ASSET 2016: experiences of gender equality in STEMM academia and their intersections with ethnicity, sexual orientation, disability and age
Summary report
Acknowledgements

The Royal Society, Royal Academy of Engineering, Royal Society of Biology and The Academy of Medical Sciences commissioned Equality Challenge Unit (ECU) to design and implement the 2016 version of the Athena Survey of Science, Engineering and Technology (ASSET).

This report was researched and written by Dr Amanda Aldercotte, Dr Kevin Guyan, Dr Jamie Lawson, Stephanie Neave and Szilvia Altorjai at ECU.

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The ECU team is grateful to the 5000 plus respondents who donated their time to complete the survey and the dedicated staff of the 43 institutions who engaged with the project, without whom this nationally representative sample would not have been possible.

Further information

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The Royal Society, Royal Academy of Engineering, Royal Society of Biology and The Academy of Medical Sciences commissioned Equality Challenge Unit (ECU) to design and implement the 2016 version of the Athena Survey of Science, Engineering and Technology (ASSET).

ASSET 2016 aimed to expand and enhance previous iterations of the survey (2003/04, 2006 and 2010) and assess the current state of the association between gender and experiences, expectations and perceptions of the workplace among academics in science, technology, engineering, mathematics and medicine (STEMM). Previous rounds of this survey in 2003/2004, 2006 and 2010 identified a number of areas in which female STEMM academics experience disadvantage, including: (i) the type, level and mode of their current contracts; (ii) their visibility and opportunities for promotion; and (iii) the allocation of desirable tasks, roles and resources.

ASSET 2016 provides new insight as it includes an in-depth examination of how gender differences vary across individual academic disciplines and subpopulations (eg for respondents with or without caring responsibilities). This approach and the addition of qualitative analyses allows ASSET 2016 to paint a more detailed picture of the current state of gender equality in STEMM academia.

ASSET 2016 appreciates that identifying with multiple underrepresented groups may confound or exacerbate the experience of gender inequality. These analyses are unique to ASSET 2016 as they describe the intersections between gender and four protected characteristics including ethnicity/race, sexual orientation, disability and age.
ASSET 2016 comprised of a national survey of STEMM academics in higher education and included six aspects related to working life, including:

- perceptions of gender equality
- recruitment
- job and career
- caring responsibilities, leave and career breaks
- training and leadership
- promotion and development

Equality and personal data were collected in a final monitoring section of the ASSET 2016 survey.

1.1 The sample

The final unweighted sample contained 4871 STEMM academics from 43 institutions in the UK, of which 2050 were male and 2821 were female. In order to ensure sample representativeness (UK STEMM academics), non-response weights based on the intersection of gender (male or female), ethnicity (BME or white) and field of study (Higher Education Statistics Agency [HESA] cost centres) were calculated using the HESA 2013-14 staff record. The final weighted sample size was 4869 respondents (2495 men, 2374 women) of which 639 identified as black or minority ethnic (BME), 305 self-identified as lesbian, gay or bisexual (LGB), and 862 reported having disclosed as disabled (see Table 1.1). Finally, to explore whether gender differences were particular to a certain age, respondents were categorised into three age groups: (i) 30 and under (401 respondents); (ii) 31–60 years old (3496 respondents); and (iii) 61 and over (925 respondents). Although these subsample sizes were sufficient for quantitative analyses, the number of respondents in the underrepresented groups were substantially smaller than those in the majority groups. This means that there were instances where a comparatively wider gap between male and female respondents in the underrepresented subsample is not statistically significant but a smaller difference between male and female respondents in the majority group is.
Table 1.1
Sample sizes by gender and protected characteristics

<table>
<thead>
<tr>
<th>Protected characteristic</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME</td>
<td>341</td>
<td>53.4</td>
<td>297</td>
</tr>
<tr>
<td>White</td>
<td>2154</td>
<td>50.9</td>
<td>2077</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-identified lesbian, gay or bisexual (LGB)</td>
<td>183</td>
<td>60.0</td>
<td>122</td>
</tr>
<tr>
<td>Self-identified heterosexual</td>
<td>2225</td>
<td>50.9</td>
<td>2143</td>
</tr>
<tr>
<td>Disability status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had not disclosed as disabled</td>
<td>2076</td>
<td>51.8</td>
<td>1934</td>
</tr>
<tr>
<td>Had disclosed as disabled</td>
<td>419</td>
<td>48.8</td>
<td>440</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 and under</td>
<td>158</td>
<td>39.4</td>
<td>243</td>
</tr>
<tr>
<td>31–60</td>
<td>1708</td>
<td>48.9</td>
<td>1788</td>
</tr>
<tr>
<td>61 and over</td>
<td>609</td>
<td>65.8</td>
<td>316</td>
</tr>
</tbody>
</table>

Similar to gender differences in the UK population (ECU 2016), female respondents in the ASSET 2016 sample were underrepresented in senior job positions (from professor to head/director of major academic area) and overrepresented in early career positions related to teaching (eg lecturer and teaching fellow) and research (eg research fellow, research assistant, post-docs, and clinical lecturer). For example, 17.6% of male respondents in the current sample were professors compared with only 8.8% of female respondents, whereas 10.0% of female respondents were in post-doc positions compared with 5.6% of male respondents. Correspondingly, female respondents also earned a lower salary (on average) and were more likely to hold part-time and fixed term contracts. As such, additional factors that are related to gender and respondents’ perceptions and experiences (eg current post, age, discipline) were included in the analyses where possible.
2 Perceptions of gender equality

Compared with female respondents, male respondents felt that their department was more committed to equality in that they were more likely to agree with statements like ‘in general, men and women are treated equally in my department’ and ‘my department is committed to promoting gender equality in STEMM.’

When asked about perceived gender differences in the allocation of tasks and resources, female respondents were more likely to report an advantage for men on items related to:

- professional development (eg receipt of mentoring, positive feedback from management, involvement in promotion decisions)
- markers of esteem (eg invitations to conferences, recognition of intellectual contributions)

In contrast, male respondents tended to report that they had not noticed a gender-related difference in the allocation of the above tasks and resources on average.

Respondents’ comments drew considerable attention to female academics’ reduced access to informal masculine networks and how this in turn impedes career progression. In addition, female respondents had more teaching, administrative and pastoral responsibilities compared with male respondents. This perceived imbalance in the distribution of responsibilities may be why female respondents also felt that it is significantly easier for a man to obtain a senior post in their department (while male respondents tended to say that it was the same for men and women) (Figure 2.1).
Among respondents who were aware of ECU’s Athena SWAN Charter, both genders tended to agree that these initiatives had a positive impact on the work environment in their department and institution as whole. However, within male respondents’ commentary, there was disagreement as to whether the Athena SWAN Charter is simply lip service or a necessary tool to correct gender imbalances.
2.1 Intersectional results

**Gender and ethnicity:** BME female respondents rated their department as being less committed to equality than white female respondents. BME female respondents also reported a greater advantage for men in the allocation of tasks and resources related to professional development and markers of esteem than white female respondents. Male respondents’ perceptions of gender equality differed by ethnicity as well: BME male respondents felt that men had less of an advantage in obtaining senior posts than white male respondents.

**Gender and sexual orientation:** Male and female respondents self-identifying as LGB reported a stronger advantage for men in the allocation of markers of esteem than respondents who self-identified as heterosexual. Additionally, female respondents self-identifying as LGB also thought that it was even easier for a man to obtain a senior post in their department than female respondents self-identifying as heterosexual (although both were greater than the average responses from male respondents self-identifying as heterosexual or LGB).

**Gender and disability:** Female respondents who had disclosed as disabled reported the strongest advantage for men in the allocation of professional development tasks and resources and markers of esteem, over and above male respondents who had disclosed as disabled and non-disabled respondents of both genders; this difference was not present among male respondents.

**Gender and age:** Although female respondents rated the allocation of tasks related to professional development as biased towards men in all three age categories, female respondents who were 61 and over reported the strongest bias towards men of all respondents.
3 Recruitment

Although the majority of male and female respondents obtained their current post through an external application (68.8% and 70.7%, respectively), the proportion of male respondents (13.5%) who had been formally promoted to their current post was significantly larger than the proportion of female respondents who had been promoted (9.1%).

Of those respondents who were interviewed for their current position, 67.6% reported that there were more men than women on their interview panel. Respondents’ comments highlighted the impact of this imbalance as the gendered behaviours displayed can create a negative first impression for potential staff. However, establishing balance may also be at the expense of female academics as increasing women’s presence on interview panels means less time for them to spend on career development.

Finally, factors related to the quality of life in the department (e.g., flexibility of hours, work/life balance offered) carried more weight for female respondents in their decision to take their current post than for male respondents. Female respondents were also more likely to factor in the department’s commitment to equality in deciding to take a post, with the most influential item being whether the department or institution had an Athena SWAN award.
3.1 Intersectional results

**Gender and ethnicity:** The proportion of white male respondents (12.8%) who obtained their current post through formal promotion was significantly larger than the proportion of white female respondents (8.4%) who were recruited this way; in contrast, the difference in the proportion of BME male and female respondents who were formally promoted (17.0% and 14.1%, respectively) was not statistically significant.

**Gender and sexual orientation:** Many of the statistically significant gender differences in recruitment identified in the full sample were not present among male and female respondents self-identifying as LGB. For instance, male and female respondents self-identifying as LGB were similarly likely to have been formally promoted (15.1% and 9.7%, respectively) or invited/nominated for their current post (8.1% and 12.4%, respectively). In addition, respondents self-identifying as LGB rated the quality of working life and their department’s commitment to equality as more influential in their decision process than respondents self-identifying as heterosexual.

**Gender and disability:** Compared with male respondents who had not disclosed as disabled (15.3%), a significantly smaller proportion of male respondents who had disclosed as disabled were nominated for their current post (11.3%). The gender difference in what factors influenced respondents’ decision to take up their current post remained regardless of disability status, suggesting that female respondents who had and had not disclosed as disabled had similar experiences in this aspect of working life.

**Gender and age:** With regards to the gender composition of interview panels, the significant gap between male and female respondents remained present in all three age groups; however, this difference was particularly pronounced in respondents that were aged 30 and under as well as 61 and over.
4 Job and career

On average, male respondents viewed their departments as (i) more supportive; (ii) transparent and fair; and (ii) placing greater value on teaching than female respondents. Nonetheless, with regard to the factors that promote career progression, both genders felt that the most beneficial factors were those associated with having an esteemed reputation such as being in well-regarded research projects, having successful grant applications, and producing substantial research output.

However, male respondents spent more time on research-related tasks on average than female respondents. Instead, female respondents spent significantly more time on teaching and other academic duties (e.g., administrative and pastoral tasks). This difference in how male and female academics distributed their time not only means that male respondents were more likely to be working on the research-related tasks deemed beneficial to career progression but also that female respondents may have faced a double negative in this regard; both genders said that having a heavy teaching load and heavy administrative workload are the most detrimental factors in academic career progression.

Not surprisingly, female respondents described their department as more demanding of their time and effort than male respondents. Comments from female respondents addressed how the academic culture of long working hours may have an indirect gendered effect on career progression because of caring responsibilities.

Finally, respondents were asked to rate the impact of a number of factors on their own career progression as well as how they felt these factors would impact the average academic career. On average, female respondents felt that their sex (i.e., being a woman) and having caring responsibilities had negatively impacted their own career progression (Figure 4.1), while male respondents tended to say that being a man or having caring responsibilities had not affected their career.
Figure 4.1
Factors influencing respondents’ academic careers by gender

<table>
<thead>
<tr>
<th>Factor</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.82</td>
<td>4.05</td>
</tr>
<tr>
<td>Sexual orientation</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.99</td>
<td>4.00</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.99</td>
<td>4.01</td>
</tr>
<tr>
<td>Marital/civil status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.95</td>
<td>4.04</td>
</tr>
<tr>
<td>Disability status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.95</td>
<td>4.00</td>
</tr>
<tr>
<td>Religious beliefs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.98</td>
<td>4.00</td>
</tr>
<tr>
<td>Caring responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.52</td>
<td>3.92</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.74</td>
<td>3.80</td>
</tr>
<tr>
<td>Gender identity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.80</td>
<td>4.04</td>
</tr>
</tbody>
</table>
Importantly, these gender differences were also present in respondents’ ratings of the average academic career. Female respondents rated the impact of being a woman on the average academic negatively while male respondents tended to rate this item neutrally. Although male respondents felt that not having children or other caring responsibilities would be beneficial for the average academic career in general, female respondents were significantly more positive about how a lack of caring responsibilities would benefit the average academic. The consistency in female respondents’ negative ratings across both their own and the average academic career, and how these conflicted with the neutrality of male respondents’ ratings, underscores the impact of gender in academic career progression in the STEMM sciences.

4.1 Intersectional results

**Gender and ethnicity:** BME female respondents were the least likely to be in a senior position; for example, only 1.1% of BME female respondents were the head of their school, division or department, compared with 3.1% of white female respondents, 6.6% of BME male respondents and 7.0% of white male respondents. Compared with all other groups, BME female respondents were the least positive in their ratings of (i) their department’s supportive environment; (ii) the fairness of the allocation of resources in their department; and (iii) the impact of protected characteristics (including gender and ethnicity) on the average academic career.

**Gender and sexual orientation:** Female respondents self-identifying as LGB were underrepresented at the professor level (3.0%) compared with 8.8% of male respondents self-identifying as LGB, 9.1% of female respondents self-identifying as heterosexual, and 18.3% of male respondents self-identifying as heterosexual. Women self-identifying as LGB also rated the impact of their own sex on their careers the most negatively of all four subgroups. However, there were no differences in how respondents self-identifying as LGB or heterosexual rated life in their current department.

**Gender and disability:** Compared with respondents who had not disclosed as disabled, respondents who had disclosed as disabled (i) spent more time on teaching and less time on research; and (ii) were less likely to feel supported by their department. Female respondents who had disclosed as disabled also rated the impact of their own
sex on their career more negatively than female respondents who had not disclosed as disabled, but this difference in ratings was not present among male respondents regardless of disability status.

**Gender and age:** The gap between male and female respondents’ ratings of fairness and transparency in their department was significantly greater in respondents that were 31–60 years old and 61 and over. This gender difference was not present in respondents that were 30 and under, but male respondents in this age group had the lowest average summary score of their department’s demands on their time and effort compared with all other age and gender subgroups.

### 5 Caring responsibilities, leave and career breaks

Overall, a significantly larger proportion of female respondents (36.7%) had taken parental leave (i.e., maternity, paternity, additional paternity, adoptive, shared parental or unpaid parental leave) compared with the proportion of male respondents who had taken this form of leave (25.5%).

Importantly, there were a number of disadvantages in areas affecting career progression that were specific to female respondents who had taken parental leave. In general, female respondents who had caring responsibilities were less likely to:

- be able to relocate for a new post if needed
- feel involved in the social life of their department
- have their work successes celebrated in their department
- feel supported by their partner or family.

Female respondents who had taken parental leave found that flexible working hours and keeping in touch (KIT) days were the most helpful options in preparing them to return to work available in their department. Although female respondents felt less prepared to return from parental leave than male respondents in general (Figure 5.1), female respondents who were provided with information on these options before going on parental leave tended to feel more prepared to return to work than female respondents who had not previously received this information.
Figure 5.1
Ratings of feeling prepared to return from parental leave by gender

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely underprepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6.9%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Underprepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>11.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Somewhat underprepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>16.5%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13.4%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Somewhat prepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>32.9%</td>
<td>13.2%</td>
</tr>
<tr>
<td>Prepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>23.8%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Male</td>
<td>17.0%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Extremely prepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>5.4%</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>19.0%</td>
<td></td>
</tr>
</tbody>
</table>
Feeling prepared to return to work had important implications: female respondents who were prepared to return from parental leave rated the negative impact of caring responsibilities on their own career less severely than female respondents who felt less prepared to return to work.

Similar to caring for children, the proportion of female respondents who indicated that they were a carer for another adult (7.2%) was significantly larger than the proportion of male respondents in this role (4.5%). Remarkably, the sentiments expressed by respondents caring for another adult overlapped considerably with the negative expressions made by respondents caring for children.

Finally, compared with the proportion of male respondents (7.7%), a larger proportion of female respondents (10.8%) had taken career breaks (defined as a period of leave following a resignation or end of a contract that does not include periods of parental or sick leave). Female respondents’ career breaks tended to be longer than male respondents’ which was in turn related to finding it more difficult to return to work after a career break and feeling that the career break had a more negative impact on career progression. However, a comparison of respondents who had taken a career break and those who had taken both a career break and parental leave suggested that the negative impact of career breaks reported by female academics were associated with caring responsibilities rather than taking a break per se.
5.1 Intersectional results

**Gender and ethnicity:** Among white and BME respondents alike, the majority of those who had taken parental leave were women (58.1% and 64.1%, respectively). However, while all respondents found KIT days and flexible working hours to be the most helpful in facilitating one’s return from parental leave, white female respondents were more likely to have access to these two options compared with BME female respondents.

**Gender and sexual orientation:** A larger proportion of those taking parental leave were women, regardless of whether they self-identified as heterosexual (58.2%) or LGB (64.1%). Notably, having flexible working hours upon return from parental leave was rated as the most helpful option across each subgroup.

**Gender and disability:** The majority of respondents taking parental leave were women, regardless of whether they had or had not disclosed as disabled (64.6% and 58.1%, respectively). With regard to returning from parental leave, disabled respondents reported similar levels of access to options and resources as respondents who did not disclose as disabled.

**Gender and age:** The proportion of male respondents aged 31–60 years who had taken parental leave (31.1%) was significantly larger than the proportion of male respondents who were aged 61 and over who had taken parental leave (10.4%), but this age difference was not present among female respondents. As found across the overall sample, within both age groups, KIT days and flexible working hours were rated as the most helpful options.

6 Training and leadership

Of the 10 training areas listed in the ASSET 2016 survey, the only one that male respondents did not have more experience in than female respondents was teaching (Figure 6.1).
Figure 6.1
Training opportunities by gender

Admin related to management
Female
Male

Postgraduate supervision
Female
Male

Leadership
Female
Male

Professional development
Female
Male

Grant application skills
Female
Male

Teaching
Female
Male

Project/financial management
Female
Male

Equality and diversity (students)
Female
Male

Equality and diversity (staff)
Female
Male

Unconscious bias
Female
Male
6.1 Intersectional results

Of particular note were the significant gender gaps in training on administrative tasks related to management, grant application skills, project planning and financial management given their relevance for developing skills as a researcher and obtaining more senior positions.

This imbalance in training opportunities was mirrored by a similarly striking imbalance in the number of barriers to training reported by female respondents. Compared with male respondents, a larger proportion of female respondents reported that contextual barriers to training, such as those related to time, money, availability, relevance and eligibility, had prevented them from accessing training that they needed or wanted in the last 12 months. Female respondents were also more likely to report not being able to access training opportunities because of an unsupportive line manager and caring responsibilities.

**Gender and ethnicity:** BME female respondents (9.4%), white female respondents (6.6%) and BME male respondents (6.0%) were more likely to report having had an obstructive or unhelpful line manager block their access to training than white male respondents (3.7%). More BME respondents experienced their ethnicity, gender identity and accent or language skills as barriers to training compared with white respondents, regardless of their gender.

**Gender and sexual orientation:** The proportion of female respondents self-identifying as LGB (14.2%) who had experienced an obstructive or unhelpful line manager was significantly larger than the proportion of female respondents self-identifying as heterosexual (6.4%). Comparatively, the proportions of female respondents self-identifying as LGB reporting that their marital or civil status (2.7%) or their disability status (3.5%) had blocked their access to training in the last 12 months were larger than the proportions of female respondents self-identifying as heterosexual reporting these experiences (0.0% and 0.1%, respectively). Conversely, the proportions of male respondents who had encountered these training barriers did not differ significantly, regardless of sexual orientation.

**Gender and disability:** Although respondents’ gender was the strongest factor in explaining why some had received more training or experienced more barriers than others, there were a number of training barriers that were more likely to impact those who had disclosed as disabled, including age, sex, dress/appearance, an
unsupportive line manager, the training not being relevant to their post or not being offered in their institution, than those who had not disclosed as disabled.

**Gender and age:** Looking at the total training barriers experienced (i.e., the total scores summed across the 18 barriers listed) revealed a striking pattern: the total number of barriers encountered tended to decrease across the age groups for male respondents but not female respondents. Moreover, the total number of training barriers experienced by female respondents who were 31–60 years old was greater than male respondents in any age group.

### 7 Promotion and development

A significantly larger proportion of male respondents (59.7%) were encouraged or invited to apply for a promotion or post at a higher grade compared with female respondents (48.8%), whose comments revealed that in some cases senior colleagues had even discouraged them from applying for promoted roles.

Compared with female respondents, male respondents were also more likely to enjoy:

- a formally assigned mentor that they see regularly
- the opportunity to serve on important departmental committees
- feeling that their department values their research
- feeling that their department values their external professional activities
- having sufficient administrative experience
- access to senior departmental staff
- having a supportive line manager

In their commentary, a number of respondents noted that men are more likely to possess many of the characteristics associated with promotion, such as having the confidence to apply for a post slightly beyond their current capabilities or being comfortable with taking ownership of one’s accomplishments. This combination of external encouragement and internal characteristics may be why men are more likely to obtain higher posts in the STEMM sciences.
Despite male respondents feeling that their department encouraged and supported their career development, female respondents had a stronger desire to obtain a senior management post in their institution. Surprisingly, this gender difference persisted even when other factors, including respondent’s age, current post, ability to relocate if needed, and previous invitation to apply for a promotion were taken into account, suggesting that regardless of their current situation, female academics possess a stronger desire to climb the academic career ladder than male academics. However, this difference in male and female respondents’ desires did not parallel differences in their expectations and the majority of both genders disagreed with the statement ‘I expect to obtain a senior management post in my institution’ or rated it neutrally (ie neither agreed nor disagreed).

Finally, there were no gender differences in the proportions of male (3.9%) and female respondents (4.0%) who indicated that they did not want to continue a career in STEMM. Instead, the gender difference lay in whether or not they desired to remain in higher education, with the proportion of female respondents (7.4%) wanting to remain in STEMM but leave higher education being significantly larger than the proportion of male respondents (5.4%) reporting this intention.

### 7.1 Intersectional results

**Gender and ethnicity:** Less than half of BME female respondents had been directly encouraged or invited to apply for promotion (47.8%), compared with 48.6% of BME male respondents, 49.0% of white female respondents, and 61.5% of white male respondents. BME female respondents were also the most likely to feel that they had an unsupportive line manager and that senior department staff were inaccessible to them. Significantly fewer BME male respondents (85.7%), BME female respondents (88.7%), and white female respondents (88.5%) said that they would like to continue their careers in STEMM in higher education compared with the proportion of white male respondents (91.5%) reporting this intention.
Gender and sexual orientation: A significantly larger proportion of male respondents self-identifying as heterosexual (60.3%) reported being encouraged or invited to apply for promotion compared with male respondents self-identifying as LGB (53.4%), female respondents self-identifying as LGB (47.9%) and female respondents self-identifying as heterosexual (48.8%). However, the majority of differences in how encouraged respondents felt and their plans for their future careers were related to gender rather than sexual orientation, suggesting that the above advantage for male respondents self-identifying as heterosexual may not be present across all aspects related to career development and promotion.

Gender and disability: Regardless of respondents’ disability status, male respondents were significantly more likely to have been encouraged or invited to apply for promotion than female respondents. However, respondents who had disclosed as disabled were less likely to feel that their department supported and encouraged their career development across a number of areas, compared with respondents who had not disclosed as disabled. Importantly, the proportion of respondents who had disclosed as disabled that did not want to continue a career in STEMM was twice as large as the proportion who had not disclosed as disabled (6.7% and 3.3%, respectively), regardless of gender.

Gender and age: Across all three age groups, male respondents were more likely to have been encouraged or invited to apply for promotion than female respondents, but this gap was widest amongst respondents who were 31–60 years old. Among those respondents who were 31–60 years old, 6.2% of female respondents said that they wanted to continue their careers in STEMM but outside higher education compared with 4.2% of male respondents.
8 Recommendations

The following recommendations are driven by respondents’ reported experiences of gender equality and reinforced by their description of these experiences in the open-ended questions of the ASSET 2016 survey. While these recommendations are phrased in terms of alleviating the discrepancies in male and female STEMM academics’ experiences, many could be adapted or used as a starting point for addressing other imbalances, such as those related to the intersections between gender and ethnicity, sexual orientation, disability and age identified in this report.

- Assign mentors or develop mentoring programmes for all staff that can help academics in early career posts to increase their visibility and progress their career development. Ensure all staff have access to such programmes and opportunities to be a mentor or mentee as appropriate.

- Ensure academic contracts can accommodate the flexible working policies that will support staff through changing circumstances to deliver personal and institutional academic objectives. These policies could include limitations on working into the evening or on weekends.

- Establish an appropriate balance in the distribution of teaching and administrative duties and set budget (time and money) for training programmes. Female academics in the current sample frequently cited lack of available time and money as a reason for not attending training.

- Promote development of supportive and career progressing networks, and ensure all staff have opportunities to engage with senior departmental staff and important departmental committees, which may in turn enable access informal circles and involvement in the social life of the department.

- Put in place options to help staff return to work after leave for caring responsibilities. Improving the transition back to work from parental leave could help mitigate the negative impact of caring responsibilities on female academics’ career progression revealed in this report. Women’s disproportionate caring responsibilities were a common finding in a number of the gender differences identified in this report. Out of the 11 options meant to help academics
return from parental leave, nine were not available to the majority of respondents, regardless of gender, despite some being relatively simple to offer (ie allowing academic staff returning from parental leave to have a lower teaching or administrative load initially, or to begin part-time and work toward being full-time).

= Explore options to offer analogous leave to staff caring for another adult as is offered to staff caring for children. Respondents’ commentary in the current report identified the need for flexibility in working hours and workload options available to parents to be similarly available to carers.

= Acknowledge the need to work long hours and the issues for career progression that arise from this culture, as this was highlighted as a limiting factor by respondents throughout the ASSET 2016 survey. Implement work allocation models championed by Athena SWAN and the Race Equality Charter to manage scheduling of meetings and duties and ensure that this is compatible with external responsibilities.

= Investigate whether the perceived gender imbalance in the allocation of teaching responsibilities uncovered in this report exists in individual institutions and whether allocations are optimal for staff delivery and development overall. This may be an important aspect for departments and institutions to monitor as the teaching excellence framework and increasing student fees are changing the demands and evaluation of teaching.

= Make certain that promotion criteria include a specific focus on the quality of an applicant’s work as well as their performance in other academic areas (eg teaching, pastoral and administrative duties). Additional actions to promote balance in promotion and development include monitoring the association between workload and promotion in departments; providing staff with workshops on the promotion process; and using case studies of individuals who have been successfully promoted while working part-time as potential role models.
Evaluate performance in line management and guard against variability in the amount and type of support provided to academic staff by:

- Ensuring that line management duties are evenly distributed (e.g., that the head of department is not line managing all of the department’s academic staff).

- Supporting the development of staff’s line management skills and integrating training on both practical tasks, such as how to conduct appraisals and allocate work, with formal training on inclusive management practices (e.g., unconscious bias and equality and diversity training designed to increase line managers’ sensitivity towards issues such as those surrounding disability and caring responsibilities).

- Motivating line managers to prioritise these duties by increasing the accountability of line managers and adding incentives or rewards for being a good line manager.
Equality Challenge Unit (ECU) supports higher education institutions across the UK and in colleges in Scotland to advance equality and diversity for staff and students.

ECU provides research, information and guidance, training, events and Equality Charters that drive forward change and transform organisational culture in teaching, learning, research and knowledge exchange. We have over ten years’ experience of supporting institutions to remove barriers to progression and success for all staff and students.

ECU believes that the benefits of equality and diversity and inclusive practice are key to the wellbeing and success of individuals, the institution’s community, the efficiency and excellence of institutions, and the growth of further and higher education in a global environment.

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