Table 5.5\_iv** Maternity return rate 2015-2018

*Table removed to ensure anonymity due to low numbers*

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

**IMPACT DELIVERED FROM AP2015**

**Figure 5.5\_Parental\_Leave\_ASAS-2017:** 92% of staff have no concerns about parental leave, and though the academic female carer group included those who indicated the strongest concerns, it was also the group second-most likely to report things to celebrate.



**Figure 5.5\_Parental Leave\_ASAS-2017**

Concerns about parental leave expressed in the **ASAS-2017**-Survey focused around obtaining cover for tasks while on parenting leave.

**Table 5.5\_v:** Paternity, shared parental adoption, and paternal leave uptake. During this period, only paternity leave was reported, there were no instances of shared leave. As paternity leave is something that academic staff, in particular, have often arranged informally with their line manager, this table only captures formal records.

*Table removed to ensure anonymity due to low numbers*

Future action includes focus groups to maximise shared knowledge of policies and of the support SoE can provide [AP-2019-5.f\_iv].

## FUTURE ACTION POINTS 2019

### AP-2019- 5f Improve return to work experience following maternity/paternity/adoption leave.

- i. Promote the University's Working Parents Network.
- ii. Promote the Returning Parents' Mentoring Scheme.
- iii. Encourage existing SoE parents to become mentors of the above scheme in order to provide support to new parents within the SoE.
- iv. Hold focus groups with staff returning from maternity/paternity/adoption leave to identify any areas where support can be improved.

#### (vi) Flexible working

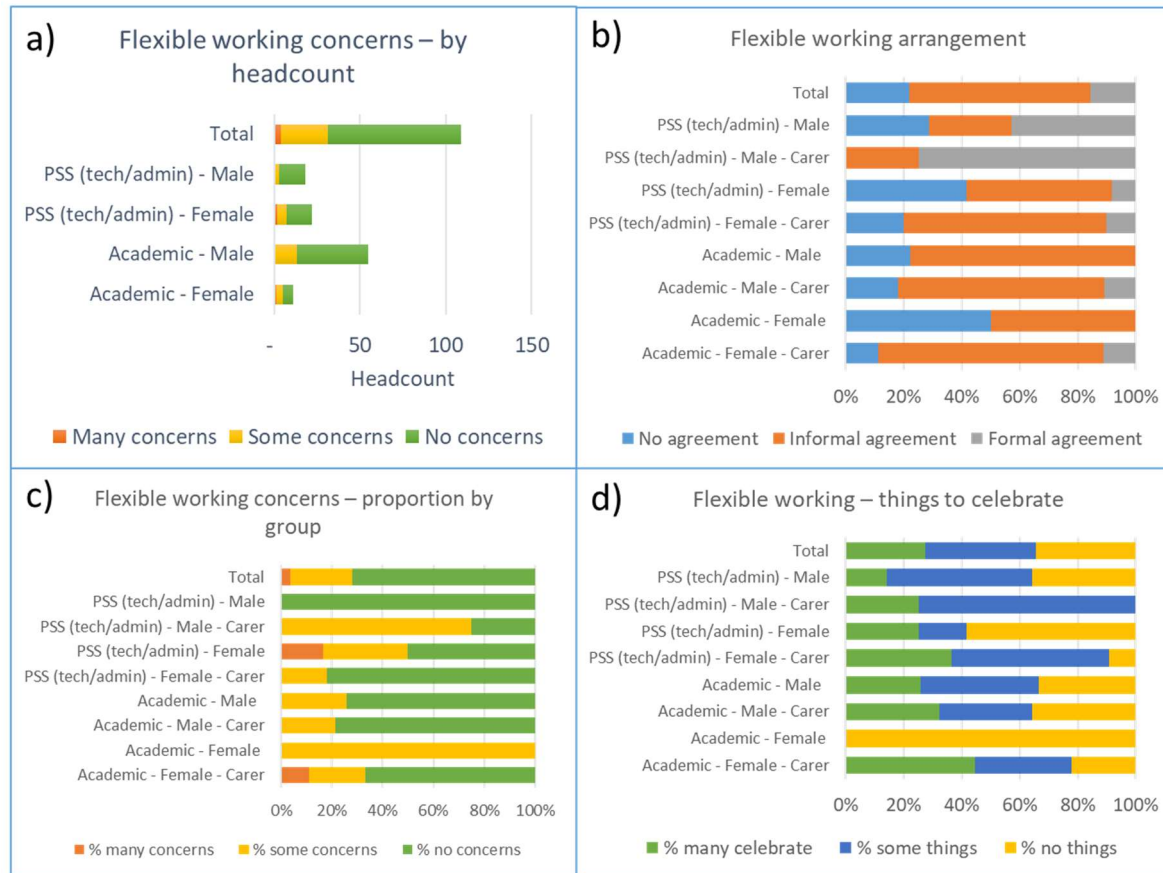
### IMPACT DELIVERED FROM AP2015

The ASAS 2017 Survey indicated <5% of staff have many concerns about the flexible working policy, and that those most strongly supportive of flexible working provision ("Many things to celebrate") are female academic and PSS with declared carer responsibility. Qualitative feedback showed how welcome arrangements are for carers [Figure 5.5\_Flexible\_Working\_ASAS-2017].

*Here, there has been a great progress in the Department in the recent years. Flexible working culture is in place and many of us take benefit of it. I believe that this is the biggest support from my department on individuals.* [Female Academic]

Analysis in this submission is based on headcount not FTE posts. We analysed proportions of our staff in PT roles (<1FTE), taking into account whether posts had been advertised as PT, or whether staff had requested flexible working. Female staff (academic and PSS) are disproportionately more likely to be in posts advertised as PT (8F:9M), or to have secured PT flexible working (7F:8M). These include staff at higher grades (Acad FA8-FA9)

**Figure 5.5\_Flexible\_Working\_ASAS-2017** evaluating staff-reported views on flexible working and their arrangements.





SoE regularly promotes the UoW flexible working policy via the SoE newsletter, all new starters are made aware of the policy at induction.

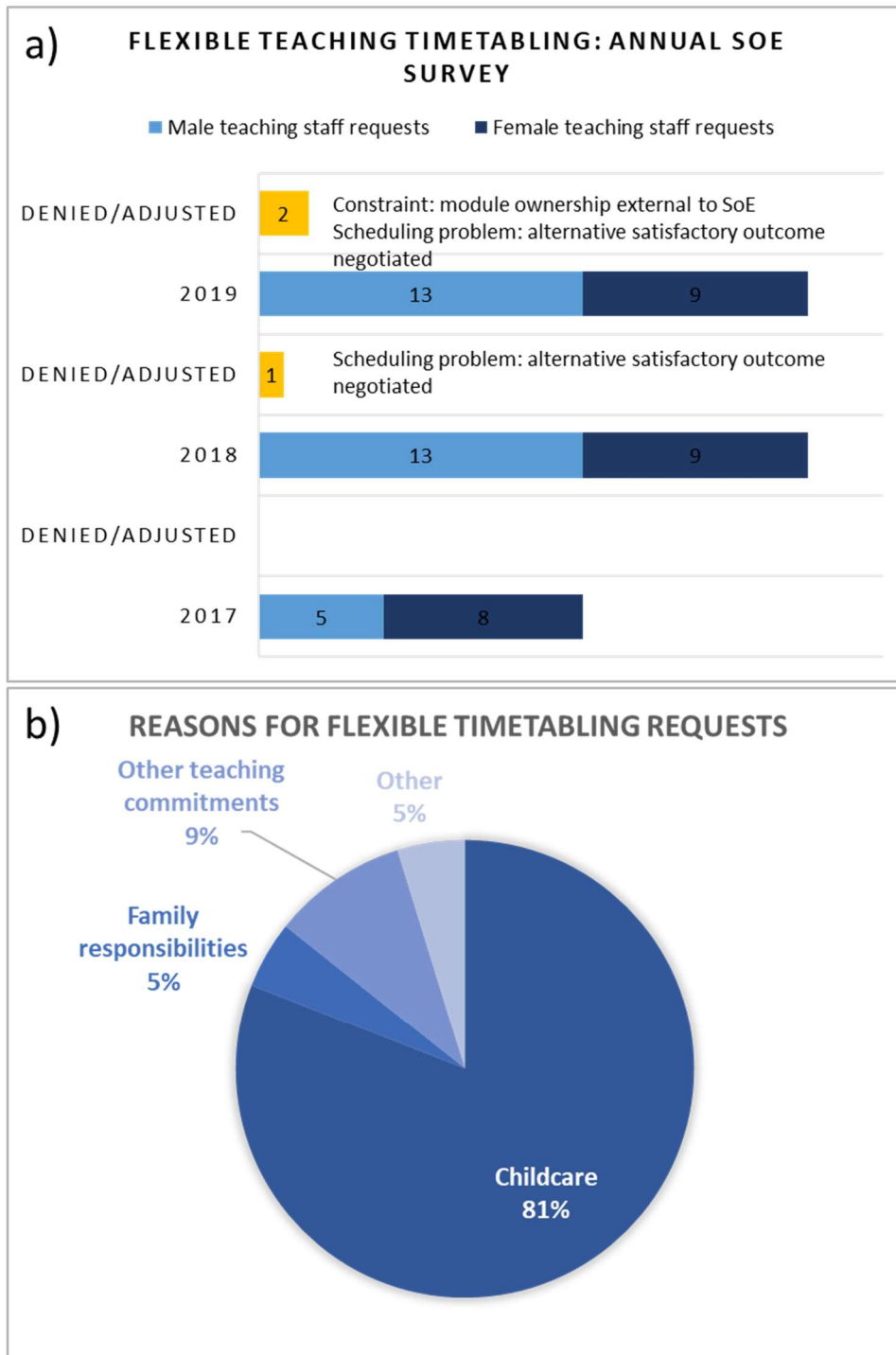
All requests for flexible working are considered in line with UoW policy taking into account the needs of individuals and the business. Formal requests e.g. a permanent reduction in hours go through line managers and then to the SAO or HoS depending on the individuals role.

Informal arrangements are agreed locally between individuals and their line manager. In March 2018 the School extended a formal flexi time scheme, in place for Technical Staff, to all staff grades 1a – 5. Many administrative staff had informal flex arrangements in place creating disparity around how time was taken. The informal approach meant some staff did not take back time. A policy was approved and shared with staff allowing flexibility, formal recognition of and reimbursement for overtime within this arrangement (>36.5 hours/week) and build-up of additional leave.

Among our survey respondents, formal agreements were more likely for PSS than academic staff, and vice versa. This works in practice for the majority, given the nature of the roles, SoE will continue to ensure 100% of formal requests for flexible working are considered, in line with UoW policy.

On an annual basis, since January 2017, SoE asks staff who teach to provide information on their requirements via an online form to ensure that timetabling for the following academic year accommodates employees' care commitments. Subsequent changes in circumstances for individuals are supported on a case-by-case basis. One male academic respondent to the ASAS-2017, who had adult but not child dependents, believed incorrectly that staff with children had priority for flexible scheduling of delivered teaching. This confirmed the importance of the annual survey to include all caring commitments, which is now well established and well-advertised by email and the SoE Newsletter. In **Figure 5.5\_vi\_b** it is noticeable that in the first year, primarily female teaching staff used the system, and the only requests related to childcare. Since 2018, uptake by academic-male-carers exceeds academic-female-carers.

Figure 5.5\_vi\_b\_Flexible-timetabling-requests a) by uptake, b) by reason (Jan 2019)



We noted in the ASAS-Survey-2017 that the only respondent group who were all full-time were **academic-female-carers**. It is therefore necessary to ensure female academics are aware of options for part-time working, and is good to see from the qualitative and quantitative feedback that flexible arrangements are working well for this group.

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

Where an individual wishes to increase their hours this would be done in discussion with the line manager and with approval from the SAO/HoS. Approval would be given for an

increase following a conversation with the individual, reassuring this is what the employee wishes. Reasons behind the decision would be discussed and additional workload agreed. Informal or formal arrangements such as working from home, working hours agreed to accommodate childcare etc. would be agreed prior to the increase in hours. An agreement would be a trial period to allow the individual the flexibility of returning to part time hours if required. The process does not distinguish Academics from PSS, and **Section 6 Case Study 2** includes an example of implementation.

[Section 5.5 word count = 1197]

## 5.6. Organisation and culture

### (i) Culture

To embed gender diversity in every-day activities, the SAT is pro-active in this area, demonstrating how with careful planning it is possible for gender-balanced events to be routinely achieved in a sector where women are under-represented. These actions are being shared as best-practice in SoE, with encouragement for individuals to consider ED&I impact as part of their role.

ASAS-2017/UGAS-2018 surveys of staff and students helped identify levels of ED&I issue awareness within groups. For example, staff and students were asked about gender diversity in teaching materials. The significant majority, irrespective of role and gender, had no concerns to report, but free text comments confirmed that many had not previously considered the question:

*"I don't think this is something many of us have given much thought to, and it probably needs looking at! Having the question asked of us is a good start."* [Academic Female]

Staff leading by example include Dr Leandro Pecchia (SAT-member, Acad-FA8) who deliberately ensures gender balance in taught module reading list resources, at organised events and for internal seminar programmes (e.g. Applied Biomedical Signal Processing and Intelligent e-Health lab had 6F/9F speakers 2015-2018).

Concerns about the culture of the working environment are issue-specific, as demonstrated in PULSE2018 (compared against PULSE2016):

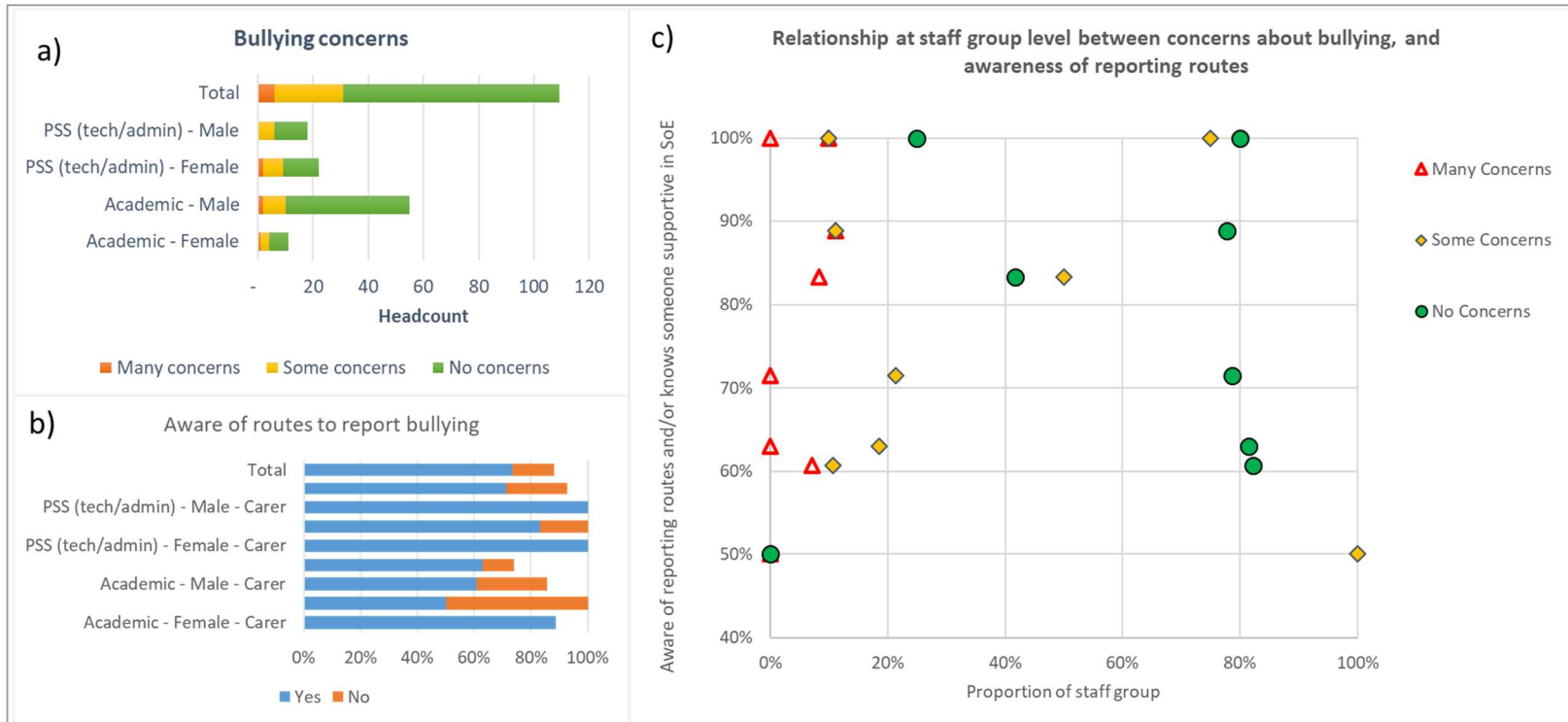
- 67% of SoE staff agree with the statement: I am treated with fairness and respect at UoW
- Increase (+7%) in SoE staff feeling able to speak up and challenge the way things are done
- Increase (+8%) in the perception that senior UoW leaders are open and honest

It is critical that these areas continue to improve, recognising 33% of SoE staff did not report feeling treated with fairness and respect. In particular, a small group of SoE staff (5%) reported in the ASAS-2017 having many concerns about bullying, while 23% had some, 72% had none.

## **Bullying and Harassment**

One of the most challenging areas for any department to tackle, from the line management and recipient perspective, is bullying and harassment. Our staff surveys suggest that this is rare, but that incidences arise and need tackling. It is sometimes reported anonymously, routes to do this at UoW level are highlighted in our weekly newsletter and in ED&I-related communications. While we are glad to see that the majority of staff and students confirm in surveys that they are aware of reporting routes and/or that they feel there is someone in the department they trust that they can raise such issues with [**ASAS-2017-Survey response: 83% Yes, 17% No**], we need to confirm in our next survey that in our response we have reached the 15% that report lack of knowledge of reporting routes (**Figure 5.6\_i\_a\_b**), and those who did not participate in the ASAS-2017-Survey.

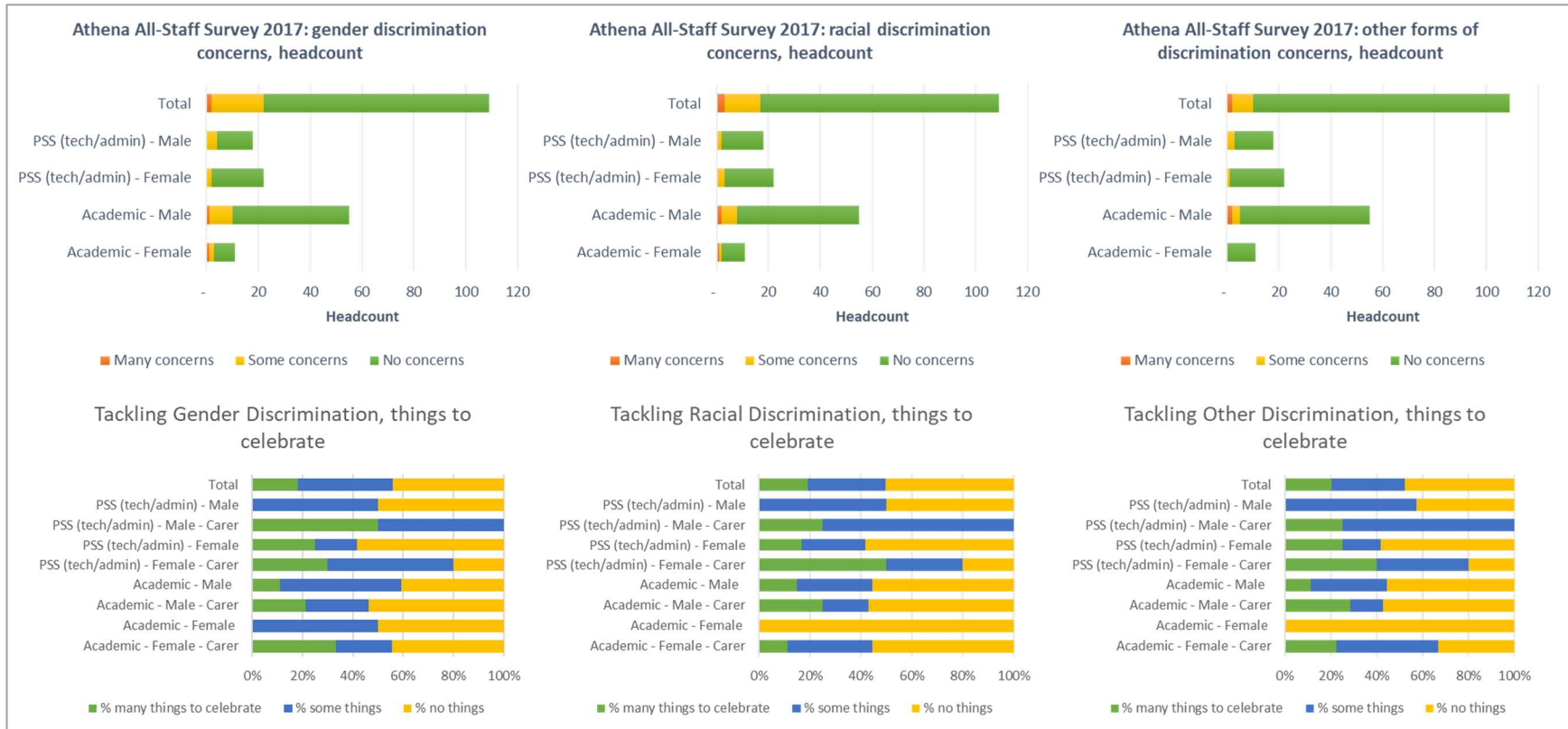
**Figure 5.6\_i\_a** Bullying concerns, and understanding of how to report concerns. The majority of staff in all groups are aware how to report bullying, and the majority of staff have no concerns about bullying. Awareness of reporting routes is not correlated with level of concern, although notably the group where 'some concerns' dominated (female academics, no declared caring role), had the lowest rate of reporting route awareness at 50%.



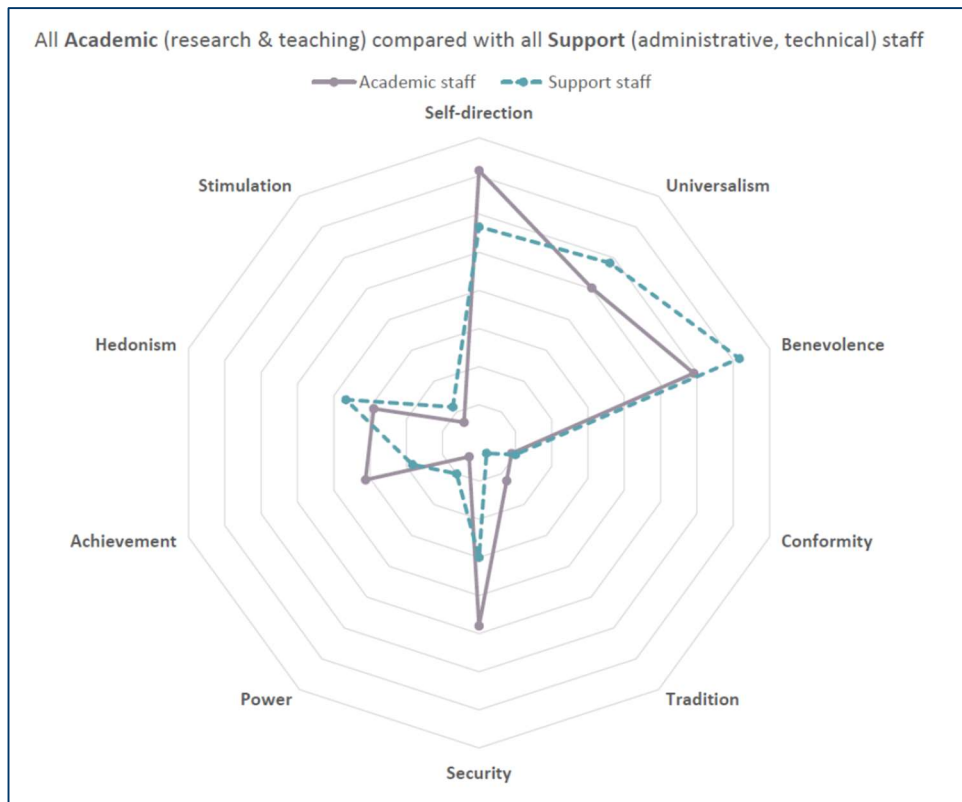
**A priority response to the All Staff Survey in 2017 and PULSE 2018 has been twofold:** to hold a bullying and harassment focus group within SoE, facilitated by the UoW ED&I team, and to provide SoE staff with **'Respect'** cards from autumn 2018 which are available on request. Initial feedback suggests these are being used primarily by PSS. It is a reflection on the supportive leadership that we have in SoE, that enabled the bullying and harassment session to run within SoE with confidentiality and sensitivity assured for all those interested to attend, and the constructive way in which the 'Respect' cards are being provided and received by staff in efforts to ensure greater equality and respect for the full spectrum of roles within SoE.

There are very few concerns about forms of discrimination (**Figure 5.6\_i\_b**). Those groups most likely to express some concerns are also among those who are most likely to recognise things to celebrate in SoE's tackling of these concerns.

**Figure 5.6\_i\_b:** There are not many concerns about discrimination, whether gender, racial, or other (e.g. disability, sexuality). Individuals expressing concerns are also likely to highlight things to celebrate in how concerns are tackled, suggesting engagement with the issues



**Figure 5.6\_i\_c** Exploring the extent to which SoE staff share values in an exercise at the summer 2017 All Staff Meeting, revealing strong shared values across staff functions.





## FUTURE ACTION POINTS 2019

### **AP-2019.5.a SoE has a clearer understanding of staff welfare issues and a plan to address these.**

- i. Develop engagement in PULSE survey, which is our main mechanism to understand staff issues such as work-life balance and work-related stress.
- ii. Improve PULSE survey results in the school.
- iii. Conduct ASAS survey in years when PULSE does not run.
- iv. Develop and maintain a PULSE Action Plan following the PULSE survey in 2020 focussing on priority issues identified within the PULSE survey. Action Plan to be refined following each survey.

### **AP-2019-5.b. Staff feel they have an appropriate level of work life balance and SoE actively promotes staff wellbeing**

- i. Email policy confirming that staff are not expected to respond to staff and students over the weekend.
- ii. Training of SoE staff as mental health first aiders.
- iii. Staff Wellbeing activities to be held throughout the year to promote mental health and wellbeing

### **AP-2019-5.c Raise awareness of Dignity at Warwick policy and resources within the SoE and ensure staff feel respected and treated with dignity.**

- i. Develop a specific action plan to focus on the issues around dignity, respect and bullying and harassment.
- ii. Identify dignity champions within the SoE across all staff groups who will promote the values of Dignity at Warwick and act as points of contact for staff who wish to discuss issues.
- iii. Create a working practice document for staff and publish on the intranet summarising key HR policies and working standards to help set expectations for all.
- iv. Introduction of respect cards to the SoE to promote that respect is an important quality that people value.

### **AP-2019-5.d All staff understand and respect the importance of diversity in the workplace**

- i. Run a yearly E&D activity for staff.
- ii. Promote the new University Moodle course on Unconscious Bias to all staff and monitor completion rates.
- iii. Include the University Moodle course on Unconscious Bias in the induction process for new staff. Monitor completion rates and follow-up non-completers.
- iv. Share information about the impact of diversity on organisational performance, and about funder requirements for minimum standards to be met, on the ED&W area of the SoE website including outward facing Athena pages.

(ii) HR policies

SoE has a strong working relationship with Central HR with the SAO and AO meeting with Central HR fortnightly, ensuring SoE is aware of policy changes/developments and can provide feedback on the impact of changes. Policy updates are communicated to the SAO / AO who will share with relevant members of staff. For PSS staff this is done via email from the SAO followed up in group or individual meetings. For academic managers information is shared via email with an offer of further support/guidance as required. The SAO has oversight of all formally raised issues in the School and advises on bullying, harassment, grievance and disciplinary processes – this oversight ensures policies are applied correctly, consistently and fairly. The close working relationship with Central HR enables Central oversight and gives SoE access to additional guidance as required. UoW policies are publicised to staff in their induction with the AO, and in the interests of transparency all HR policy documents are available to staff on the UoW intranet.

**FUTURE ACTION POINTS 2019**

**AP-2019-5.d All staff understand and respect the importance of diversity in the workplace**

- i. Run a yearly annual E&D activity for a priority group of staff
- ii. Promote the new University Moodle course on Unconscious bias to all staff and monitor completion rates.
- iii. Include the University Moodle course on Unconscious bias in the induction process for new staff. Monitor completion rates and follow-up non-completers
- iv. Share information about the impact of diversity on organisational performance, and about funder requirements for minimum standards to be met on the ED&W area of the SoE website including outward facing Athena pages.

**AP-2019-7.d Staff and students at Warwick are inspired by female engineers as role models breaking down entrenched stereotypes**

- i. Build on our initiatives and programmes of events from INWED18 to mark the WES Centenary
- ii. Create a permanent display of plaques featuring the aspirations and achievements of a diverse range of inspirational engineers, including SoE staff, alumni and other individuals who have made significant contributions in the engineering sector
- iii. Celebrate Women in Engineering Day with speaker (for 2019, WES centenary celebration hosting WES member Sally Friswell from Arup Engineering) about career and experiences in engineering to all staff, students and invited local secondary school pupils interested in STEM careers
- iv. Sustain educational partnership with WES, with impact for staff recruitment and support for the Warwick WES student group, including national-level network building.

v.	Continue to support the Warwick WES student group to expand their activities and impact.
vi.	Increase the number of female speakers from external companies to carry out placement talks to students, ensuring the proportion exceeds sector average.
vii.	Creation of multi-media clips of female staff and students on the SoE website
viii.	Creation of a 'Women in Engineering' leaflet for prospective students featuring current staff and students detailing their interest/success in the field.

(iii) Representation of men and women on committees

#### IMPACT DELIVERED FROM AP2015

**Success measure achieved:** Committee membership is representative of the School's diversity and is reviewed by SMC and SAT. **This principal decision-making team and committees have achieved near-gender-equality in 2018**, with SMT 40% female membership; SMC 55% female membership.

The SoE has 10 internal committees that meet regularly throughout the year, plus the Industrial Advisory Board which includes external appointments primarily from industry (**Table 5.6\_iii**), and the afore-described SAT (**Table 3.1\_a**). The two primary decision making committees are SMC and SMT (shown in bold). The female representation on all SoE committees exceeds the proportion of female staff in the groups represented. **Table 5.6\_iii\_b** shows staff membership by role: some staff sit on multiple committees because of their roles: for example HoT serves on seven committees. However, this is well-recognised and accounted for in the Role Descriptors. Other posts that staff may self-nominate to, or be nominated for, are open to nomination and application.

**Table 5.6\_iii** Committee membership showing gender diversity (top), and full details of committee membership composition (bottom)

Summary of Committees, Aug 2018	Female	Male	Total	Female %	F:M ratio in 2018	F:M ratio in 2015	SoE change in F:M ratio 2015-2018
School Management Committee	5	4	9	56%	1.25	0.11	1.14
Senior Management Team: Headcount: 2F/3M (FTE: 2F/2M)	2	3 (2)	5 (4)	40% (50%)	0.66 (1.00 FTE)		
Health and Safety Committee	4	10	14	29%	0.40	0.18	0.22
Technical Committee	2	6	8	25%	0.33	0.13	0.21
Research Committee #	2	7	9	22%	0.29	0.33	-0.05
Industrial Advisory Board	8	22	30	27%	0.36	0.05	0.31
International Committee	6	4	10	60%	1.50	0.38	1.13
Planning and Operations Committee	3	3	6	50%	1.00	(new since 2017)	
Course and Module Approval Committee	6	7	13	46%	0.86	(new since 2017)	
Teaching Excellence Committee	6	10	16	38%	0.60	(new since 2017)	
Student Recruitment and Admissions Committee	7	4	11	64%	1.75	(new since 2017)	
Teaching Operations Committee *	6	7	13	46%	*replaced in 2017	0.86 *	
Teaching Policy Committee Joint with WMG *	7	5	12	58%		0.38 *	

School Management Committee		Industrial Advisory Board		Planning and Operations Committee	
Head of School (HoS)	M	External		Head of School	M
Deputy Head/Director of Research (DH/DoR)	M	Ben Mayo (Interim Chair)		Director of Studies	M
Deputy Head/DSL Civils	M	Acal BFi UK Ltd		Head of Teaching	F
DSL M&P	F	Chris Firth		Director of Student Experience	M
DSL Systems	M	Colin Eddie Consulting		ESO Manager	F
DSL EE	F	Cooper Walsh		Academic & Student Services Manager	F
Senior Administrative Officer (SAO)	F	Dyson		<b>Course and Module Approval Committee</b>	
Head of Teaching (HoT)	F	Energy Systems Catapult		Head of School	M
Chair – Athena Swan Committee	F	GE Energy Power Conversion		Head of Teaching	F
<b>Senior Management Team</b>		GE Power Conversion		Academic and Student Services Manager	F
Head of School	M	IBM		Director of Studies	M
Deputy Head/Director of Research	M	Jaguar Landrover		School/WMG Science Faculty Education Rep	M
Deputy Head/DSL Civils	M	National Composites Centre		Director of UG Studies WMG	M/F
Senior Administrative Officer	F	Rolls Royce		Academic and Student Services Manager	F
Head of Teaching	F	Thales UK		SSLC Representatives in Attendance	M/F

<b>Health and Safety Committee</b>		The Binding Site Group	M	Civil DDL	F	
Head of School	M	<u>Internal</u>		Electronic DDL	M	
Building & Facilities Manager	M	Head of School	M	Mechanical and Process DDL	M	
School H&S Officer	M	Head of Research/Joint Deputy Head	M	Systems and Information DDL	F	
Director of Health & Safety	M	Joint Deputy Head/DSL, Civils	M	CSE Course Rep as required	M	
H&S Advisor (Sciences)	F	DSL, M&P	F	<b>Teaching Excellence Committee</b>		
Acad-mid career M&P	M	DSLEE	F	Head of Department	M	
Acad-mid career Systems	F	DSL Systems	M	SMC Representative (Deputy Head of School)	M	
Head of Teaching	F	Senior Administrative Officer	F	Head of Teaching	F	
Technical Services Director	M	Head of Teaching	F	Placements and Internships Officer	F	
Assistant Technical Services Manager	M	Research Theme Leader, Cities	M	Director of Graduate Studies	M	
Assistant Technical Services Manager	M	Research Theme Leader	M	Director of Studies	M	
Senior Administrative Officer	F	Sector Lead, External Affairs	M	Director of Student Experience	M	
Deputy Head/Director of Research	M	DDL, M&P	M	MSc Programmes Director (School of Engineering)	M	
Photography & Services Technician	M	DDL, Systems	F	Civil DDL	F	
<b>Technical Committee</b>		DDL, Civils	F	Electronic DDL	M	
Academic mid-career EE	M	DDL, EE	M	Mechanical Process DDL	M	
PSS-Tech	M	<b>International Committee</b>			Systems and Information DDL	F
PSS-Tech	M	Director of International Studies	M	Undergraduate Course Director WMG	F	
Academic mid-career Systems	M	Head of School	M	Academic and Student Services Manager	F	
Senior Administrative Officer	F	Head of Teaching	F	Chief Examination Secretary	M	
Technical Services Manager	M	Director of Postgraduate Studies	M	CSE Representative	M	
Academic mid-career M&P	M	Ex officio Head of Department	M	SSLC Representatives in attendance	M/F	
Academic mid-career Civil	F	(Chair) Director of International Recruitment	M	<b>Student Recruitment and Admissions</b>		
<b>Research Committee</b>		Head of Teaching	F	Head of School	M	
Director of Research – M&P Stream – Senior	M	Exchange Coordinator	M	Director of Student Recruitment	F	
Research Officer	F	Director of Student Recruitment	F	Head of Teaching	F	
Research Development Manager	M	Associate Professor (Civil Engineering)	M	Admissions and Widening Participation Manager	F	
Academic mid-career EE Stream	M	Director of MSc Programmes	M	Student Recruitment Officer	F	
Academic senior Civils Stream	M	Assistant Professor (Predictive Modelling Centre)	F	Director of International Recruitment	M	
Academic mid-career EE Stream	M	Assistant Professor (Biomedical Engineering)	M	Marketing Executive	F	
Academic early-career M&P stream	M	Professor of Electrical Power	M	Academic and Student Services Manager	F	
Academic senior EE Stream	F	(Secretary) Student Recruitment Officer	F	Director of MSc	M	
Academic senior Systems Stream	M	Principal Teaching Fellow, Warwick Business School	F	Web Manager	M	
		Marketing Executive, External Affairs	F			
		Assistant Director, International Office	F			
		International Recruitment Officer, SROAS	M			
		Assistant Registrar, Teaching Quality	F			
		Global Partnership Manager, International Office	F			

### FUTURE ACTION POINTS 2019

#### **AP-2019-6.a All staff feel they are represented and have a voice in the SoE committee structure**

- i. Following SMC, a summary email is circulated to all staff to keep them informed on decisions taken.
- ii. SMC to extend an open invitation for two members of SoE staff to attend the Committee each time they meet.

#### **AP-2019-6.b Committees within SoE have a clear purpose and remind and are representative of diversity in the School.**

- i. Continue to ensure Committee membership maps effectively to Committee remit/ToR.
- ii. Each Committee to continue to annually reviews its ToR.
- iii. Membership of Committees to continue to be evaluated for diversity and representation on an annual basis.
- iv. Ensure all Committee members have undertaken UB training.

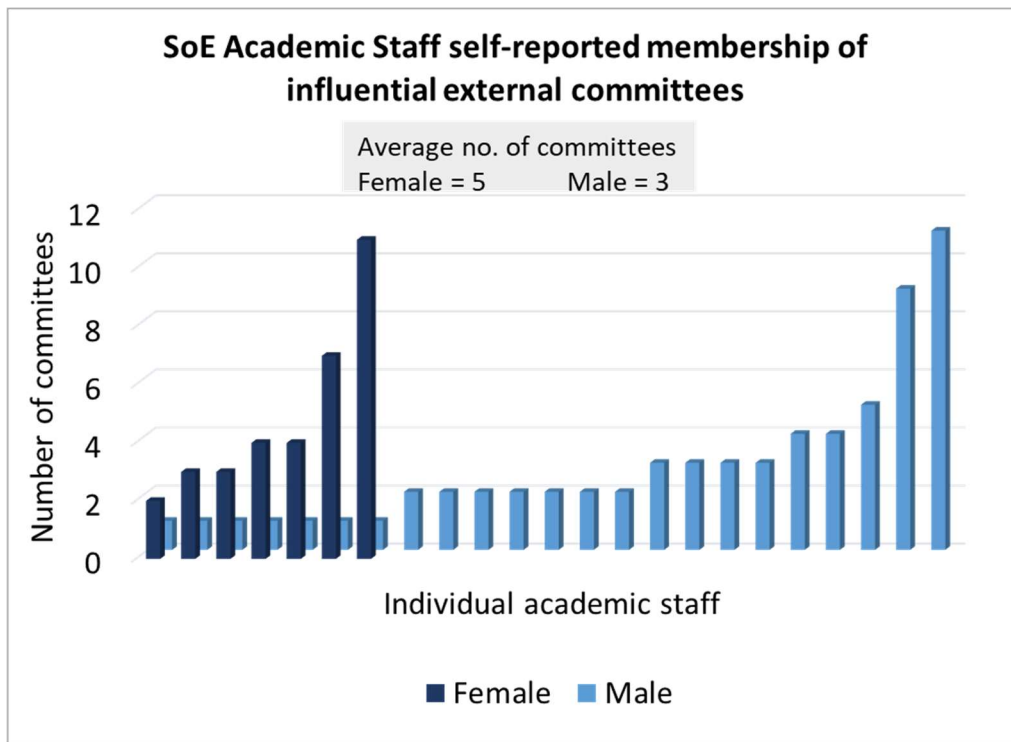
#### **AP-2019-6.c Monitor the gender balance amongst SoE Committee Chairs**

- i. Continue to review Committee Chairs on a yearly basis.

#### (iv) Participation on influential external committees

There is long-standing encouragement from senior management for staff to be involved with external committees, including professional bodies such as the Engineering Institutions, and to serve on the Grant Awarding Panels for the EPSRC and other funders of engineering research and outreach. The workload model includes 100 hours for additional activities including external committee service, and colleagues are proactive in supporting each other. For example, the CEE-Stream DDL, who has a particularly interest in student education, was proposed by an SoE colleague for the national WES Council soon after she took her appointment at UoW, and was subsequently appointed WES Director of Education and joined the INWES Board of Directors. [Section 6 Case Study 1]. In 2018, SoE invited staff to self-report membership of influential committees external to UoW. Women (23% of respondents) participated on average in a higher number of influential external committees than men (Figure 5.6\_iv). Analysis taking into account career stage confirmed higher levels of engagement spanned ECR to senior professor regardless of gender, with an additional larger group of male staff reporting membership of only one or two committees.

**Figure 5.6\_iv:** Participation in external committees, where self-reporting in March 2018 drew responses from 30 academic staff, citing membership of 100 external influential national and international committees, boards, and panels.



(v) Workload model

**IMPACT DELIVERED FROM AP2015**

In **AS2015**, the SoE workload model was a priority to change because of the complexity of the inherited system and changes to administrative systems. A more individual-focussed process, enabled by expansion of the teaching management team, has enabled DS-level workload allocation. Academic staff had the greatest concerns about workload, and we believe the improved process accounts in part for the improved job satisfaction and reports of supportive line managers in PULSE 2018. The key factors have been:

- ◆ Delegate to DS so DSLs maintain a sense of individual staff load.
- ◆ Quantify more realistically the hours needed to do a task **[Section 6 Case Study 2]**.
- ◆ Define more precisely the work involved in each role using Role Descriptors

For strategic purposes, SMT will re-introduce a more formal workload calculator to support planning and protect against scope for inconsistencies at DSL level.

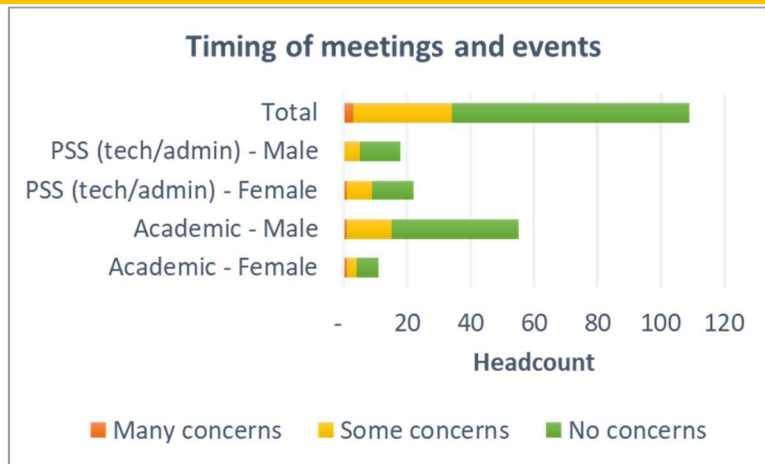
**FUTURE ACTION POINTS 2019**

**AP-2019- 3.a SoE will review the current workload model to identify improvements to increase sustainability and transparency and to continue to support the planning and distribution of academic staff work.**

- i. Workload model reviewed and updated as required.
- ii. Process for publishing teaching and academic duties reviewed and improved to increase transparency in work allocation.
- iii. SoE will review and collate feedback from staff within 12 months of the revised load model being in place.

(vi) Timing of departmental meetings and social gatherings

**IMPACT DELIVERED FROM AP2015**



**Figure 5.6\_Timing of meetings and events – ASAS17:** Most staff did not report concerns about timing of meetings/events in ASAS-2017.

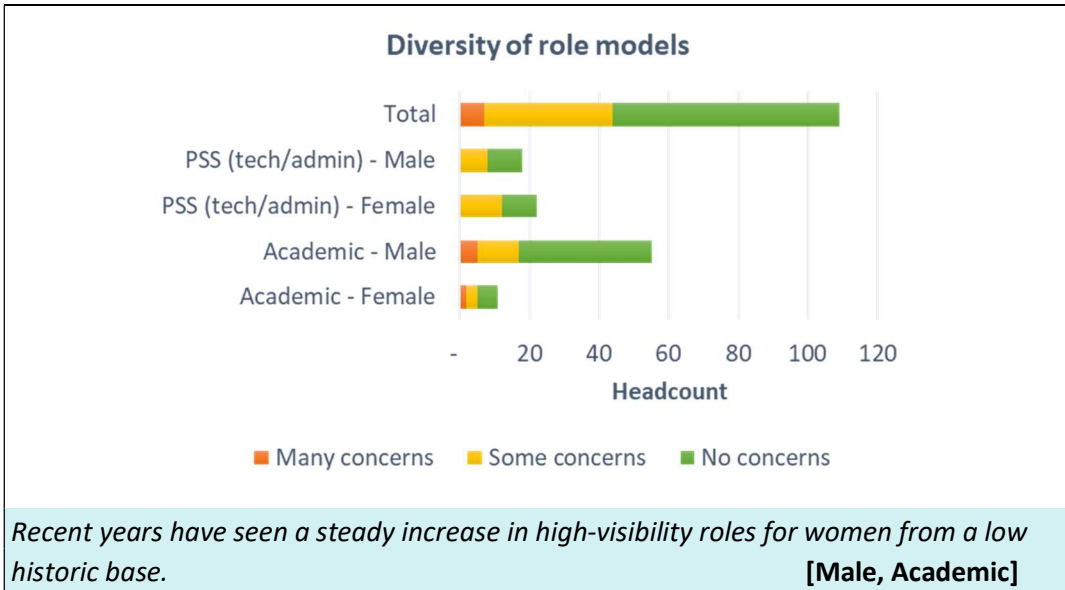
The principle of holding meetings and gatherings within core hours (10am-4pm) is long-standing, and has been consistently implemented since 2017. For meetings involving PT staff, days on which these meetings are scheduled are rotated to enable participation.

(vii) Visibility of role models

**IMPACT DELIVERED FROM AP2015**

In ASAS-2017 we asked staff if they had concerns about the diversity of role models in SoE. The response showed a broad spectrum of opinions but also awareness of ED&I issues among many staff.

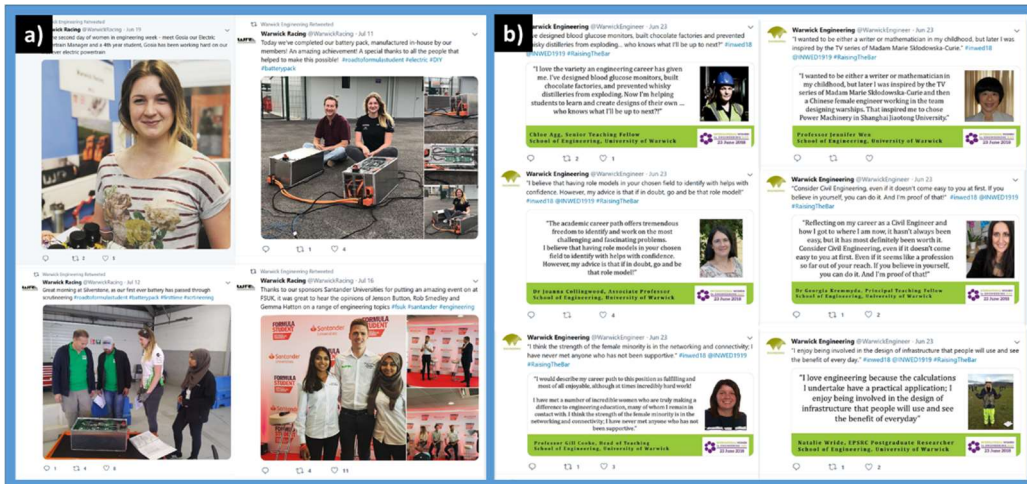




Under AP2015 SoE began monitoring gender diversity of taught and research degree external examiners. UG Exam Board is representative of sector (1F/3M) but review of external PhD examiner appointments revealed gender diversity at 8% in 2018. Following consideration at SMC, DSLs highlighted this to all academics encouraging greater diversity.

Our students are powerful role models, evidenced by the impact of our student ambassadors at Open Days (**Section 4.1\_ii**). The impact from visibility of role models at external events can be harder to quantify. One example is of Dr Collingwood (SAT-Chair) who was invited to address the Cardiff Scientific Society (24/01/2018). A school student in the audience was inspired by the talk to consider biomedical engineering, and subsequently introduced herself to Dr Collingwood when she and a parent travelled from Cardiff to attend the SoE 'Engineering Day' in March 2018.

**Figure 5.6\_vii:** Ongoing social media presence (e.g. @WarwickEngineer) highlights key national and local engineering initiatives and events, while also promoting students in areas where they are under-represented in the sector (e.g. women in automotive engineering): **a)** Warwick Racing UG project team featured in ‘Women in Engineering’ week, **b)** SoE female staff (Acad-FA5-FA9) describe what is special for them about an engineering career, #RaisingTheBar INWED2018 on 23<sup>rd</sup> June, profiles that were then shared on the internal visual display feeds in SoE throughout the summer.



**Figure 5.6\_vii:** Examples of female SoE staff and students as visible role models: a) Professor Emerita Wanda Lewis attending a ‘Women in Business’ summit ahead of b) delivering a keynote address at the 31st ICAT 2018 (Innovation in Construction, Asphalt and Transportation) Conference, April 2018, Peoria, USA, c) Hannah Koestler, UG student and Project Manager of the Warwick Submarine Team 2017-2018, a long-standing MEng group project where students design, build, and race a human-powered submarine in international competitions, d) Dr Georgia Kremmyda, DDL CEE, featured as a role model in the Women in STEM Installation at the Cheltenham Science Festival.



## FUTURE ACTION POINTS 2019

### **AP-2019-7.b Improve information and awareness of people and roles within the SoE to help improve communication and showcase diversity.**

- i. To display a photograph board of the Management Team in key areas including student areas.
- ii. Improve information on the intranet of post holders and role information in order for people to be able to find out who is responsible for different areas.

### **AP-2019-7.d Staff and students at Warwick are inspired by female engineers as role models, breaking down entrenched stereotypes.**

- i. Build on the initiatives and programmes of events from INWED18 to mark the WES Centenary.
- ii. Create a permanent display of plaques featuring the aspirations and achievements of a diverse range of inspirational engineers, including SoE staff, alumni, and others; individuals who have made significant contributions in the engineering sector.
- iii. Celebrate Women in Engineering Day with speaker (for 2019, WES centenary celebration hosting WES member Sally Friswell from Arup Engineering) about career and experiences in engineering to all staff, students and invited local secondary school pupils interested in STEM careers.
- iv. Sustain educational partnership with WES, with impact for staff recruitment and support for the Warwick WES student group, including national-level network building.
- v. Continue to support the Warwick WES Student group to expand their activities and impact.
- vi. Increase the number of female speakers from external companies to carry out placement talks to students, ensuring the proportion exceeds sector average.
- vii. Creation of multi-media clips of female staff and students on the SoE website.
- viii. Updating the 'Women in Engineering' leaflet for prospective students featuring current staff and students detailing their interest/success in the field.

(viii) Outreach activities

**IMPACT DELIVERED FROM AP2015**

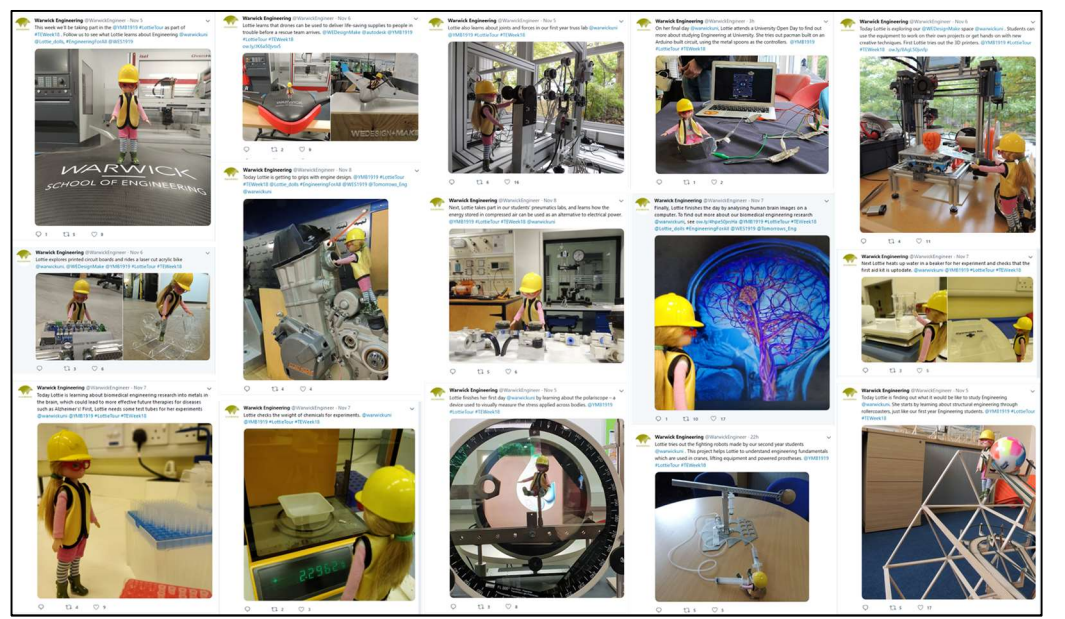
SoE-delivered initiatives reach target audiences (e.g. Inspire, **Figure 5.6\_viii\_a**) and general public (e.g. ‘Engineering Day’ hosted in SoE) in person. Initiatives requiring significant staff input are recognised in the workload model (academic)/role descriptors (PSS). Sustaining activity via social media (Facebook/Twitter) makes it possible for a broad spectrum of staff to be involved with minimal overhead (e.g. Lottie Tour, **Figure 5.6\_viii\_b**).

**Figure 5.6\_viii\_a:** Student experience on the Smallpeice Trust Residential Course on Humanitarian Engineering in July 2018, run in SoE for 55 Year 10/11 female students, 1/3 from widening participation backgrounds.

- 90%: Course increased their interest in engineering
- 92%: More aware of future careers and routes into engineering
- 92%: Persuaded to consider studying at university in the future.
- 63%: Persuaded to follow a career in humanitarian engineering.



**Figure 5.6\_viii\_b:** Participating in the national WES ‘Lottie Tour’ allowed us to Tweet Lottie’s investigations of our diverse research facilities in SoE to coincide with ‘Tomorrow’s Engineers Week November 2018’. Lottie is a WES Outreach initiative to engage young girls and boys to learn about what engineering careers might involve. The positive response on our Twitter feed confirmed it wasn’t only young children who were entertained by Lottie’s adventures...



SoE considers outreach and widening participation activity a priority and recently reviewed resource and management to ensure strategic support. The DoSR maintains oversight of the Outreach/WP Management Working Group [50/50 academic/PSS], membership is determined by role (presently 100% female), but gender diversity is evident in major event leadership [Acad-T&R-FA9 male initiated/ leads Engineering Day, Acad-T-FA8 female initiated/leads Smallpeice Trust]. Staff across all roles are involved in outreach, enabled by diversity of formats (e.g. social media), and a UoW academic promotion structure rewarding and encouraging engagement.

[Section 5.6 word count = 1600]

#### **FUTURE ACTION POINTS 2019**

##### **AP-2019-8.c SoE recognises and values Outreach work by staff and students.**

- i. Formalise a working group to discuss Outreach methods, management and opportunities who will report into the EDCW Committee.
- ii. A database bringing together staff and student outreach activity led by SoE to be created.
- iii. Create a dedicated area on the SoE site to promote Outreach activity.
- iv. Increased reporting and celebration of outreach activity across staff and student social media channels.

##### **AP-2019-8.d SoE to develop an unconscious bias project in collaboration with the Centre for Education Studies**

- v. Pilot work locally, scale up for regional/national impact if successful

#### **SILVER APPLICATIONS ONLY**

#### **6. CASE STUDIES: IMPACT ON INDIVIDUALS**

*Case studies removed to ensure anonymity*

## 7. FURTHER INFORMATION

### (i) Encouraging Gender Diversity in the International Biomedical Engineering community

**Dr Pecchia (SAT-member)** has, via his membership of the International Federation of Medical and Biological Engineering Woman in Biomedical Engineering (WiBME) Working Group, ensured IFMBE reviewed their documents and web pages, taking into account gender/sex/minority groups. This resulted in IFMBE committing to change their documents to use gender neutral language (e.g. using 'Chair' rather than 'Chairman'). Dr Pecchia also works proactively with IFMBE to improve gender balance of Working Groups and Divisions.

**Dr Rossana Castaldo (SAT-member since 2015)** is a former SoE PhD student, who with encouragement from her peers competed for several fellowships and won an ABTA Doctoral Researcher Award, commencing April 2018. Rossana has been a member of WiBME since attending their Working Group Meeting in Toronto, 2015 (**Figure\_7.2**). She is also a member of the IFMBE HTA Division since 2017. In 2018 Rossana gave an invited talk at the World Congress on Medical Physics and Biomedical Engineering Conference, in a special session on Women in Biomedical Engineering, entitled 'Athena SWAN: Promoting Equality and Diversity – The case of the School of Engineering University of Warwick'

**Figure\_7.2** Rossana Castaldo (front, far left) with the WiBME working group in Toronto.



### (ii) National and International Student Engagement

SoE female students are activity engaged as mentors in developing countries. Former SAT member Dr Sarah Chen (1<sup>st</sup> Class Civil Engineering 2016) is shown in **Figure\_7.3\_a** mentoring a fourteen-year-old African girl that had recently returned from maternity leave. Sarah herself has subsequently been recognised (**Figure\_7.3\_b**) in the 'WES Top 50 Returners 2018'. Ms Surya Rajan identified (**Figure\_7.3\_c**) a PGT-PGR pipeline barrier in India arising from lack of PGT-level experimental facilities, critical in STEMM disciplines. Subsequently Dr Rajan and colleagues applied to RAEng to develop an open-access 'virtual lab' resource, to enable students to engage online with a real-time experiment

run by volunteers. Wider initiatives to tackle this barrier will be proposed as an **INWES2018** topic.

**Figure\_7.3\_a)** Dr Sarah Chen mentoring, **b)** Dr Sarah Chen after receiving the WES Top 50 award in 2018, **c)** Ms Surya Rajan SoE PhD student giving a careers talk at Isabella Thoburn College, Lucknow, India, November 2017, where she spoke about her experience of moving to the UK for a PhD after completing her Masters of Science in India.



(iii) Supporting external UK organisations to embed work on gender diversity

#### Support available for people with caring responsibilities

In 2015-2016, Dr Joanna Collingwood (SAT-Chair) as an EPSRC-funded ECR engaged in dialogue with EPSRC Senior Management about potential provision for participants with caring responsibilities. A review by EPSRC culminated in clarification of support available, and a prominent position on a dedicated webpage providing information about support.

#### Recruiting and retaining female talent

In 2015-2018, Dr Joanna Collingwood (**SAT-Chair**) supported gender equality work at the Alzheimer's Society, as a Grant Advisory Board member:

1. Raising issues about maternity leave and retention of talent in formal discussion about revised Terms and Conditions for appointments to fellowships,
2. Identifying where UB might be influencing decisions (for example: recognition of leadership qualities)
3. Recognising where individuals are returning to research after a career break, making efforts to retain talent in these scenarios.

[Section 7 word count = 415]

#### FUTURE ACTION POINTS 2019

##### AP-2019-7.e SoE promotes the Athena SWAN agenda internationally

- i. Engagement with the international biomedical engineering community.
- ii. Develop sharing of best practice by SoE to serve as a beacon activity.
- iii. Update the Athena SWAN leaflet for dissemination at events.
- iv. Host ICWES-2018 Conference in 2020 at UoW.