

# Diversity data report 2020

***Diversity data report 2020***

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# Contents

Introduction .....	4
The Fellowship .....	9
Committees, panels and working groups .....	18
Research Fellowship Grants .....	27
Publishing .....	40
Royal Society staff .....	46
Gender pay gap .....	49
Definitions .....	51

# Introduction

The Royal Society is a Fellowship of many of the world's most eminent scientists and is the oldest scientific academy in continuous existence.

The Society is committed to increasing diversity in science, technology, engineering and mathematics ('STEM') by seeking out participation from under-represented groups, in order to build and develop a world in which studying and working in science are open to all.

As part of the ongoing diversity programme agreed by the Council of the Royal Society, diversity data is gathered and analysed in relation to the Society's activities.

This data report covers diversity in relation to the Society's activities in the calendar year 2020 unless otherwise specified, including election to the Fellowship, early career research fellowships, publishing, committee participation, and Royal Society staff. It does not include data on public event and scientific meeting attendance, or the Society's schools engagement programme, following the implications of the COVID-19 pandemic on the Society's activities, which meant that many events and scientific meetings had to be cancelled, postponed or moved online. Where events were held online by the Society during the second half of 2020, the response to the diversity monitoring survey was not high enough to be a robust representation of the audience at those events. Consequently, data for public events and scientific meetings has not been included in this year's report.

Where there is national statistical data available that can provide a comparative context for sections of the report, such data has been included in those sections.

The Society has published new reports using Higher Education Statistics Agency ('HESA') data that provide additional comparator data in respect to disability and ethnicity of STEM staff and students in higher education and of the pool of prospective applicants for the Society's early career fellowship programmes. This data has been used to provide wider context for the Society's own data.

The next data report, covering diversity across the Society's activities in 2021, will be published in 2022.

## Data collection

Data is collected via a variety of methods, including online surveys and as part of registration or application to a programme. The method of collection for each activity is set out in the relevant section.

In February 2021, the Fellowship, Committees, working groups and Editorial Boards, authors and reviewers of journals in 2020 were invited to complete a diversity survey. A total of 43,741 people were contacted, of which 8,505 completed the survey (19%). This represents an increase from 14% in 2019.

The categories used to group age data vary across sections of this report due to differences in how data is collected. The Society will be looking at ways to standardise the collection and reporting of age data in future.

The questions used on the Society's annual diversity monitoring survey will be updated to reflect the changes to questions on the 2021 UK Census.

### Data analysis

#### Trend analysis

Trend analysis has been included in sections of the report where the pool of respondents is large enough for the analysis to be carried out without the risk of individuals being identifiable from the results, in order to show how the proportion of individuals in different groups has changed over time.

#### Year-on-year comparison

Throughout the report, comparative analysis with previous years' data has been included to show differences over time. This is focused on the changes in the proportion of individuals within each group, shown as percentages, rather than the number of individuals. This is because changes to the number of individuals within a particular group may be influenced by several factors, such as the size of the overall pool. Increases or decreases in proportion are a more robust indication of changes to the diversity of a particular group.

#### Statistical significance

Statistical significance tests have been carried out on the data in this report for the first time. Statistical significance testing is used to quantify the probability of an observed difference occurring 'by chance'. More precisely, the p-value is the probability of observing a difference as extreme or more extreme than what would be observed if in fact there were no true underlying change. If a difference in proportion is statistically significant (for example associated with a low p-value), this suggests that it is unlikely to have occurred by chance; whether the difference is practically meaningful depends not only on its statistical significance

but also on its estimated magnitude. Further detail on the statistical tests carried out within this report is included on page 54.

### Declarations

The contents of this report are based on data that is explicitly and voluntarily declared by respondents. Whilst the Society's online data collection methods make completion of the questions on the diversity form mandatory, all questions contain an option of 'prefer not to say' and not all respondents choose to provide their diversity information. Where applicable, individuals who have chosen 'prefer not to say' or not answered a question at all are excluded from this report.

In the instances where a data set is too small to be meaningfully representative, or there is the risk that an individual might be identifiable from the data, it has been excluded from the report (for example, individuals who identified their gender as non-binary).

Regarding ethnicity, the Society's diversity monitoring form includes 17 options for respondents to select, including 'prefer not to say'. These options are aligned to those in the ethnicity question that was included on the UK Census in 2011 and will be updated to reflect the ethnicity question on the UK Census in 2021. The response data is amalgamated into broad categories in this report, as the responses for some categories are too small to report individually. The Society recognises that it would be beneficial to report more detailed ethnicity data and will aim to do so in future.

The table below summarises what is included in each section of the report, the source of each data set, any relevant benchmarks used, and the limitations of each data set.

## The Fellowship

<b>Data included in this report</b>	Age, gender, ethnicity and disability data for Fellows and Foreign Members in 2020.  Age and gender trends over the last six years.
<b>Source</b>	Age and gender data is recorded when new Fellows are elected.  Ethnicity and disability data is collected through the annual diversity survey.
<b>Benchmark</b>	Diversity of STEM professors in the UK (based on HESA data, analysed by Jisc for the Royal Society).
<b>Limitations</b>	Age data for Fellows and Foreign Members indicates their current age. Because Fellows and Foreign Members are elected for life, this data is not indicative of their age when they were elected.  The data does not include 'prefer not to say' responses.  There is no robust benchmark that could be used to compare the diversity of the Fellows and Foreign Members who are not professors.

## Committees, panels and working groups

<b>Data included in this report</b>	Age, gender, ethnicity and disability data for members of Royal Society committees (including panels and working groups), grants committees and Editorial Boards.
<b>Source</b>	Annual diversity survey.
<b>Benchmark</b>	None.
<b>Limitations</b>	The data does not include 'prefer not to say' responses.  The results reflect only those members who responded to the annual diversity survey. The data is therefore a self-selecting sample and not representative of all committee, panel, working group and Editorial Board members.

## Research Fellowship Grants

<b>Data included in this report</b>	<p>Amalgamated gender, ethnicity and disability data for applicants and awards to the following schemes:</p> <ul style="list-style-type: none"><li>• Dorothy Hodgkin Fellowship</li><li>• Industry Fellowship</li><li>• Sir Henry Dale Fellowship</li><li>• Newton International Fellowship</li><li>• University Research Fellowship</li><li>• Royal Society Wolfson Fellowship</li></ul>
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<b>Source</b>	Collected via the Society's grant application system, Flexi-Grant®, when an individual applies for a Research Fellowship.
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<b>Benchmark</b>	Comparative analysis on the diversity of postdoctoral researchers eligible to apply for the Society's early career fellowships, carried out by the Careers Research and Advisory Centre on behalf of the Society.
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<b>Limitations</b>	<p>The data does not include 'prefer not to say' responses.</p> <p>Diversity data for all six schemes has been amalgamated in order to avoid individuals being identifiable.</p>
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## Publishing

<b>Data included in this report</b>	Age, gender, ethnicity and disability data for authors and reviewers of the Society's ten journals.
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<b>Source</b>	Annual diversity survey.
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<b>Benchmark</b>	None.
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<b>Limitations</b>	<p>The data does not include 'prefer not to say' responses.</p> <p>The results reflect only those authors and reviewers who responded to the survey. The data is therefore a self-selecting sample and not representative of all authors and reviewers.</p> <p>In 2020 there were 39,690 authors and 9,875 reviewers, making a total of 49,565. However, an individual may be both an author and a reviewer so the number of distinct individuals may be lower than this.</p>
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## Staff

<b>Data included in this report</b>	Age, gender, ethnicity and disability data for Royal Society staff.
<b>Source</b>	Age and gender information is collected via the Society's staff HR portal, ADP. Ethnicity and disability data were collected in January 2021, via a 'snapshot' diversity survey.
<b>Benchmark</b>	None.
<b>Limitations</b>	The data does not include 'prefer not to say' responses. The ethnicity and disability data reflect only those staff who responded to the survey. This data is therefore not representative of all Royal Society staff.

## Gender pay gap

<b>Data included in this report</b>	The differences between the mean and median earnings of women and men across all roles at the Royal Society.
<b>Source</b>	Society payroll data.
<b>Benchmark</b>	UK national average mean and median gender pay gap.
<b>Limitations</b>	The data reflects the pay gap as at 5 April 2020.

# The Fellowship

The Royal Society is a self-governing Fellowship of distinguished scientists drawn from all areas of science, technology, engineering, mathematics and medicine.

In 2020, there were 1,515 Fellows and 185 Foreign Members, including around 85 Nobel Laureates. 52 Fellows were elected from 714 candidates proposed by the existing Fellowship, and 10 Foreign Members were elected from 74 candidates. Fellows and Foreign Members are elected for life through a peer review process on the basis of excellence in science.

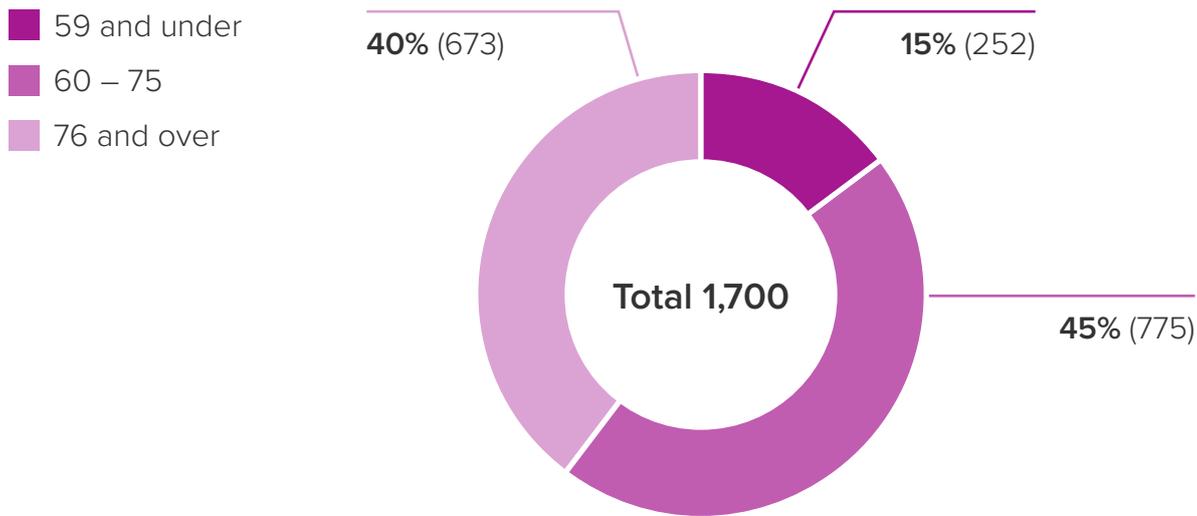
Data on the age and gender of Fellows and Foreign Members is recorded when individuals are elected to the Fellowship. The age and gender data below includes both Fellows and Foreign Members and is based on information provided by Fellows and Foreign Members at the time of their election. In relation to age, the data below indicates the current age of Fellows and Foreign Members. Because Fellows and Foreign Members are elected for life, this data is not indicative of their age when they were elected. Trend data on average age at election is shown separately in the report.

In each chart, the proportion of Fellows and Foreign Members in each category is given in percentages, with the number of individuals in each category in brackets. Fellows and Foreign Members who preferred not to provide their diversity data have been excluded from these figures.

Data on the diversity of professors in STEM in the UK is provided in this section, in order to provide comparative context. This comparative data is drawn from analysis of Higher Education Statistics Agency ('HESA') data, carried out by Jisc on behalf of the Royal Society. Whilst this is not a perfect comparator, it does give an indicator of the diversity of a group from which a significant proportion of the Fellowship is elected.

Comparisons are made in this section with the proportion of Fellows and Foreign Members in each category in 2019. In 2020, 50% (854) of Fellows and Foreign Members completed the annual diversity survey, compared to 49% (836) of Fellows and Foreign Members who completed the survey in 2019. Consequently, neither data set can be interpreted as representative of the whole Fellowship and caution should therefore be taken when making comparisons between the two years.

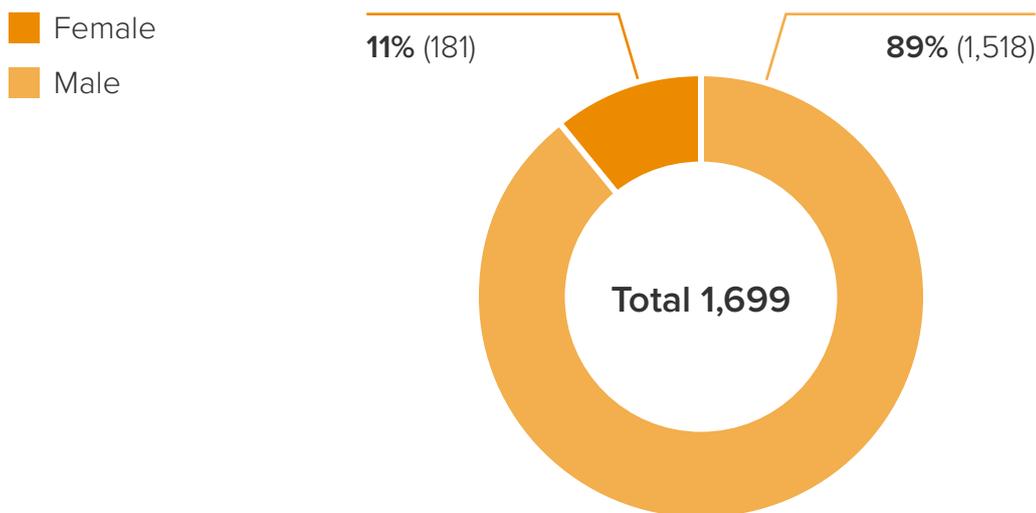
## Fellows and Foreign Members – age



In 2020, 15% of the overall Fellowship, comprising Fellows and Foreign Members, was aged 59 and under (252 individuals), compared to 14% (244 individuals) in 2019. The proportion of the Fellowship aged between 60 and 75 was 45% in 2020 (775 individuals), compared to 46% (775 individuals) in 2019. 40% of the Fellowship (673 individuals) was aged 76 and over, compared to 40% (667 individuals) in 2019.

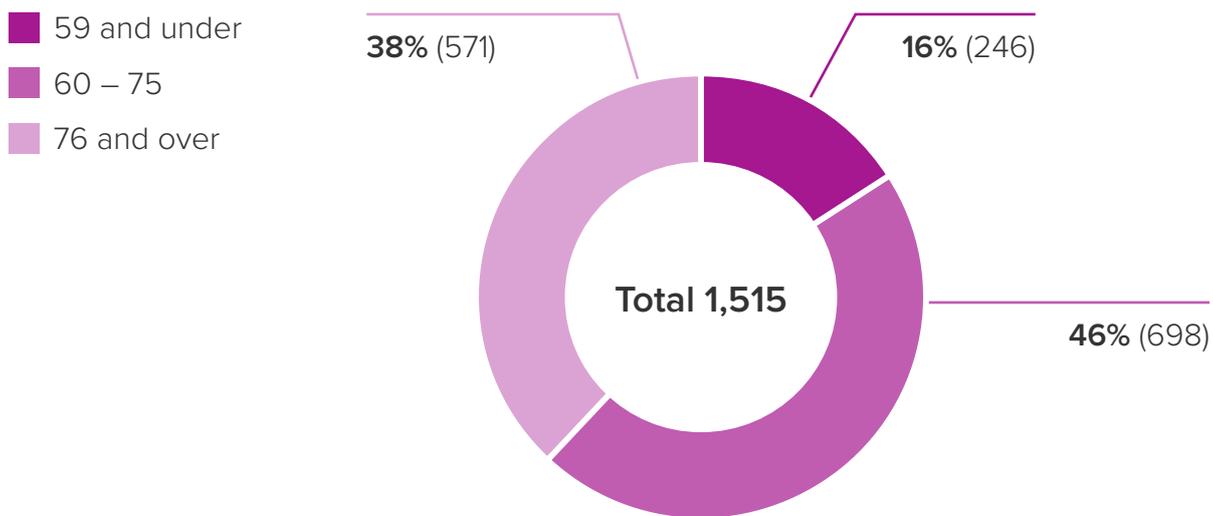
In relation to age, the data above indicates the current age of Fellows and Foreign Members. Because Fellows and Foreign Members are elected for life, this data is not indicative of their age when they were elected.

## Fellows and Foreign Members – gender



In 2020, 11% of the overall Fellowship, comprising Fellows and Foreign Members, was female (181 individuals) and 89% was male (1,518 individuals). The proportion of the Fellowship that is female has increased slightly from 10% (170 individuals) in 2019.

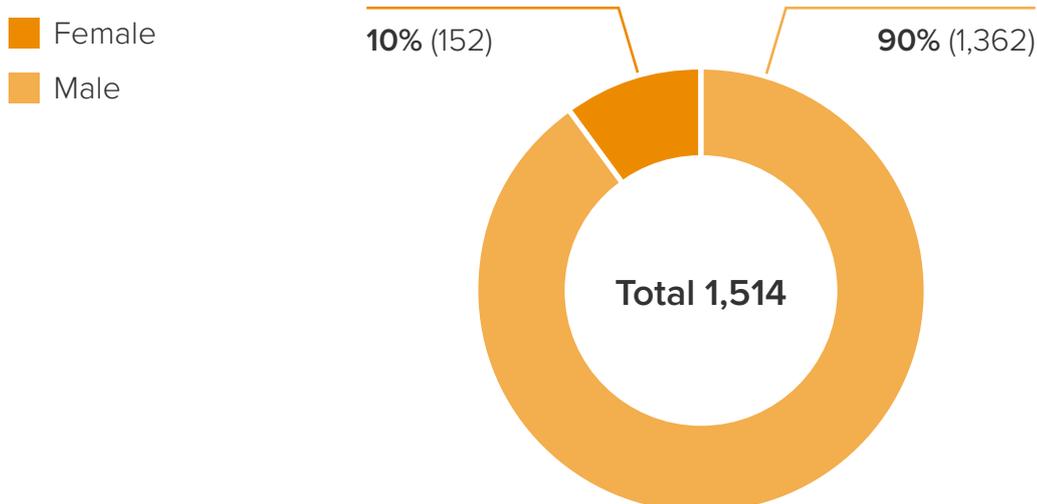
## Fellows – age



In 2020, 16% of Fellows were aged 59 and under (246 individuals), 46% (698 individuals) were aged 60 to 75, and 38% (571 individuals) were aged 76 and over. All of these proportions were unchanged from 2019.

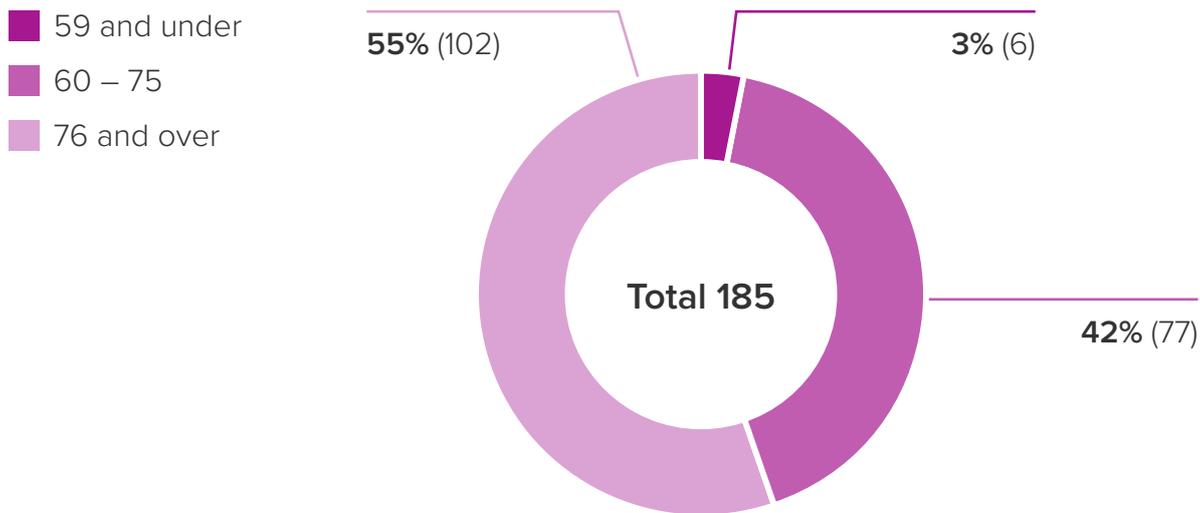
In relation to age, the data above indicates the current age of Fellows. Because Fellows are elected for life, this data is not indicative of their age when they were elected.

## Fellows – gender



In 2020, 10% (152 individuals) of Fellows were female and 90% (1,362 individuals) were male. The proportion of Fellows who are female is unchanged from 2019 (10%, 146 individuals), although the number has increased slightly.

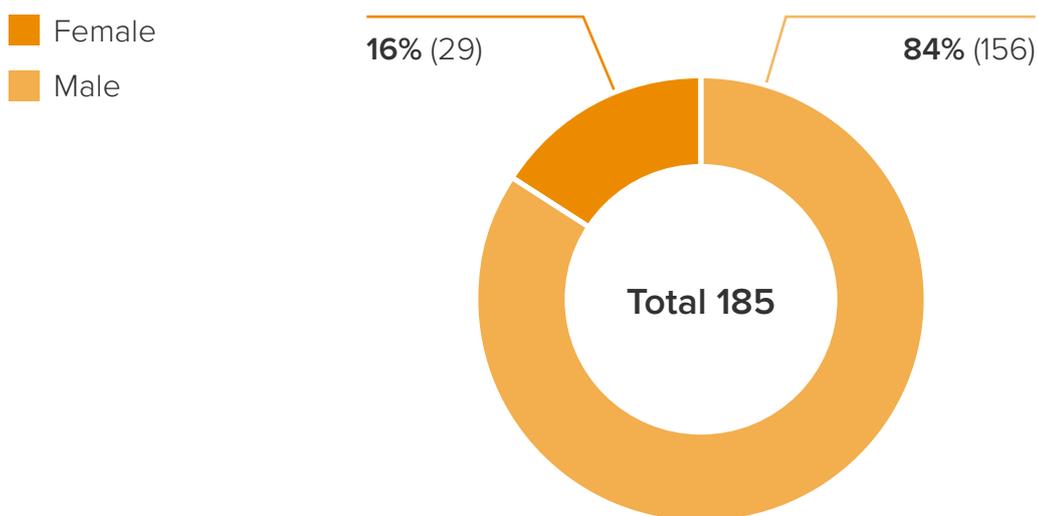
## Foreign Members – age



In 2020, 3% of Foreign Members were aged 59 and under (6 individuals). 42% were aged 60 to 75 (77 individuals), and 55% were aged 76 and over (102 individuals). In 2019, 4% of Foreign Members were aged 59 and under (7 individuals), 42% were aged 60 to 75 (75 individuals), and 54% were aged 76 and over (96 individuals).

In relation to age, the data above indicates the current age of Foreign Members. Because Foreign Members are elected for life, this data is not indicative of their age when they were elected.

## Foreign Members – gender



In 2020, 16% of Foreign Members were female (29 individuals) and 84% were male (156 individuals). This represents a small increase in the proportion of Foreign Members who are female, from 13% (24 individuals) in 2019. The proportion of male Foreign Members was 87% in 2019 (154 individuals).

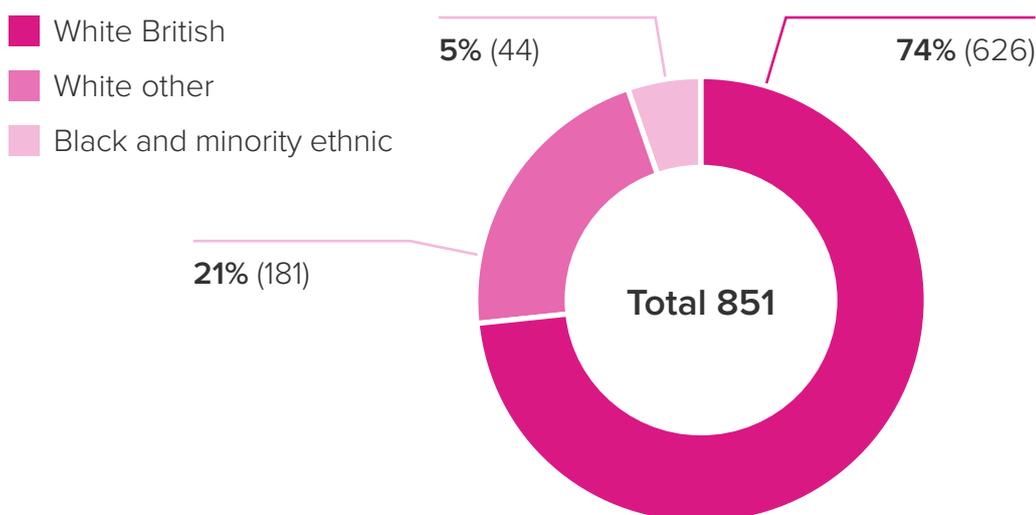
## Ethnicity and disability

The Society has not historically collected data on ethnicity and disability when individuals are first elected to the Fellowship. In February 2021, an invitation to complete a diversity monitoring survey was sent to all Fellows and Foreign Members, which included questions relating to ethnicity and disability. Of the 1,700 Fellows and Foreign Members, 854 (50%) completed the survey. The data below reflects the 50% of Fellows and Foreign Members who responded to the questions on ethnicity and disability and should not be interpreted as representative of the entire Fellowship and Foreign Membership.

Fellows and Foreign Members who preferred not to answer have been excluded from these figures.

The Society collects data on a range of ethnicity categories, which are aligned to the ethnicity categories used on the UK Census 2011. These categories will be updated to reflect the changes to the ethnicity question on the UK Census 2021. As the results for individual categories are too small to report individually, they have been amalgamated into 'Black and minority ethnic' in this report.

### Fellows and Foreign Members – ethnicity of respondents

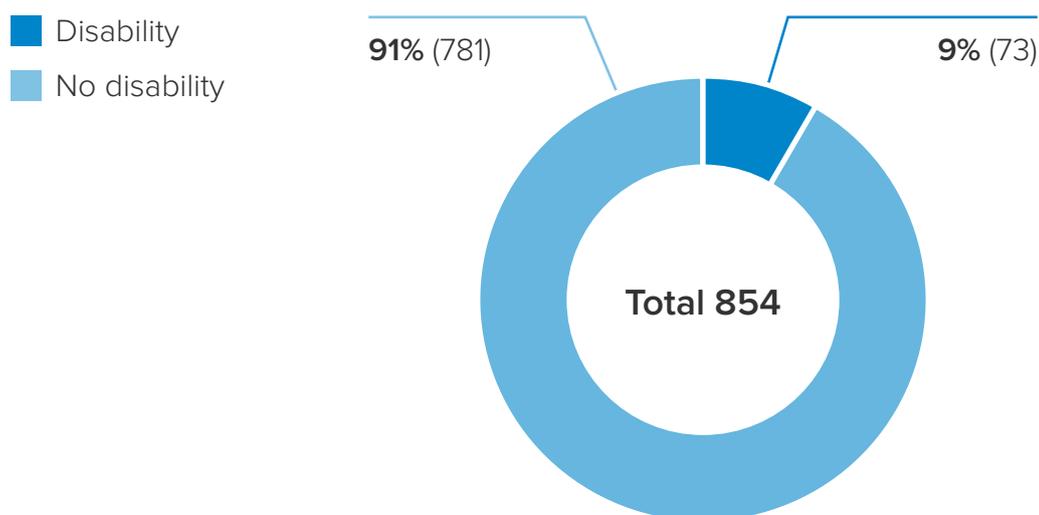


Regarding ethnicity, 851 Fellows and Foreign Members provided a response. Of these, the proportion of Fellows and Foreign Members who said that they were from a Black or minority ethnic background was 5% (44 individuals) in 2020, the same proportion as in 2019 (5%, 42 individuals). In the UK in 2018/19, 11.2% of STEM professors were Black or minority ethnic.<sup>1</sup>

The majority of Fellows and Foreign Members were White British (74%, 626 individuals), compared to 73% in 2019 (596 individuals). In 2020, 21% of respondents were White other (181 individuals), compared to 22% (180 individuals) in 2019.

<sup>1</sup> Ethnicity STEM data for students and academic staff in higher education 2007/08 to 2018/19, analysed by Jisc for the Royal Society. <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Fellows and Foreign Members – disability of respondents

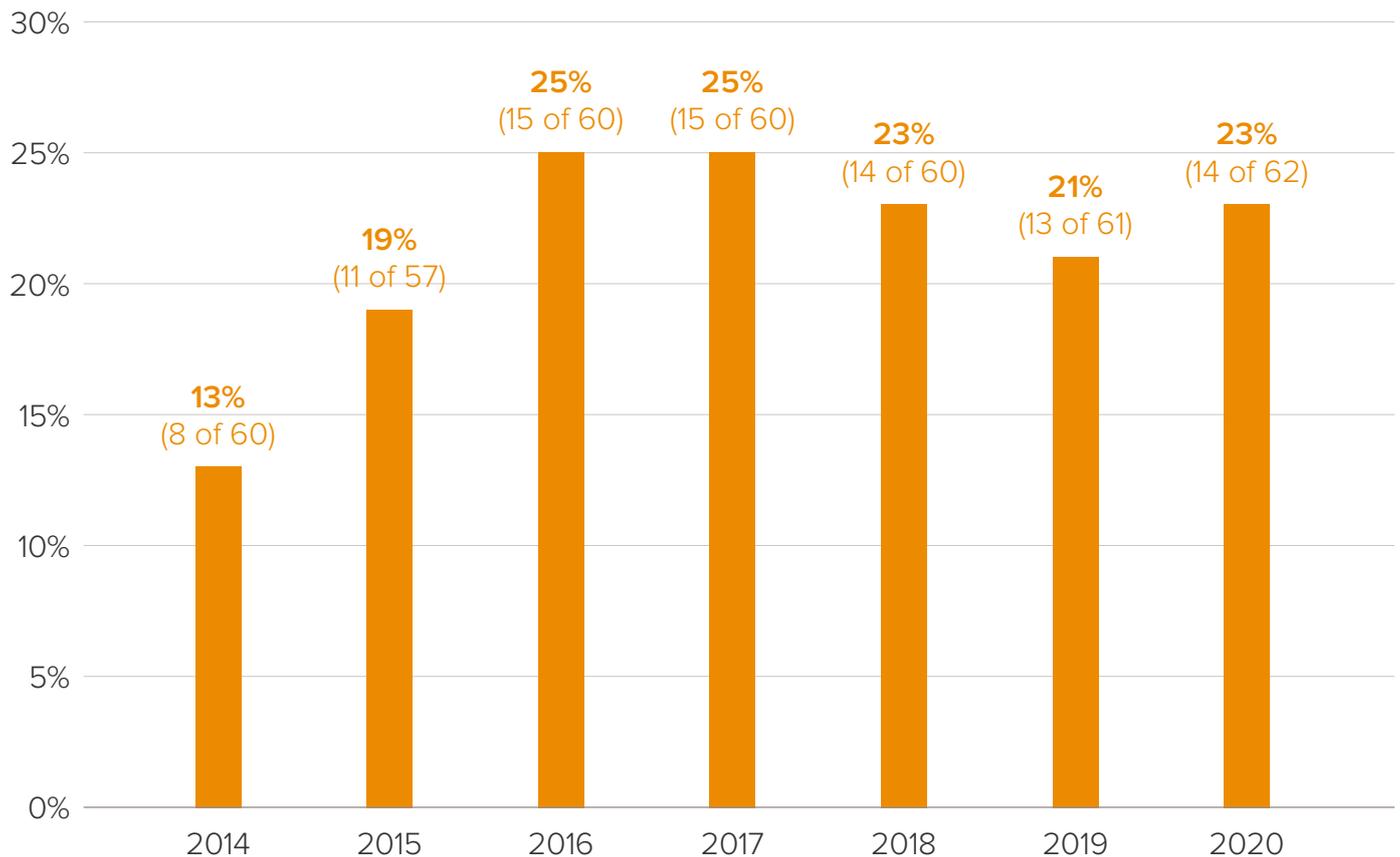


Regarding disability, 854 Fellows and Foreign Members provided a response. Of these, 9% of respondents said that they have a disability (73 individuals) and 91% of respondents said that they did not have a disability (781 individuals). The proportion of Fellows and Foreign Members stating they have a disability has decreased slightly since 2019, when 10% (78 individuals) said they had a disability.

## Trends over time

The chart below shows the proportion and number of new female Fellows and Foreign Members elected in each year from 2014 to 2020. The proportion of female Fellows and Foreign Members elected in 2020 was 23% (14 out of 62 individuals). In the UK, 20.9% of professors in STEM are female (2,600 individuals).<sup>2</sup>

Proportion of new female Fellows and Foreign Members elected 2014 – 2020



2. Based on Higher Education Statistics Agency data, analysed by Jisc for the Royal Society.

The table below shows the average age of new Fellows elected in each year from 2014 to 2020. The average age of new male Fellows has increased gradually from 55 in 2014 to 58 in 2018, where it remained until 2020. The average age of new female Fellows was 58 in 2020, and 60 in 2019. Prior to that, the average age of new female Fellows decreased gradually from 61 in 2014 to 55 in 2018.

#### Average age of new Fellows 2014 – 2020

	2014	2015	2016	2017	2018	2019	2020
Female	61	60	57	56	55	60	58
Male	55	57	57	56	58	58	58

The table below shows the proportion of new Fellows in each age category from 2014 to 2020.

#### Proportion of new Fellows aged over or under 60 2014 – 2020

	2014	2015	2016	2017	2018	2019	2020
Under 60	68% (34)	51% (24)	56% (28)	68% (34)	70% (35)	52% (32)	60% (31)
Over 60	32% (16)	49% (23)	44% (22)	32% (16)	30% (15)	48% (29)	40% (21)
<b>Total</b>	<b>50</b>	<b>47</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>61</b>	<b>52</b>

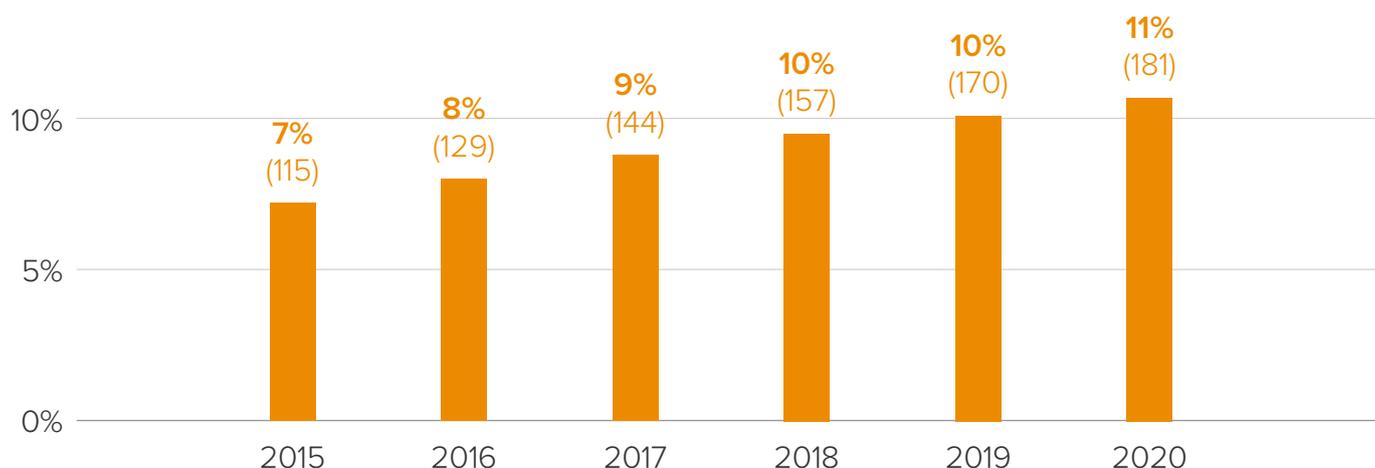
In 2020, 60% (31 individuals) of new Fellows elected were aged under 60 and 40% (21 individuals) were aged over 60.

The Society has not historically collected data on ethnicity and disability when individuals are elected to the Fellowship. This means that it is not possible to show similar trend data for ethnicity or disability for new Fellows and Foreign Members.

## Trends over time – Fellows and Foreign Members

This section shows changes in the profile of Fellows and Foreign Members over time.

**Figure 1: Proportion of Fellows and Foreign Members who are female 2015 – 2020**



**Figure 2: Proportion of Fellows who are female 2015 – 2020**

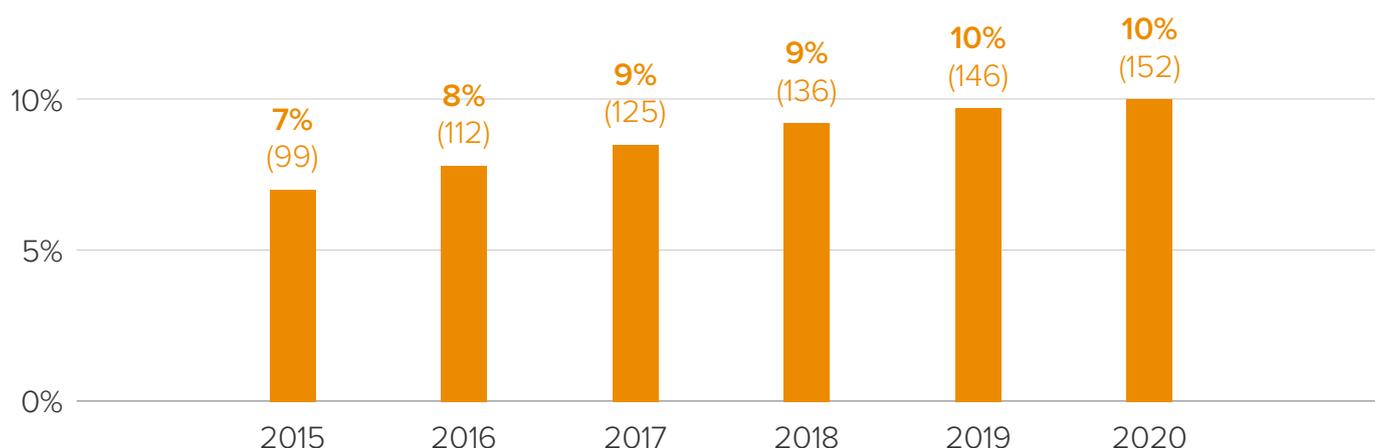


Figure 1 shows that the proportion of Fellows and Foreign Members who are female has increased from 7% in 2015 to 11% in 2020. This change has been steady, with the year-on-year increase being fairly even. Overall, the change in proportion between 2015 and 2020 has been highly statistically significant ( $p < 0.001$ ). Figure 2 shows this change reflected in the proportion of Fellows who are female, from 7% in 2015 to 10% in 2020, also highly statistically significant ( $p < 0.005$ ). The greatest proportional increase over this period is among Foreign Members who are female, from 10% in 2015 to 17% in 2020 ( $p < 0.1$ ).

# Committees, panels and working groups

There are 61 committees and panels with a total of 1,190 members. This includes the Royal Society's Council and 11 Sectional Committees, and working groups. A full list of committees, panels and working groups covered by this section can be found in the Definitions section.

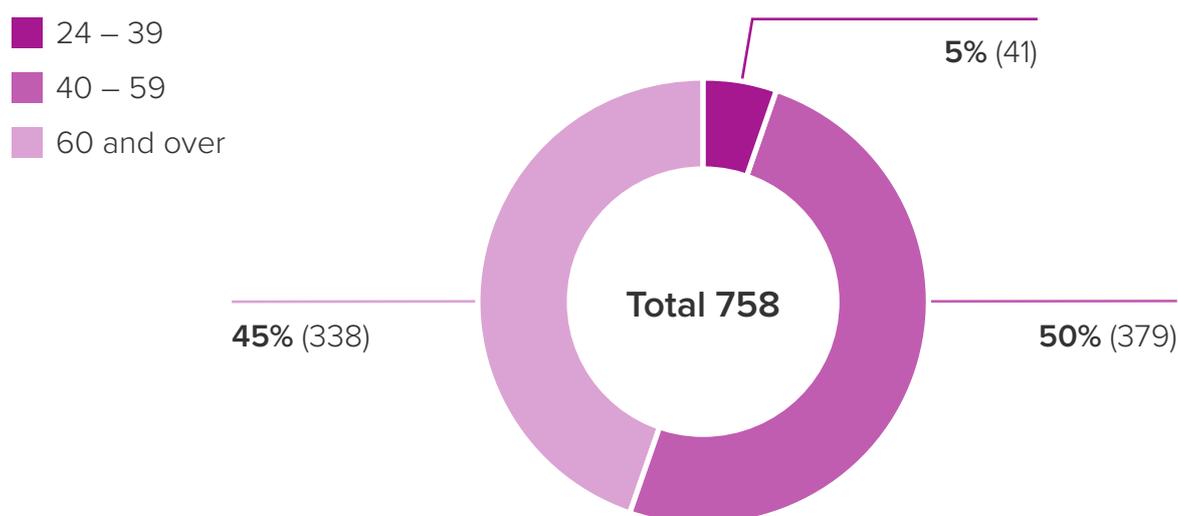
There are 700 committee positions filled by Fellows or Foreign Members, with 151 of these sitting on more than one committee, panel or working group. Currently, 115 Fellows or Foreign Members sit on a grants committee. The remainder are external members, who are invited by the Royal Society to be on committees, panels or working groups because of their expertise.

In February 2021, an invitation to complete an online diversity monitoring questionnaire was sent to all members who had participated in committees, panels, working groups and sub-groups in 2020. Of the 1,190 members, 775 (65%) completed the survey. The data below reflects the 65% of members who responded to the survey and should not be taken to be representative of all committees, panels and working groups.

In each chart below, the proportion of individuals in each category is given in percentages, with the number of individuals in that category in brackets. Respondents who selected 'prefer not to say' have been excluded from these figures.

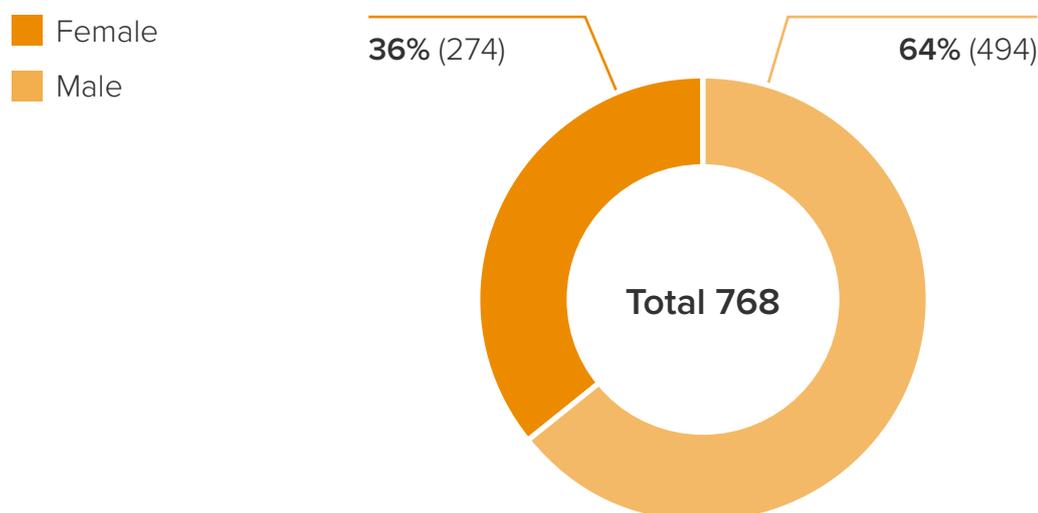
In each section below, comparisons have been made between the proportions of committee members in different categories in 2019. However, as the response rate is higher this year than in 2019, caution should be taken when making comparison between the two years.

## Committees, panels and working groups – age of respondents



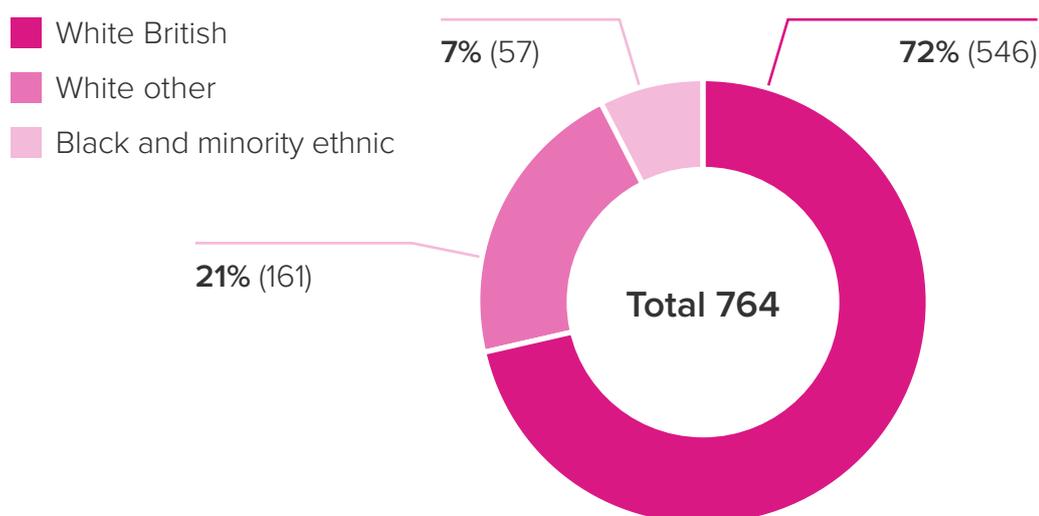
In 2020, 5% of committee, panel and working group members who responded to the survey were aged between 24 and 39 (41 individuals), 50% were aged between 40 and 59 (379 individuals) and 45% were aged 60 or over (338 individuals). In 2019, 8% of committee, panel and working group respondents were aged between 24 to 39 (54 individuals), 46% were aged between 40 and 59 (318 individuals) and 46% were aged 60 and over (332 individuals).

## Committees, panels and working groups – gender of respondents



In 2020, 36% of committee, panel and working group members who responded to the survey were female (274 individuals) and 64% were male (494 individuals). In 2019, 33% of committee, panel and working group members who responded were female (233 individuals) and 67% were male (472 individuals).

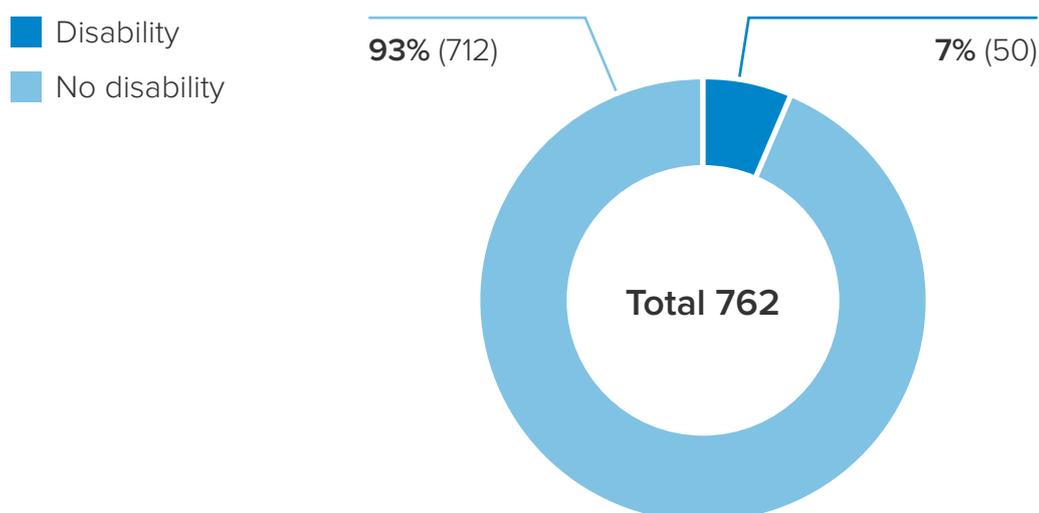
## Committees, panels and working groups – ethnicity of respondents



In 2020, 7% of committee, panel and working group members who responded to the survey said that they were from a Black or minority ethnic background (57 individuals). This compares to 6% (40 individuals) in 2019.

72% of committee, panel and working groups members in 2020 were White British (546 individuals), compared to 71% in 2019 (498 individuals). In 2020, 21% (161 individuals) were White other, compared to 23% (158 individuals) in 2019.

## Committees, panels and working groups – disability of respondents



In 2020, 7% of respondents said they had a disability (50 individuals), compared to 6% in 2019 (41 individuals). In 2020, 93% of respondents said they did not have a disability (712 individuals) compared to 94% (665 individuals) in 2019.

### Trends over time: Committees, panels and working groups

This section investigates changes in the profile of committee members over time.

The data below reflects committee members who responded to the survey in each year and should not be taken to be representative of all committee, panel and working group members.

**Figure 3: Proportion of committee members who are White British 2016 – 2020**

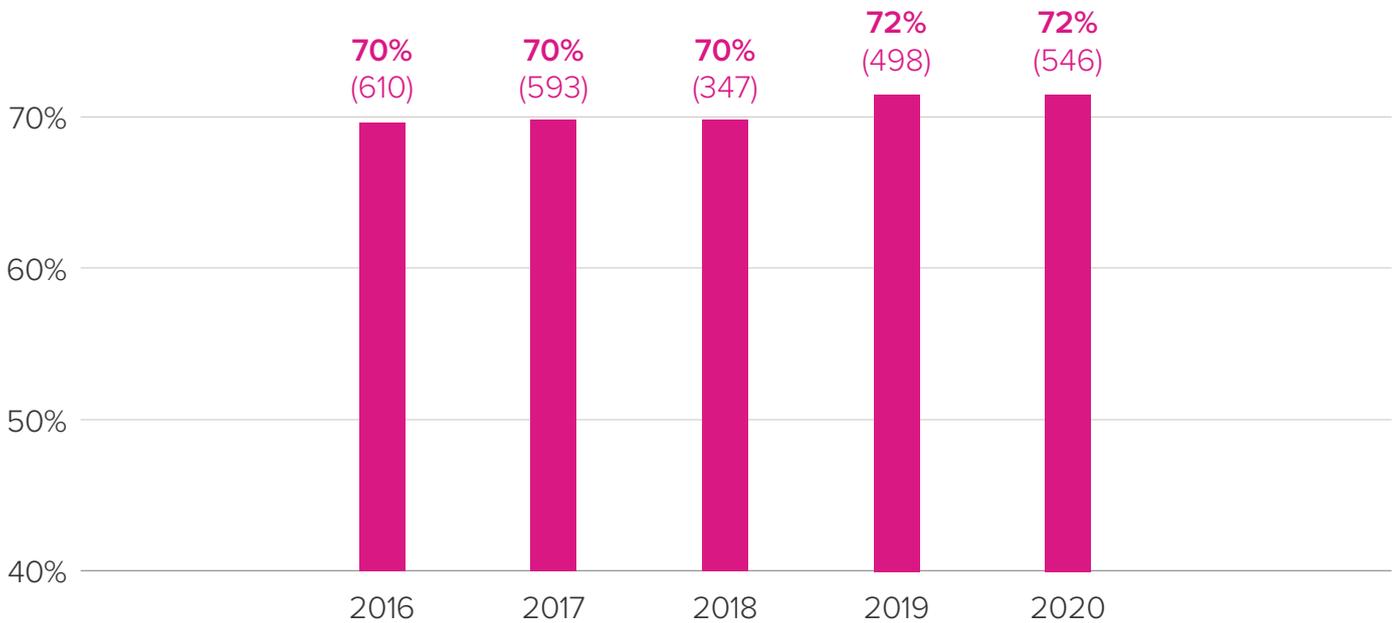
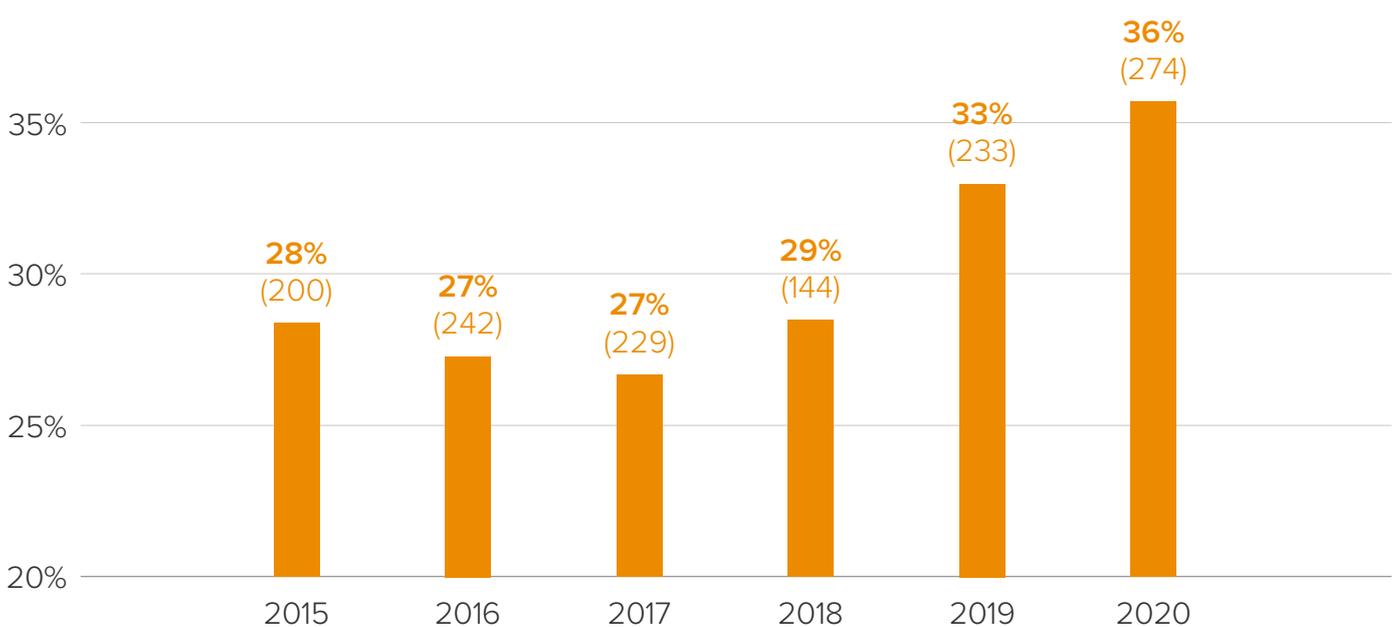


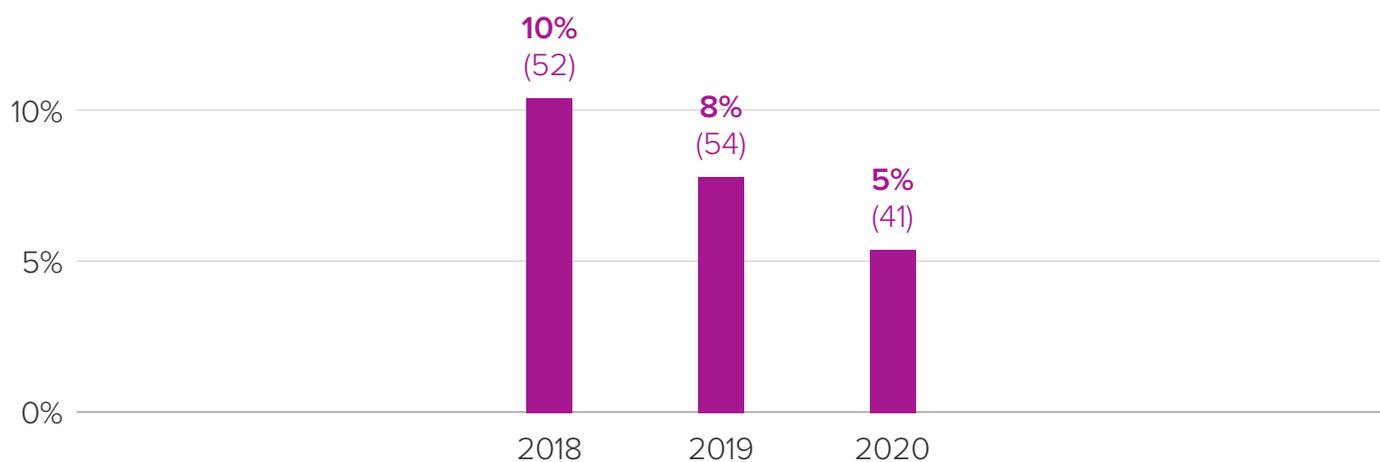
Figure 3 shows that the proportion of committee members who are White British has remained relatively unchanged since 2016, with the proportion being 71.5% in 2020.

**Figure 4: Proportion of committee members who are female 2015 – 2020**

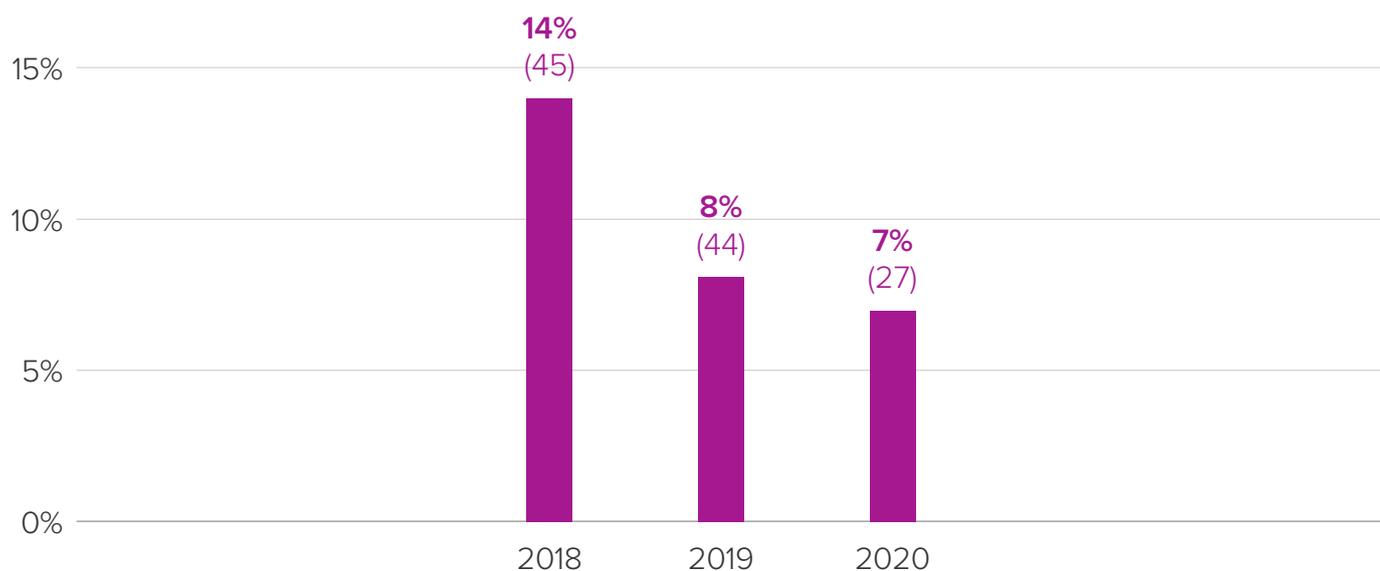


The proportion of committee members who are female increased significantly ( $p < 0.005$ ) from 28% in 2015 to 36% in 2020 (Figure 4).

**Figure 5: Proportion of committee members aged 24 – 39, 2018 – 2020**



**Figure 6: Proportion of grants committee members aged 24 – 39, 2018 – 2020**

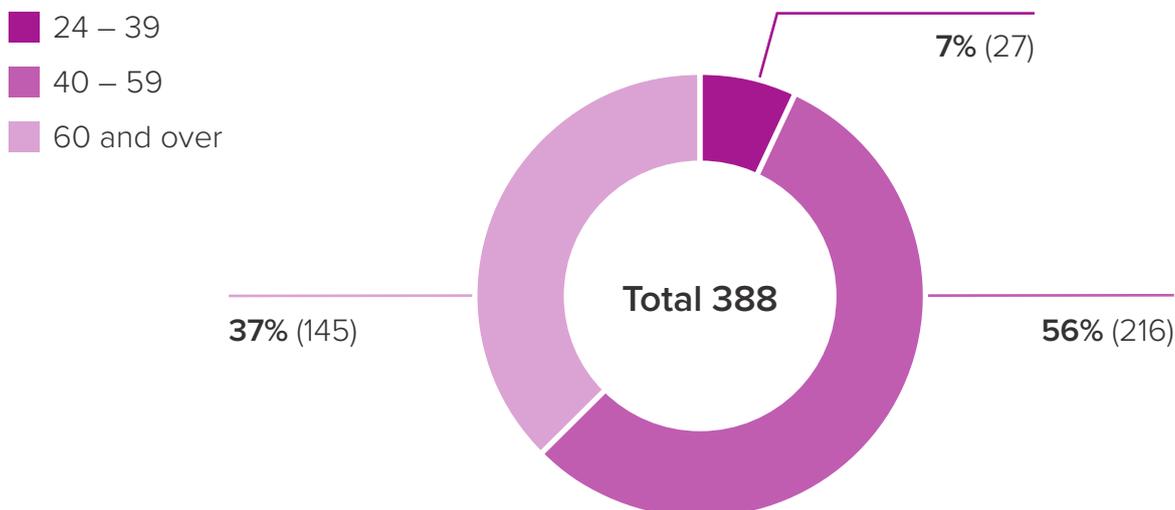


Figures 5 and 6 show that the proportion of committee members and grants committee members who are aged between 24 and 39 both decreased significantly between 2018 and 2020. For committee members, this proportion decreased from 10% in 2018 to 5% in 2020 ( $p < 0.005$ ), whilst for grants committee members, this proportion decreased from 14% in 2018 to 7% in 2020 ( $p < 0.005$ ).

## Grants Committees

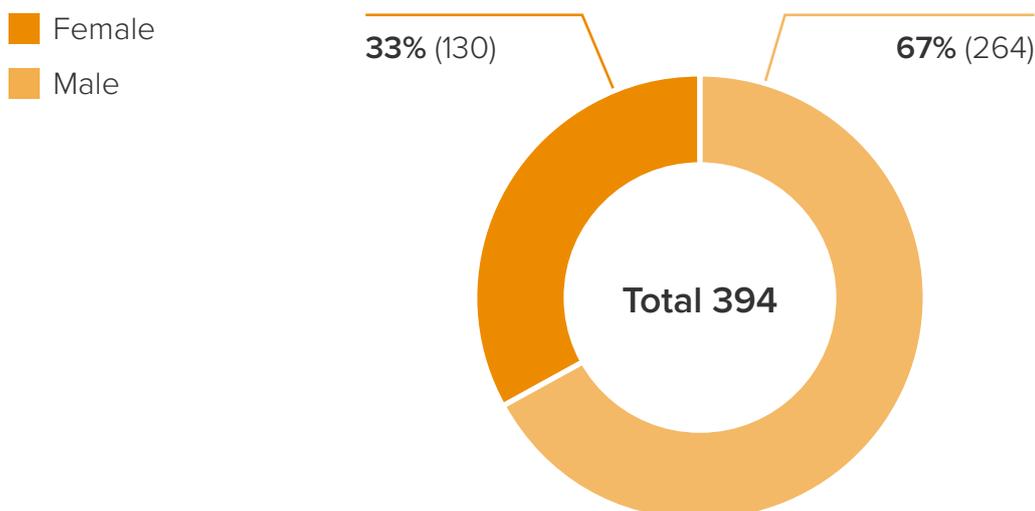
There are 25 committees that have responsibility for grant giving-related decisions (these committees are marked with an asterisk in the Definitions section). Those committees have a total of 902 members, of whom 397 responded to the survey (44%).

### Grants Committees – age of respondents



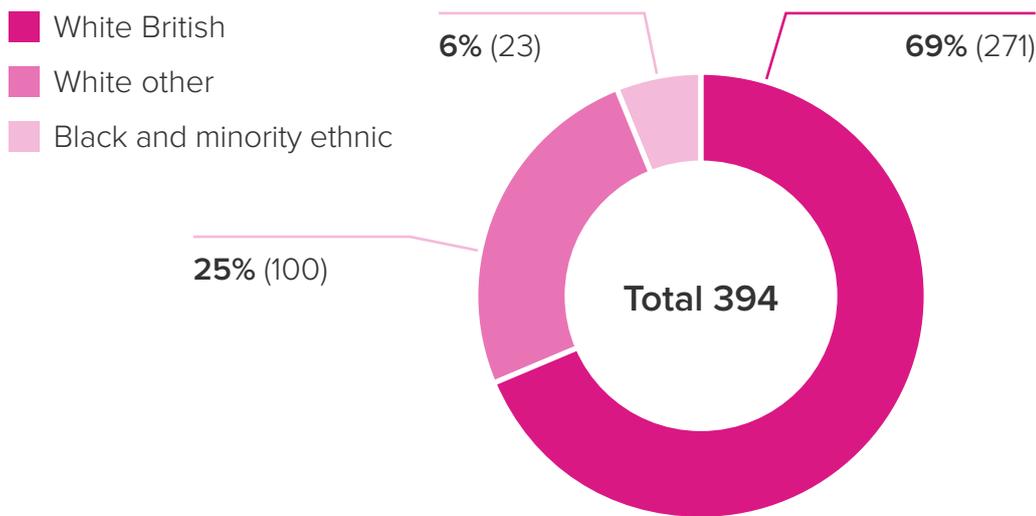
In 2020, 7% of grants committees members who responded to the survey were aged between 24 and 39 (27 individuals), compared to 8% (44 individuals) in 2019. The proportion of grants committees members aged between 40 and 59 was 56% in 2020 (216 individuals), compared to 43% of respondents (232 individuals) in 2019. The proportion aged 60 and over was 37% (145 individuals), compared to 49% (264 individuals) in 2019.

### Grants Committees – gender of respondents



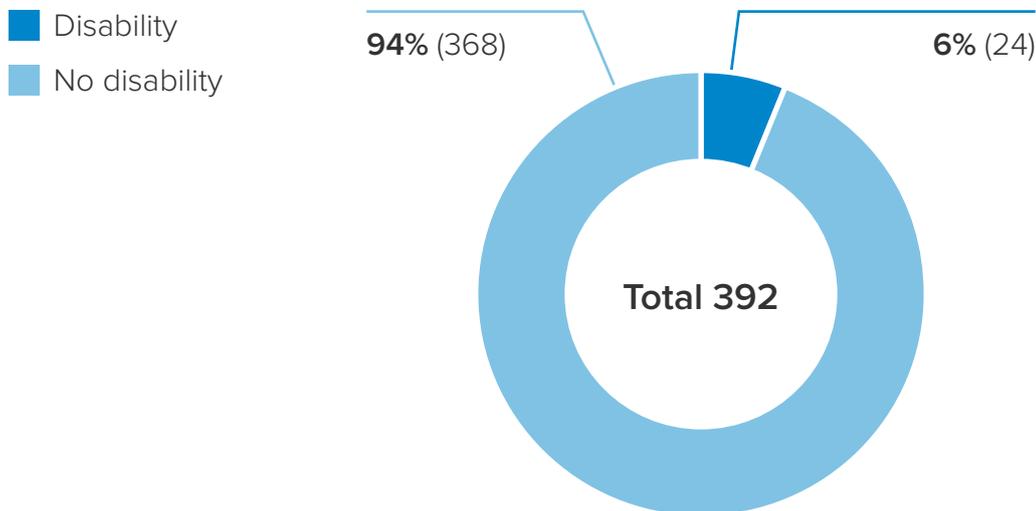
In 2020, 33% of grants committees members who responded to the survey were female (130 individuals) and 67% were male (264 individuals). This compares to 32% female members (176 individuals) and 68% male members (372 individuals) in 2019.

## Grants Committees – ethnicity of respondents



In 2020, 6% of grants committees members who responded to the survey said they were from a Black or minority ethnic background (23 individuals), compared to 6% (27 individuals) in 2019. 69% of members were White British (271 individuals) in 2020, compared to 68% (369 individuals) in 2019. In 2020, 25% of members were White other (100 individuals), compared to 26% (145 individuals) in 2019.

## Grants Committees – disability of respondents

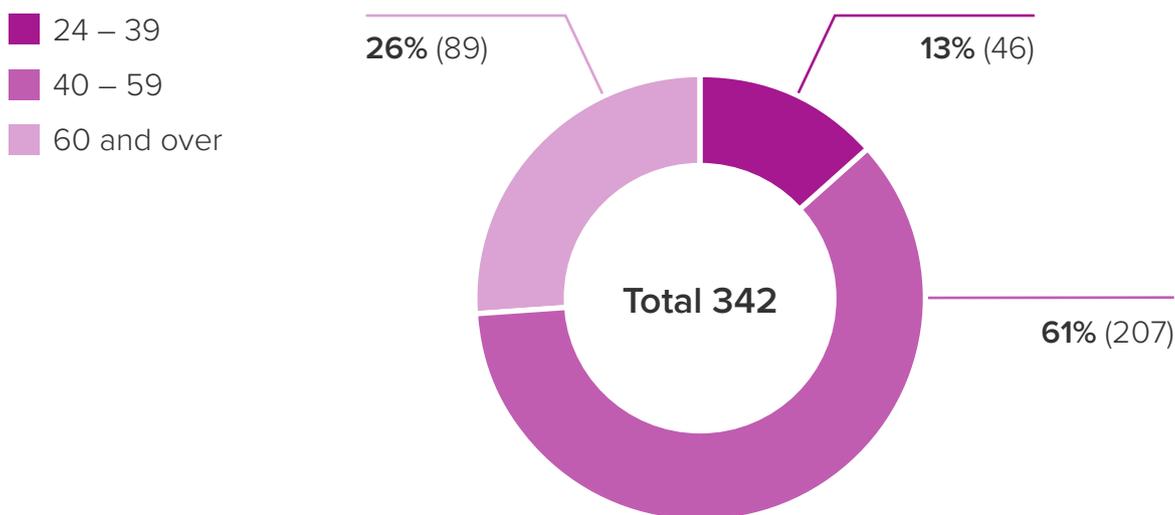


In 2020, 6% of grants committees members who responded to the survey said they had a disability (24 individuals). In 2019, 6% of respondents (31 individuals) said they had a disability. In 2020, 94% of grants committee members who responded to the survey said they did not have a disability (368 individuals), compared to 94% (514 individuals) in 2019.

## Editorial Boards

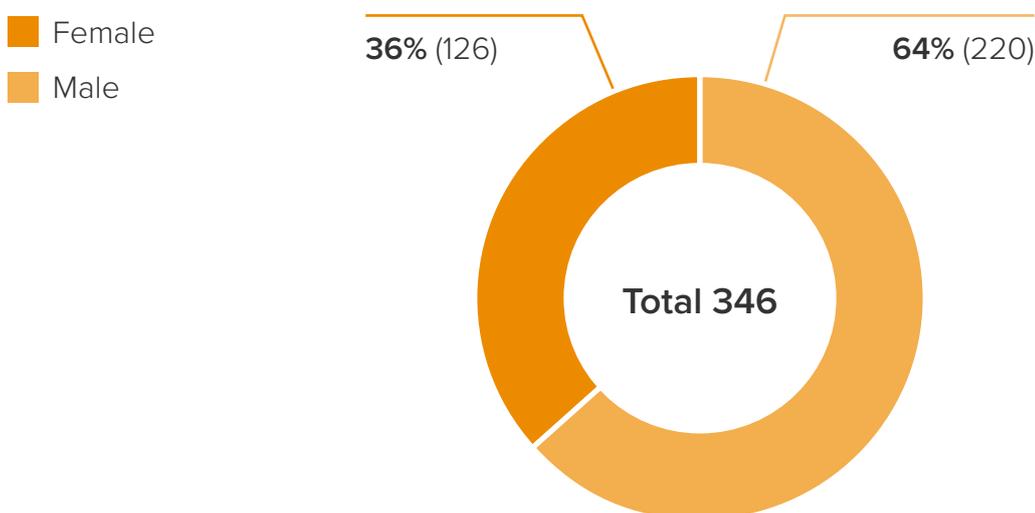
Each of the Society's ten journals has an Editorial Board, which offers advice to the Editors and Publishing Board on the scholarly content of the Society's journals. Each Editorial Board is chaired by a Fellow of the Royal Society and made up of distinguished scientists in relevant disciplines. The Editorial Boards have a total of 882 members, 352 of whom responded to the survey (40%). This is a higher proportion and number of respondents than in 2019 (38%, 308 respondents).

### Editorial Boards – age of respondents



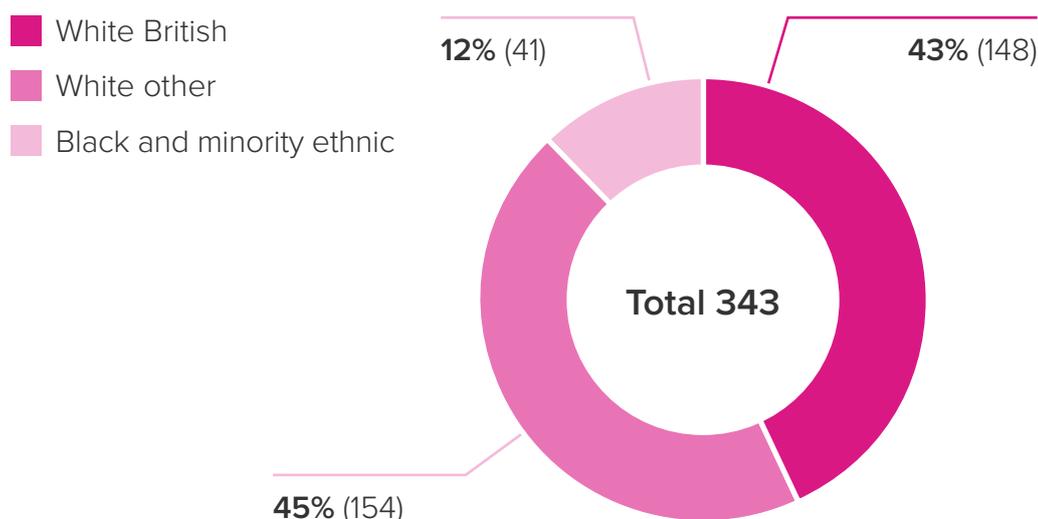
In 2020, 13% of Editorial Board members who responded to the survey were aged between 24 and 39 (46 individuals), compared to 11% (32 individuals) in 2019. The proportion of Editorial Board members aged 40 to 59 was 61% in 2020 (207 individuals), an increase from 55% (163 individuals) in 2019. The proportion aged 60 and over in 2020 was 26% (89 individuals), a statistically significant ( $p < 0.05$ ) decrease compared to 34% (103 individuals) in 2019.

### Editorial Boards – gender of respondents



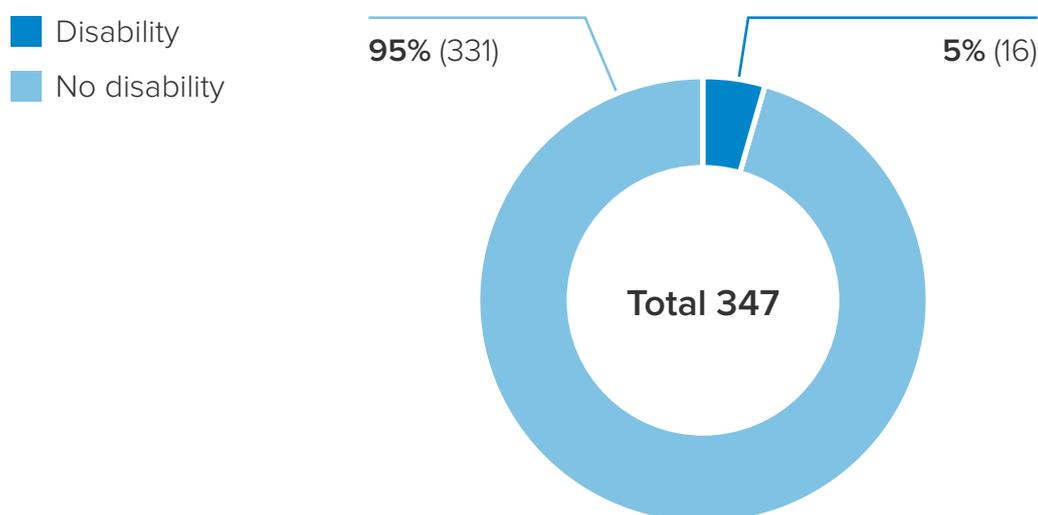
In 2020, 36% of Editorial Board members who responded to the survey were female (126 individuals) and 64% were male (220 individuals). This compares to 33% female members (100 individuals) and 67% male members (203 individuals) in 2019.

## Editorial Boards – ethnicity of respondents



In 2020, 12% of Editorial Board members who responded to the survey were from a Black or minority ethnic background (41 individuals), compared to 15% in 2019 (42 individuals). 43% of members were White British (148 individuals) in 2020, compared to 41% (124 individuals) in 2019. In 2020, 45% of members were White other (154 individuals), compared to 44% (133 individuals) in 2019.

## Editorial Boards – disability of respondents



In 2020, 5% of Editorial Board members who responded to the survey said they had a disability (16 individuals), compared to 6% (17 individuals) in 2019. In 2020, 95% of Editorial Board members said they did not have a disability (331 individuals) compared to 94% (285 individuals) in 2019.

# Research Fellowship Grants

The Royal Society supports around 1,100 Research Fellows across a number of research fellowship schemes. Most are based in UK research institutions, with some based in other countries, such as Future Leaders – African Independent Research ('FLAIR') fellows who are based in research institutions in Sub-Saharan Africa.

This section presents diversity data of applicants and award holders for the six largest research fellowship schemes offered by the Society as follows:

- Dorothy Hodgkin Fellowship
- Industry Fellowship
- Sir Henry Dale Fellowship
- Newton International Fellowship
- University Research Fellowship
- Royal Society Wolfson Fellowship

Further information about each scheme is included in the Definitions section.

The Royal Society supports several other research fellowship schemes. However, differences in eligibility criteria mean that it is not possible to meaningfully aggregate data for those schemes with the others included in this report, and the number of applicants and offers for some schemes is too small to report individually. As a result, data for these other schemes is not included in this report.

The number of applicants and offers for each scheme is shown in the table below. This data covers applicants and offers for 2020 only.

Scheme	Number of applicants	Number of offers
Dorothy Hodgkin Fellowship	106	7
Industry Fellowship (including Short Industry Fellowships)	62	19
Newton International Fellowship	754	30
Sir Henry Dale Fellowship	184	32
University Research Fellowship	458	42
Royal Society Wolfson Fellowship	35	14
<b>Total</b>	<b>1,599</b>	<b>144</b>

Diversity data for grants applicants is collected via the Society's grant application system, Flexi-Grant®, when an individual applies for a research fellowship. Data relating to the gender, ethnicity and disability of applicants and offers across all six schemes, and for the Society's three early career research fellowships (Dorothy Hodgkin Fellowship, University Research Fellowship and Sir Henry Dale Fellowship) is shown below. Whilst the Society's online data collection methods make completion of the questions on the diversity form mandatory, all questions contain an option of 'prefer not to say' and not all respondents choose to provide their diversity information.

The proportion of applicants and offers is given in percentages, with the number of individuals in brackets. Diversity data for all six schemes has been amalgamated in order to avoid individuals being identifiable. Individuals who preferred not to provide their diversity data have been excluded from these figures.

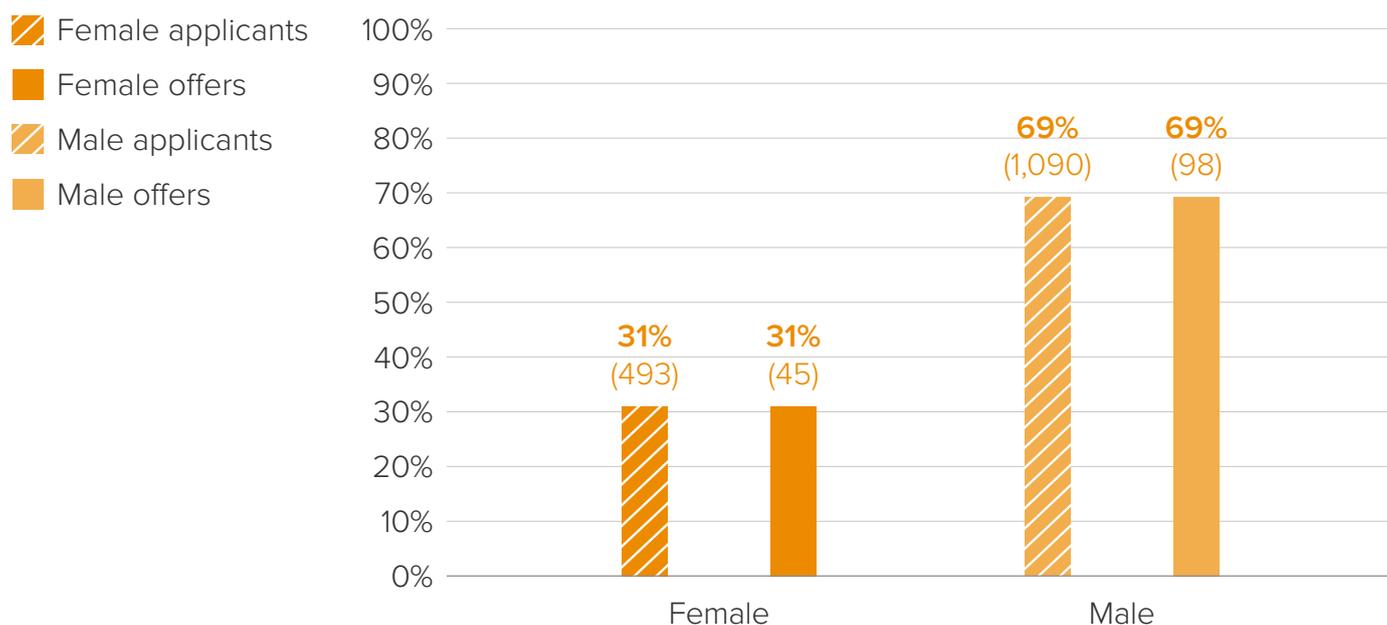
In 2019, the Royal Society commissioned the Careers Research and Advisory Centre to analyse HESA data in order to determine the diversity profile of the pool of researchers in the UK who would be eligible to apply for the three early career fellowships schemes included in this report (Dorothy Hodgkin Fellowship, University Research Fellowship and Sir Henry Dale Fellowship) ('the eligible pool').

Data on the gender, ethnicity and disability of the eligible pool, drawn from that analysis, has been included to show how the diversity of applicants and awardees for these Royal Society early career fellowships compares to that of the pool of researchers in the UK who meet the eligibility criteria.

It should be noted that the Newton International Fellowship attracts a higher proportion of applicants from Black and ethnic minority backgrounds than the other five schemes. Consequently, ethnicity data for the Newton International Fellowship is also presented separately below.

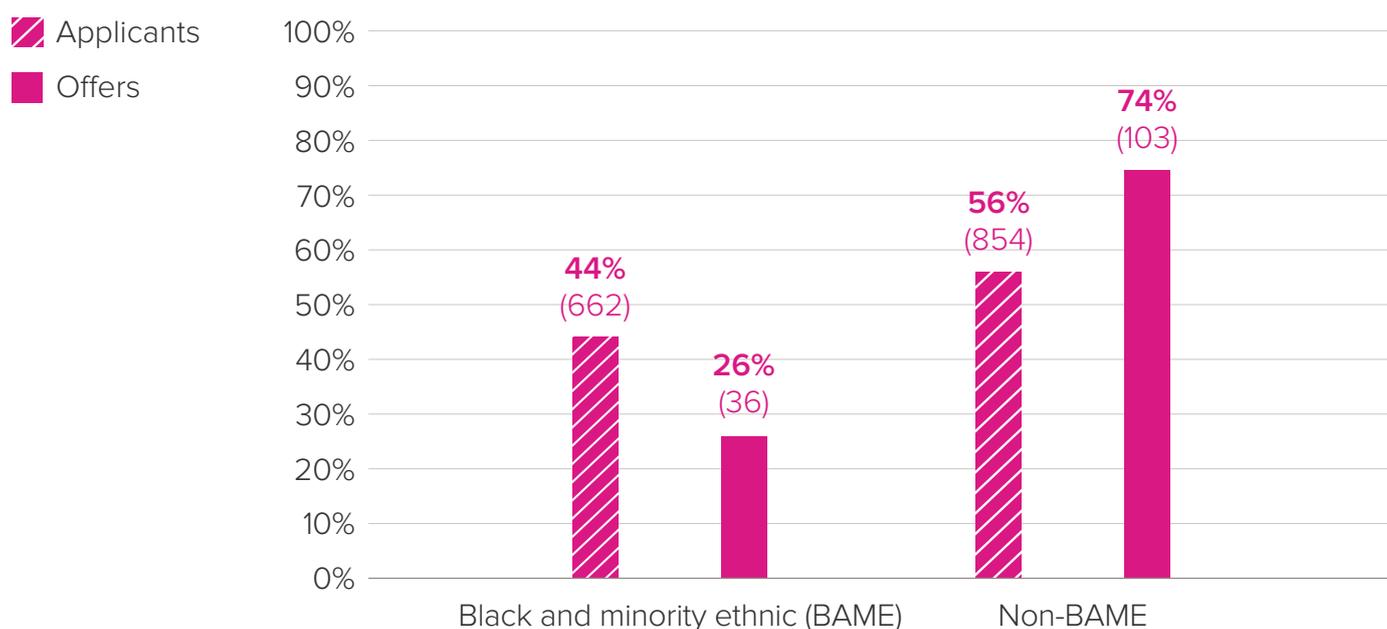
Throughout this section of the report, references to 'offers' indicate the number and proportion of offers made to applicants, rather than the number and proportion of applicants receiving offers.

## Grant applicants and offers – gender



In 2020, 31% of applicants were female (493 individuals). The proportion of offers was consistent with the proportion of applicants, with 31% of offers made to female applicants (45 individuals). This represents a decrease since 2019 in the proportion and number of female applicants (34%, 539 individuals) and offers (34%, 60 individuals).

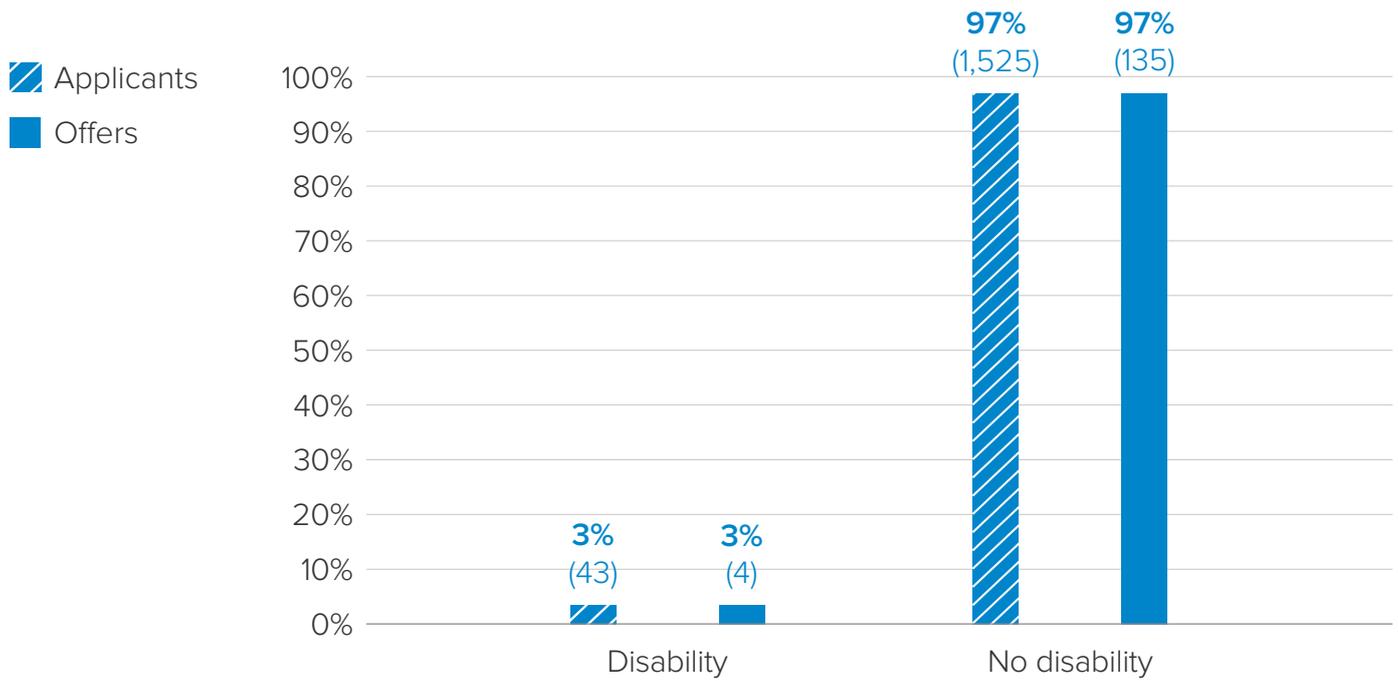
## Grant applicants and offers – ethnicity



The proportion of applicants from Black and minority ethnic backgrounds was 44% in 2020 (662 individuals). This is slightly higher than the proportion in 2019 (42%, 643 individuals).

The proportion of offers made to applicants from Black and minority ethnic backgrounds in 2020 was 26% (36 individuals). In 2019, 22% of offers were made to applicants from Black and minority ethnic backgrounds (37 individuals). The total number of offers made in 2020 was 139, compared to 172 in 2019.

## Grant applicants and offers – disability



The proportion of applicants who declared a disability was 3% (43 individuals) in 2020. In 2019, 2% of applicants (35 individuals) declared a disability.

In 2020, the proportion of offers made to individuals with a disability was the same as the proportion of applicants (3%, 4 individuals). This is an increase compared to the proportion and number of offers made to individuals with a disability in 2019, which was 1% (2 individuals).

## Early career research fellowship applicants and offers

The Royal Society's three early career research fellowships (Dorothy Hodgkin Fellowship, University Research Fellowship and Sir Henry Dale Fellowship) are awarded to scientists who have the potential to become leaders in their field to enable them to establish an independent research career in the UK.



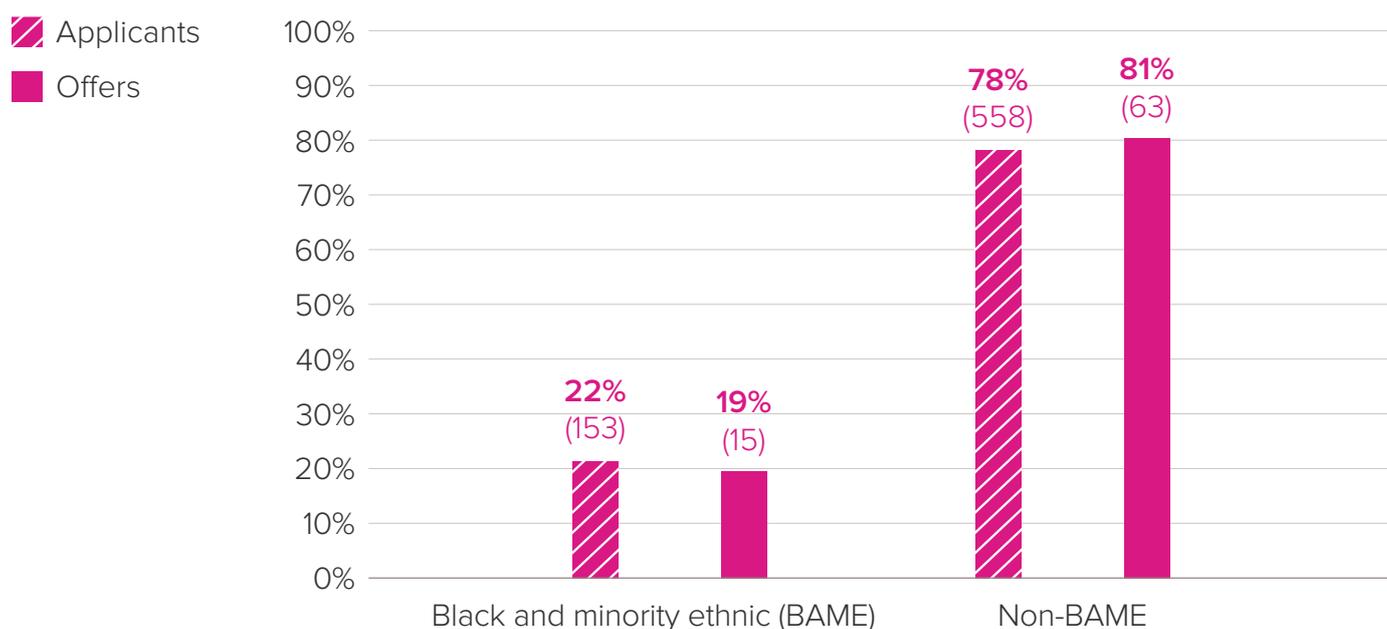
The proportion of female applicants for early career fellowships was 33% in 2020 (246 individuals). The proportion of offers made to female applicants in 2020 was slightly higher than the proportion of female applicants (35%, 28 individuals). In 2019, the proportion of offers made to female applicants (39%, 33 individuals) was also slightly higher than the proportion of female applicants (38%, 284 individuals).

The proportion of male applicants for early career fellowships was 67% in 2020 (490 individuals). The proportion of offers made to male applicants in 2020 was slightly lower than the proportion of male applicants (65%, 52 individuals). In 2019, the proportion of offers made to male applicants (61%, 52 individuals) was also slightly lower than the proportion of male applicants (62%, 462 individuals).

The proportion of female applicants and offers is lower than the proportion of female researchers in the pool of researchers who meet the eligibility criteria for the Society's early career fellowship schemes. Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion of female researchers in this eligible pool is 42% (5,640).<sup>3</sup>

3. Profile of postdoctoral researchers in UK eligible for RS early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Early career research fellowships – ethnicity



The proportion of applicants from Black and minority ethnic backgrounds to early career fellowship schemes was 22% in 2020 (153 individuals). This is marginally higher than the proportion and number of applicants from Black and minority ethnic backgrounds in 2019 (21%, 150 individuals).

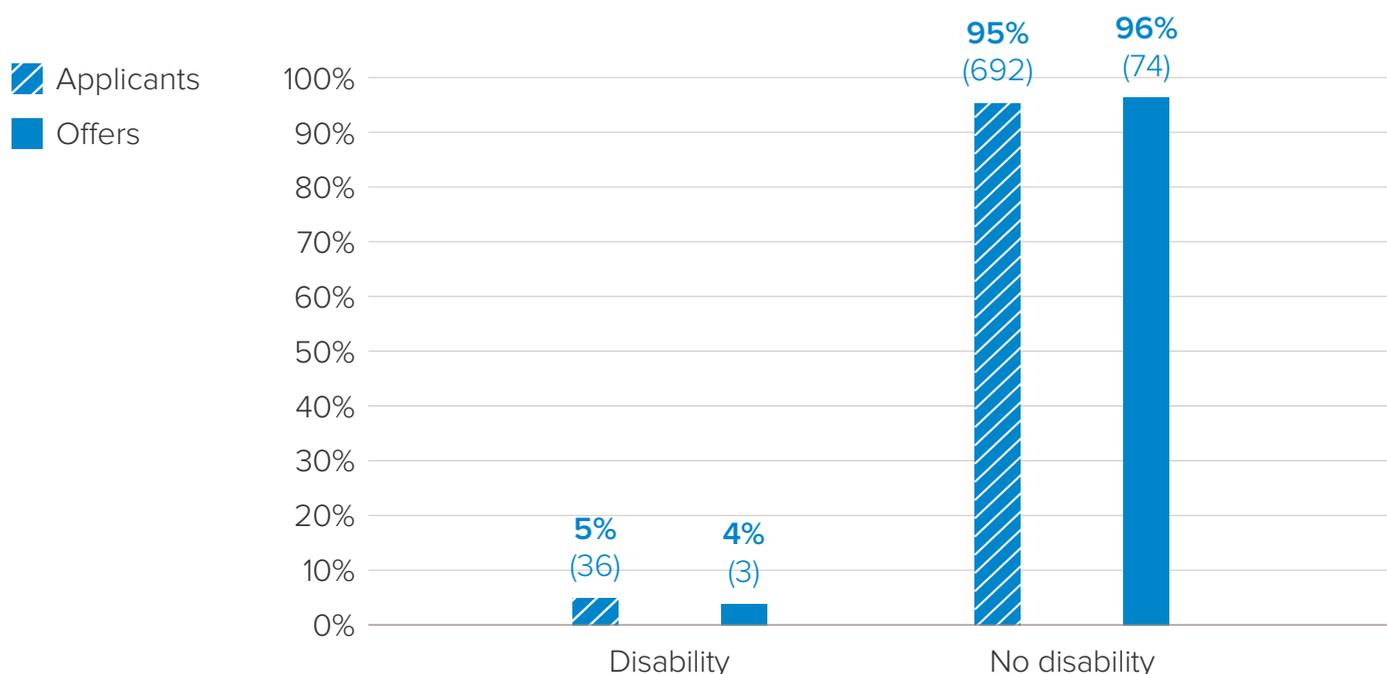
The proportion of offers made to individuals from Black and minority ethnic backgrounds in 2020 was lower than the proportion of applicants (19%, 15 individuals).

The proportion of offers made to individuals from Black and minority ethnic backgrounds in 2020 was higher than in 2019 (8%, 7 individuals).

The proportion of applicants from, and offers made to, individuals from Black and minority ethnic backgrounds is lower than the proportion of Black and minority ethnic individuals in the pool of researchers who meet the eligibility criteria for the Society's early career fellowship schemes. Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion of Black and minority ethnic researchers of all nationalities in this eligible pool is 28% (3,820). The proportion of Black and minority ethnic researchers in the eligible pool who are UK nationals is 12% (620 individuals).<sup>4</sup>

4. Profile of postdoctoral researchers in UK eligible for RS early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Early career research fellowships – disability



The proportion of applicants for early career fellowships who declared a disability was 5% in 2020 (36 individuals), higher than the proportion in 2019 (3%, 24 individuals).

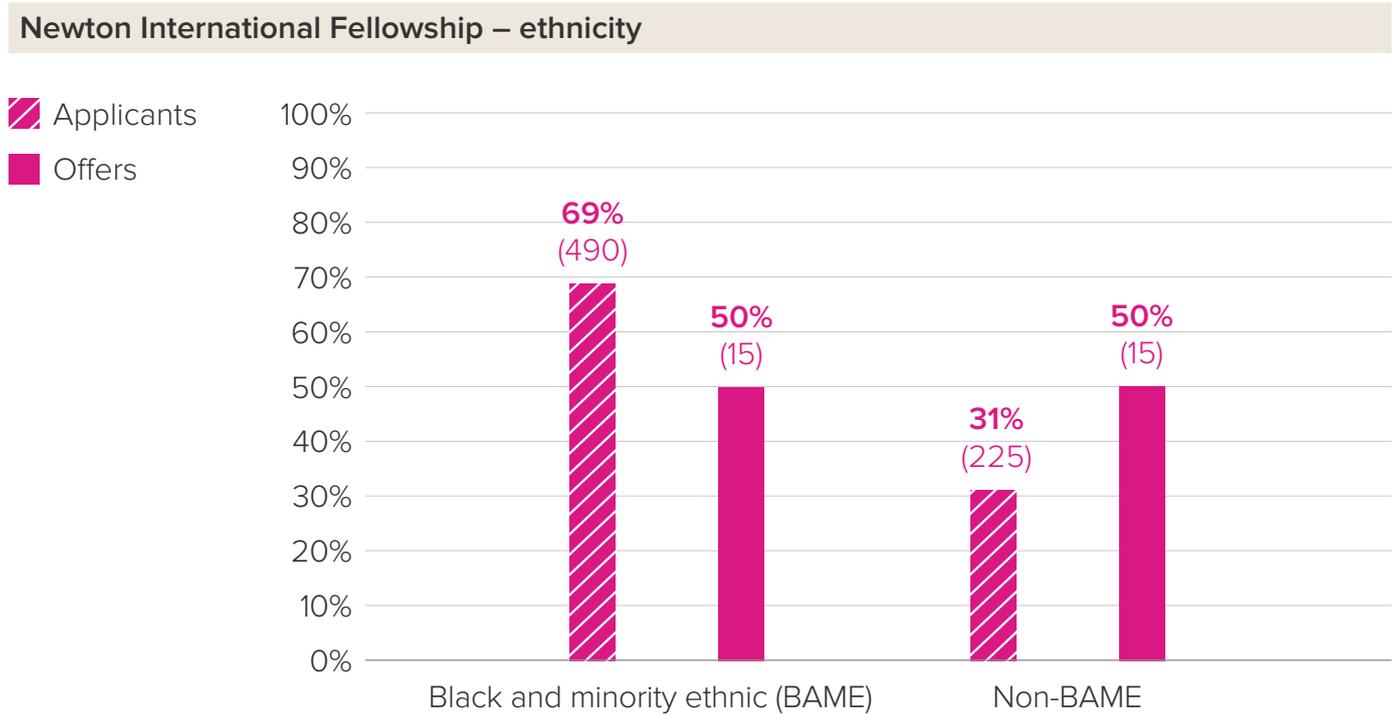
The proportion of offers made in 2020 to individuals who declared a disability was lower than the proportion of applicants (4%, 3 individuals). This is higher than the proportion and number of offers to individuals who declared a disability in 2019 (1%, 1 individual).

The proportion of applicants from, and offers made to, individuals who declared a disability is higher than the proportion of individuals with a known disability in the pool of researchers who meet the eligibility criteria for the Society's early career fellowship schemes. Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion of researchers with a known disability in this eligible pool is 3.1% (410 individuals).<sup>5</sup>

5. Profile of postdoctoral researchers in UK eligible for RS early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Newton International Fellowship

The Newton International Fellowship is a two-year scheme for non-UK scientists who are at an early stage of their research career and wish to conduct research in the UK.

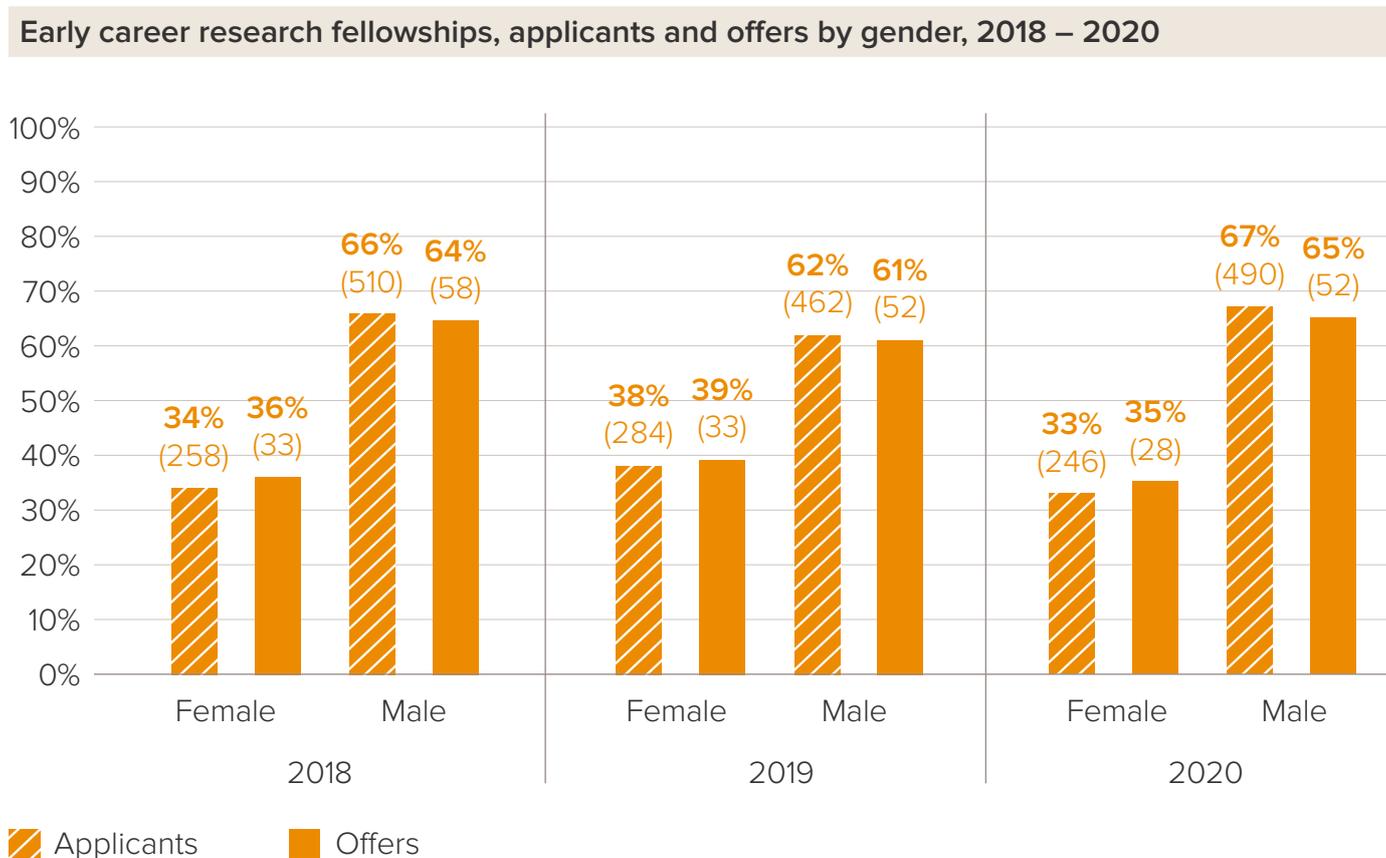


The proportion of applicants from Black and minority ethnic backgrounds for the Newton International Fellowship was 69% in 2020 (490 individuals). In 2019, the proportion of applicants from Black and minority ethnic backgrounds was 71% (474 individuals).

The proportion of offers made to individuals from Black and minority ethnic backgrounds in 2020 (50%, 15 individuals) was lower than the proportion of applicants. This is also lower than the proportion of offers made to Black and minority ethnic individuals in 2019 (60%, 27 individuals).

## Trends over time

The charts below show the proportion and number of applicants and offers for the Society's early career fellowship schemes by gender, ethnicity and disability, from 2018 to 2020.

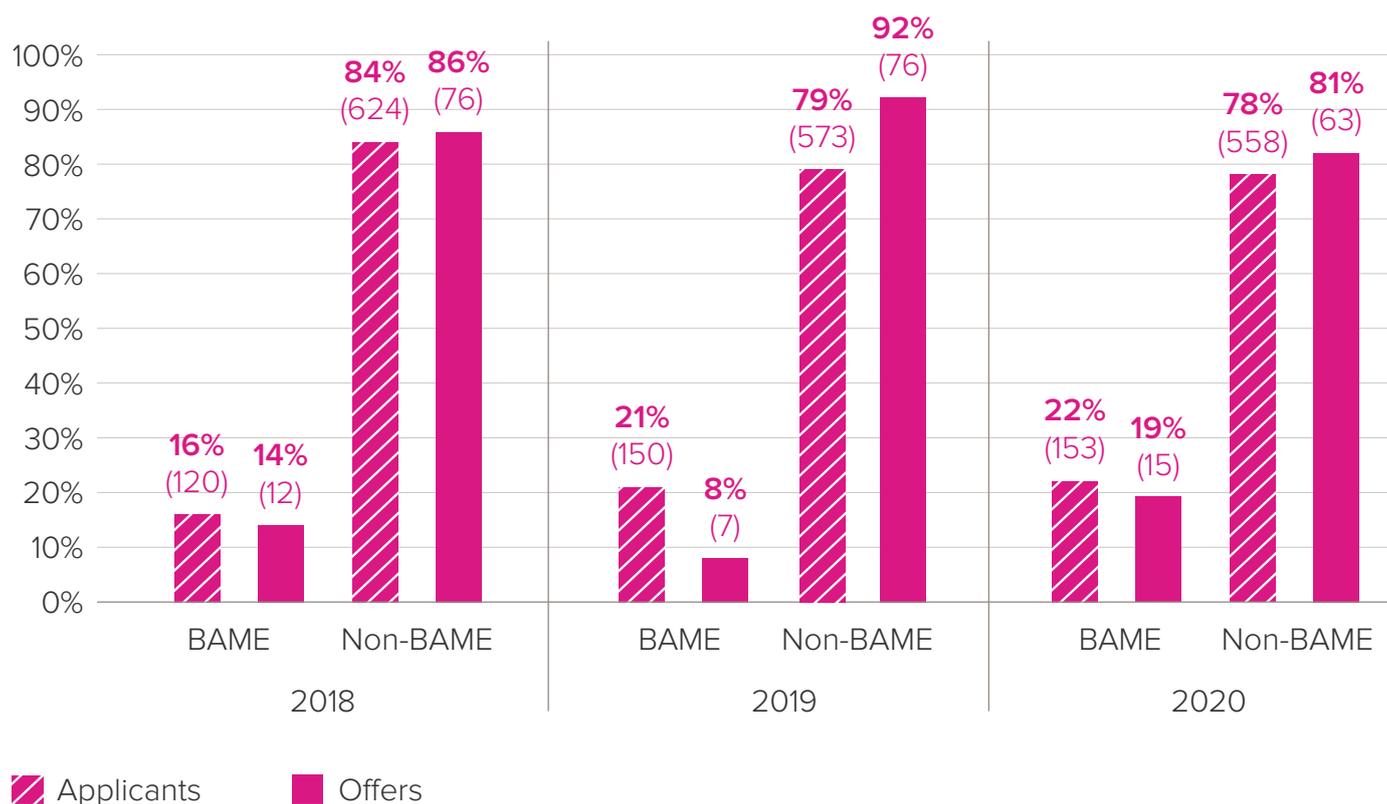


The proportion of offers made to female applicants has been slightly higher than the proportion of female applicants in each year from 2018 to 2020.

Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion of female individuals in the pool of researchers who meet the eligibility criteria for the Society's early career fellowship schemes is 42% (5,640).<sup>6</sup>

6. The profile of postdoctoral researchers in the UK eligible for Royal Society early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Early career research fellowships, applicants and offers by ethnicity, 2018 – 2020



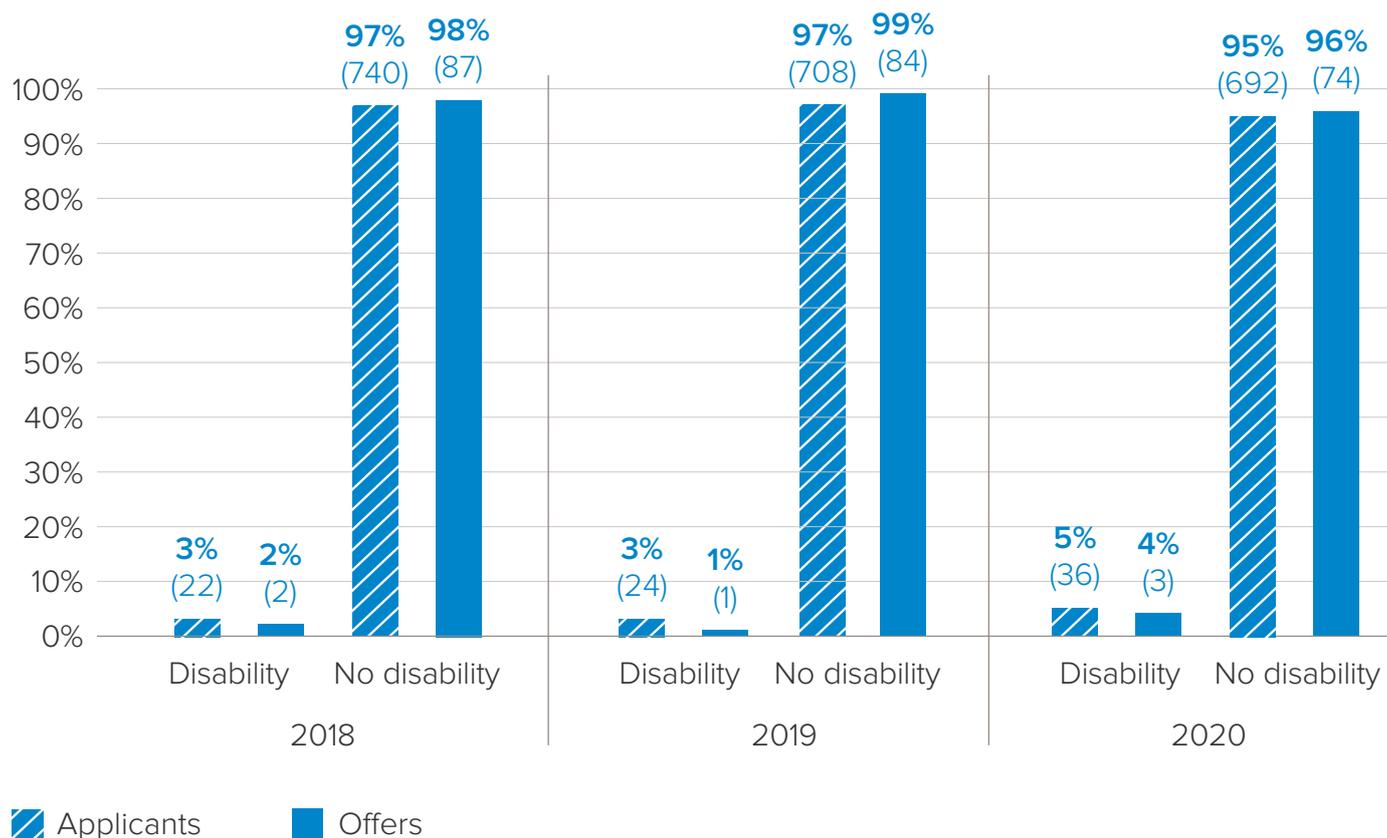
The proportion of applicants from Black and minority ethnic backgrounds increased from 16% (120 individuals) in 2018, to 21% (150 applicants) in 2019 and 22% (153 applicants) in 2020.

The proportion of offers made to applicants from Black and minority ethnic backgrounds has been lower than the proportion of applicants in each year from 2018 to 2020. In 2018, the proportion of offers made to applicants from Black and minority ethnic backgrounds was 14% (12 individuals) in 2018. This decreased to 8% (7 individuals) in 2019, and increased to 19% (15 individuals) in 2020.

Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion of Black and minority ethnic researchers of all nationalities in this eligible pool is 28% (3,820). The proportion of Black and minority ethnic researchers in the eligible pool who are UK nationals is 12% (620 individuals).<sup>7</sup>

7. The profile of postdoctoral researchers in the UK eligible for Royal Society early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Early career research fellowships, applicants and offers by disability, 2018 – 2020



The proportion of offers made to individuals who declared a disability has been lower than the proportion of applicants with a disability in each year from 2018 to 2020. As the number of applicants who declared a disability and the number of offers made to individuals who declared a disability is low in each year, caution should be taken when drawing conclusions from the data.

Comparative analysis carried out by the Careers Research and Advisory Centre on behalf of the Society showed that the proportion researchers with a known disability in this 'eligible' pool is 3.1% (410 individuals).<sup>8</sup>

<sup>8</sup> The profile of postdoctoral researchers in the UK eligible for Royal Society early career fellowship programmes, (Careers Research and Advisory Centre, March 2021). <https://royalsociety.org/topics-policy/publications/2021/trends-ethnic-minorities-stem/>

## Trends over time – Grant applications and offers

The charts below show the proportion and number of applicants and offers for the Society’s grants schemes by ethnicity, and how this has changed from 2016 to 2020.

**Figure 7: Early career fellowships, applicants and offers by ethnicity 2016 – 2020**

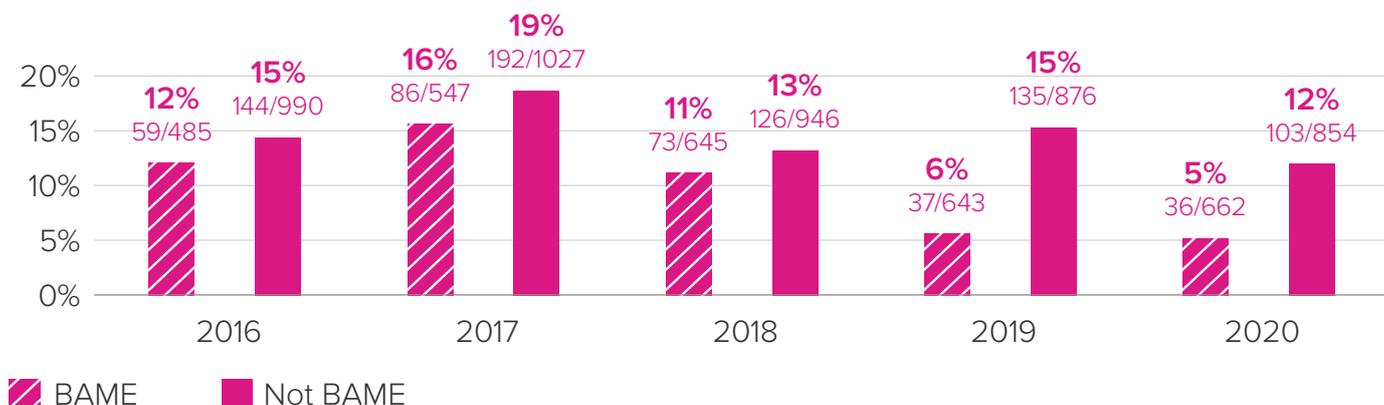


Figure 7 shows that the overall number of grant offers made increased between 2016 and 2017, and then generally decreased for all groups. However, the proportion of applications leading to offers has been lower in each year for applicants from Black and minority ethnic backgrounds than for other applicants. Furthermore, this difference has widened in 2019 and 2020, with 6% and 5% of applications respectively leading to an offer for Black and minority ethnic group applicants, compared to 15% and 12% respectively for other applicants.

**Figure 8: Newton International Fellowship, applicants and offers by ethnicity 2016 – 2020**

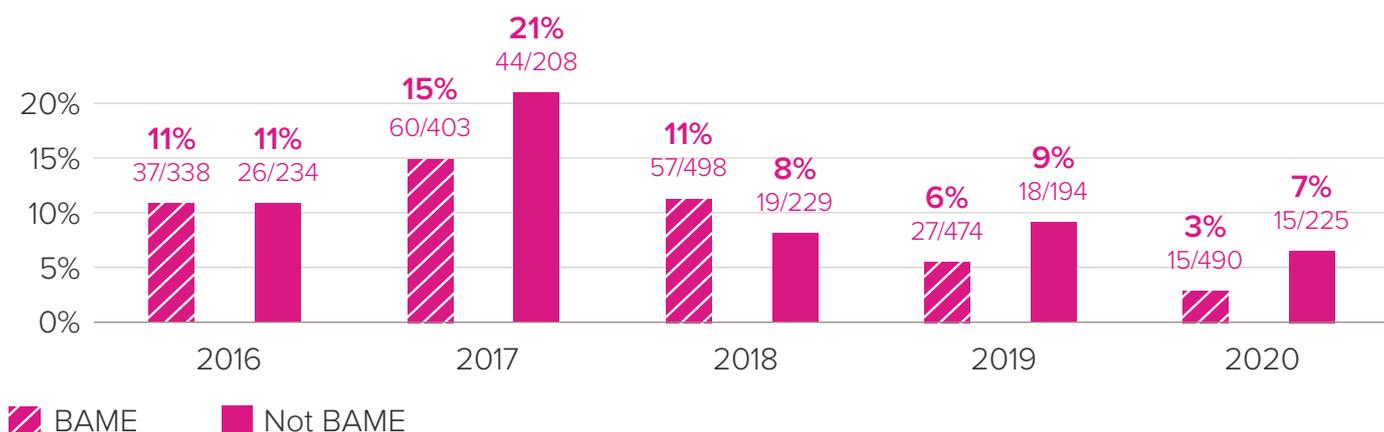


Figure 8 shows that the proportion of Newton International Fellowships applications that led to an offer for individuals from Black and minority ethnic backgrounds was lower than the proportion for other applicants in each year apart from in 2018 (where the proportion of successful applications from Black and minority ethnic applicants was higher – 11%, compared to 8% for other applicants) and in 2016, where the proportions were the same (11%).

# Publishing

The Society publishes ten high-quality, peer-reviewed science journals covering the full breadth of the biological, physical and cross-disciplinary sciences and one dedicated to the history of science. A full list of journals covered by this data is included in the Definitions section.

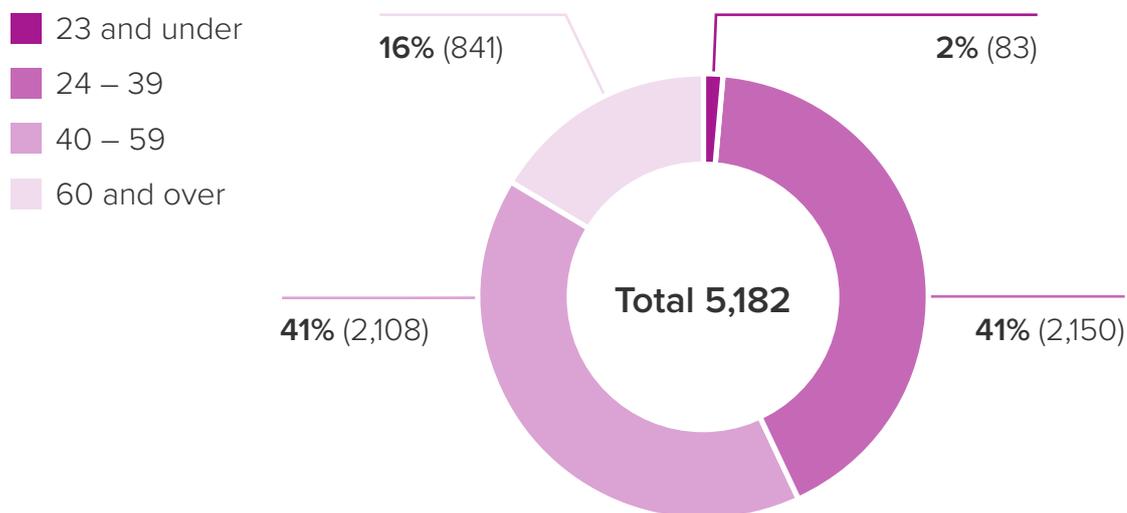
An online diversity monitoring questionnaire was sent to all authors and reviewers of the Society's journals to complete in February 2021. Of a total of 49,565 authors and reviewers who contributed to the Society's journals in 2020, 7,651 completed the survey (15%). The diversity data for authors and reviewers is presented below. Individuals who preferred not to provide their diversity data have been excluded from these data. Caution should be taken when

interpreting these figures, as the low response rate means that the data should not be considered as representative of all authors and reviewers.

## Authors

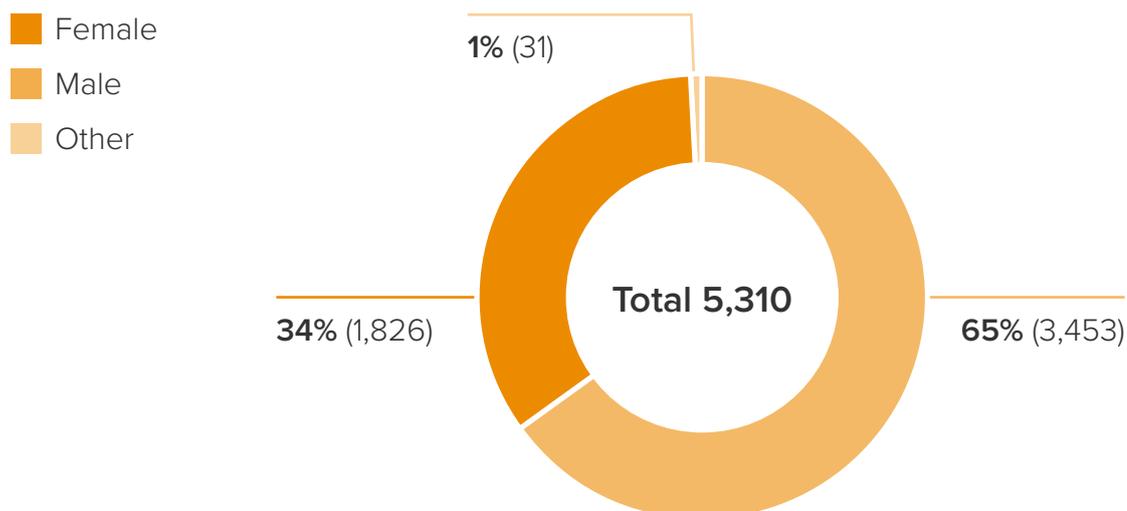
There were 39,690 authors in 2020, of whom 5,397 completed the survey (14%).

### Authors – age of respondents



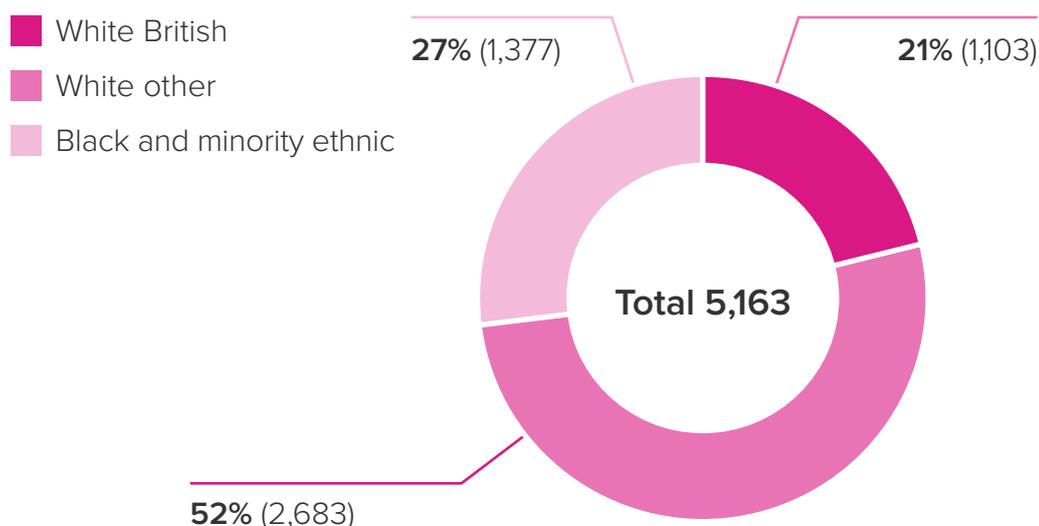
In 2020, 2% of authors who completed the diversity survey were aged 23 and under (83 individuals), compared to 3% (66 individuals) in 2019. In 2020, 41% of authors were aged 24 to 39 (2,150 individuals), compared to 3% (66 individuals) in 2019. The proportion of authors aged 40 to 59 was 41% (2,108 individuals), compared to 39% (1,738 individuals) in 2019. Individuals aged 60 and over comprised 16% of authors in 2020 (841 individuals), compared to 17% (733 individuals) in 2019.

### Authors – gender of respondents



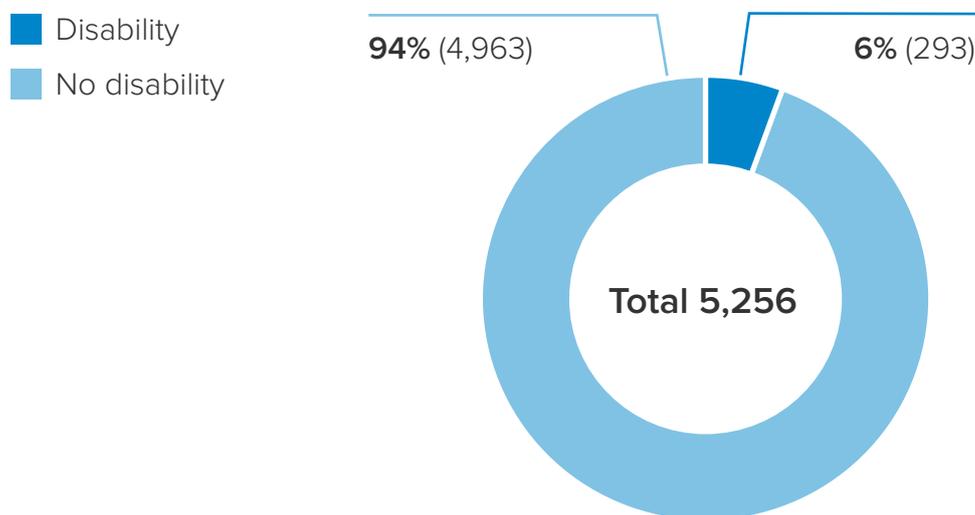
In 2020, 34% of authors who completed the diversity survey were female (1,826 individuals), which is slightly higher than the proportion in 2019 (33%, 1,509 individuals). In 2020, 65% of authors who responded to the survey were male (3,453 individuals), which is a slightly lower proportion than in 2019 (66%, 2,981 individuals). The proportion of authors who described their gender as other was 1% in 2020 (31 individuals), the same proportion as in 2019 (1%, 24 individuals).

## Authors – ethnicity of respondents



In 2020, 27% of authors who completed the diversity survey were from Black or minority ethnic backgrounds (1,377 individuals), compared to 26% (1,156 individuals) in 2019. In 2020, 52% of authors (2,683 individuals) were White other, compared to 54% (2,362 individuals) in 2019. The proportion of authors whose ethnicity was White British was 21% (1,103 individuals) in 2020, compared to 20% (884 individuals) in 2019.

## Authors – disability of respondents

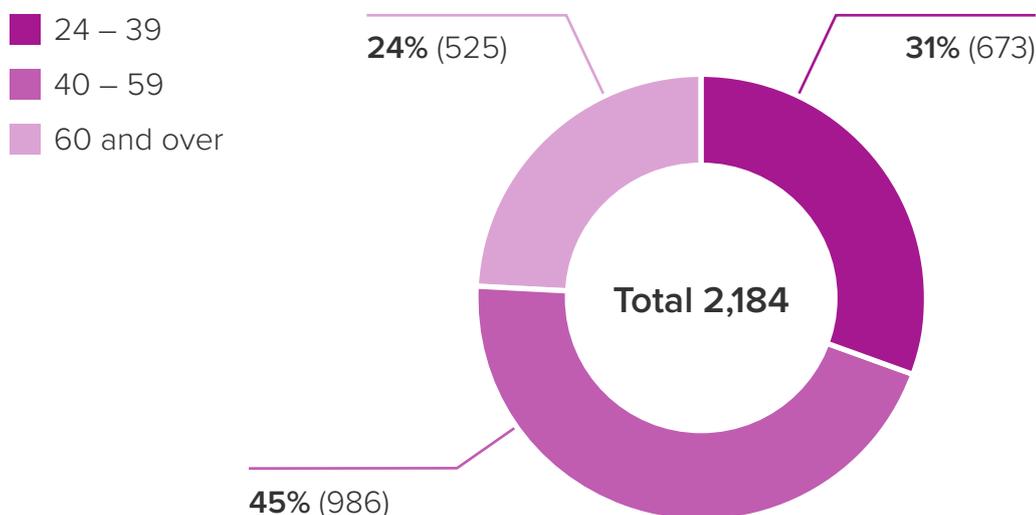


In 2020, 6% of authors said they had a disability (293 individuals). This proportion is slightly higher than in 2019 (5%, 221 individuals). In 2020, 94% of authors said they did not have a disability (4,963 individuals) compared to 95% (4,254) in 2019.

## Reviewers

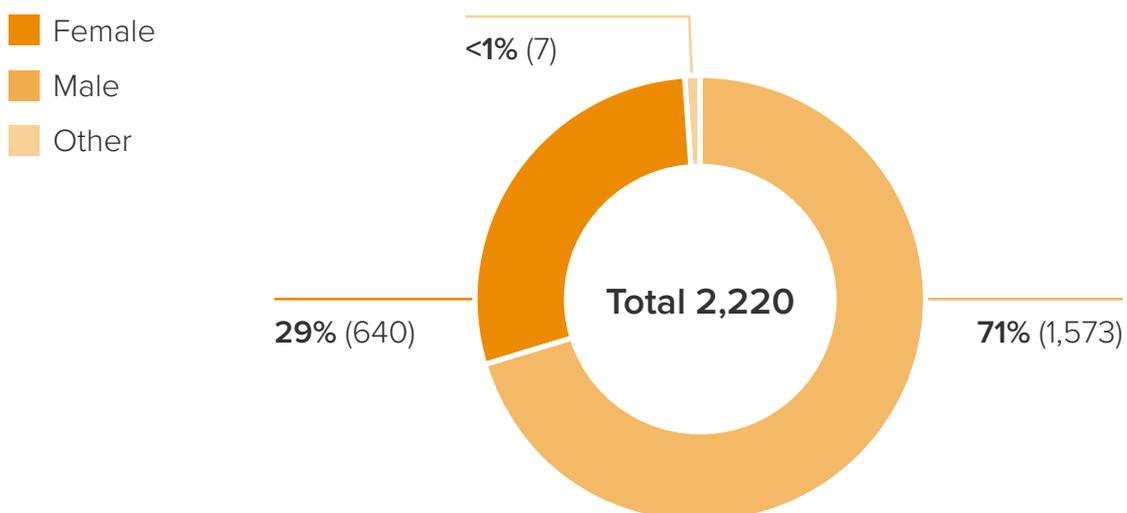
There were 9,875 reviewers in 2020, of whom 2,254 completed the survey (23%).

### Reviewers – age of respondents



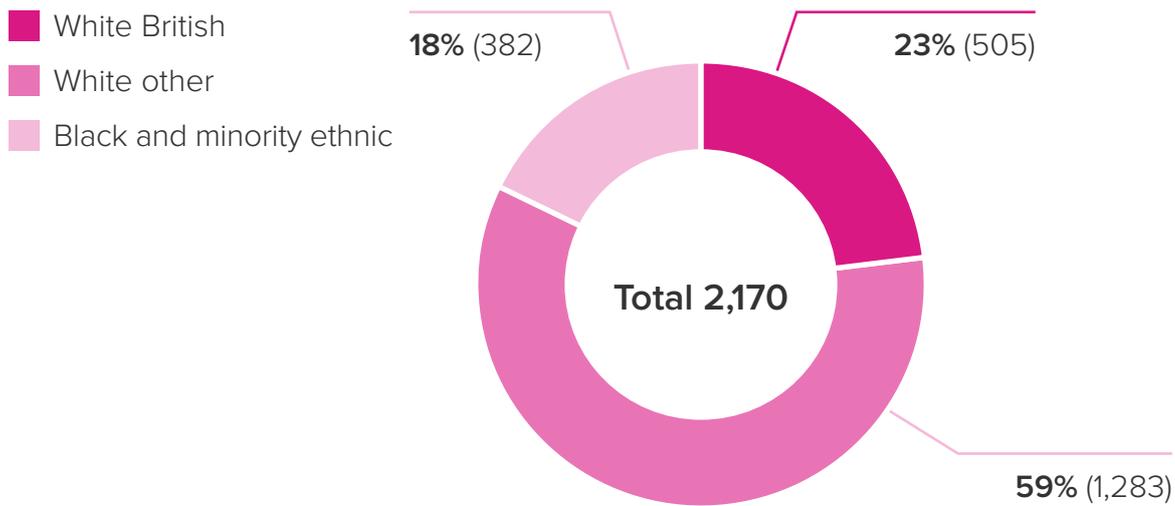
In 2020, 31% of reviewers who responded to the diversity survey were aged 24 to 39 (673 individuals), the same proportion as in 2019 (31%, 646 individuals). The proportion of reviewers aged 40 to 59 was 45% (986 individuals) in 2020, compared to 46% (943 individuals) in 2019. Individuals aged 60 and over comprised 24% of reviewers in 2020 (525 individuals), a slight increase in proportion from 2019, when 23% of reviewers were aged 60 and over (465 individuals).

### Reviewers – gender of respondents



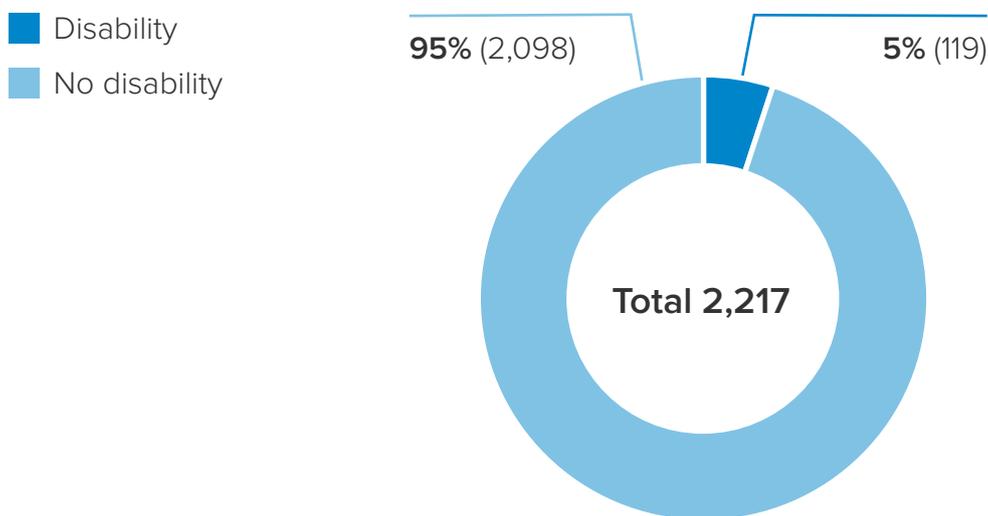
In 2020, 29% of reviewers who responded to the diversity survey were female (640 individuals), which is higher than the proportion in 2019 (27%, 574 individuals). In 2020, 71% (1,573) of reviewers were male, which is a lower proportion of respondents than in 2019 (72%, 1,489 individuals). The proportion of reviewers who described their gender as other was <1% in 2020 (7 individuals), lower than in 2019 (1%, 14 individuals).

## Reviewers – ethnicity of respondents



In 2020, 18% of reviewers who responded to the diversity survey were from Black or minority ethnic backgrounds (382 individuals), the same proportion as in 2019 (18%, 358 individuals). In 2020, 59% of reviewers (1,283 individuals) were White other, compared to 61% (1,246 individuals) in 2019. The proportion of reviewers whose ethnicity was White British was 23% (505 individuals) in 2020, a higher proportion than in 2019 (21%, 426 individuals).

## Reviewers – disability of respondents



In 2020, 5% of reviewers said they had a disability (119 individuals), the same proportion as in 2019 (5%, 110 individuals). In 2020, 95% of reviewers said that they did not have disability (2,098 individuals), the same proportion as in 2019 (95%, 1,959 individuals).

## Trends over time – Publishing

**Figure 9: Proportion of authors declaring a disability 2017 – 2020**

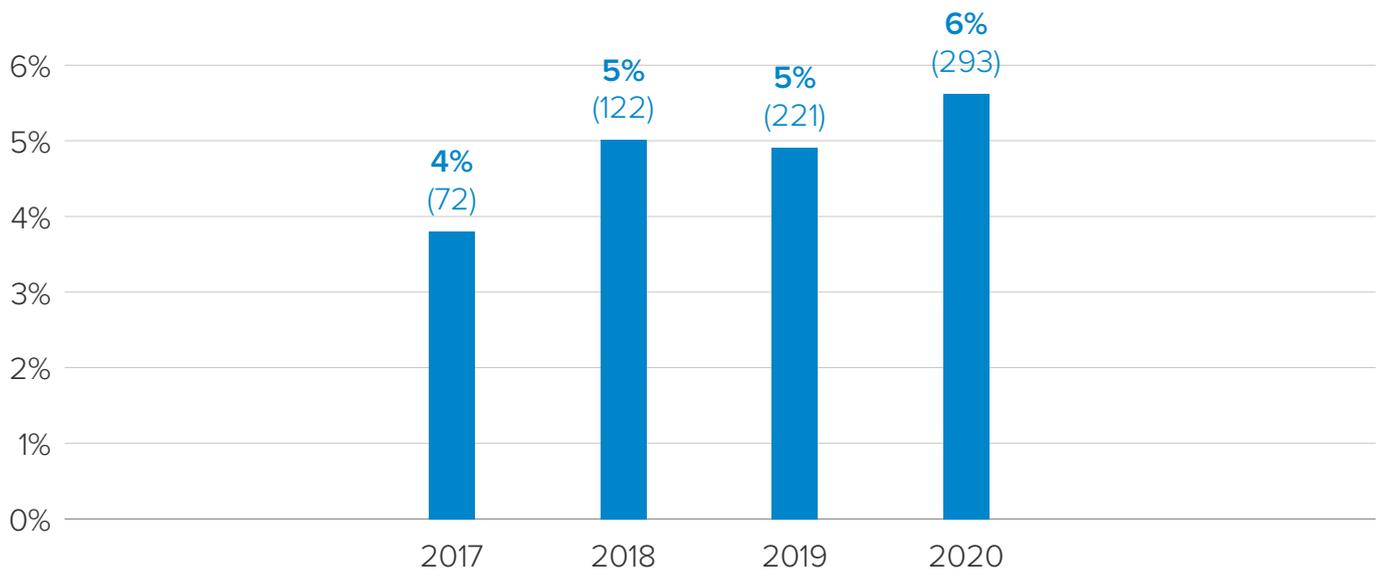


Figure 9 shows that the proportion of authors who declared a disability has increased each year between 2017 and 2020. This increase from 4% in 2017 to 6% in 2020 is statistically significant ( $p < 0.005$ ).

**Figure 10: Proportion of reviewers who are aged 60 and over 2018 – 2020**

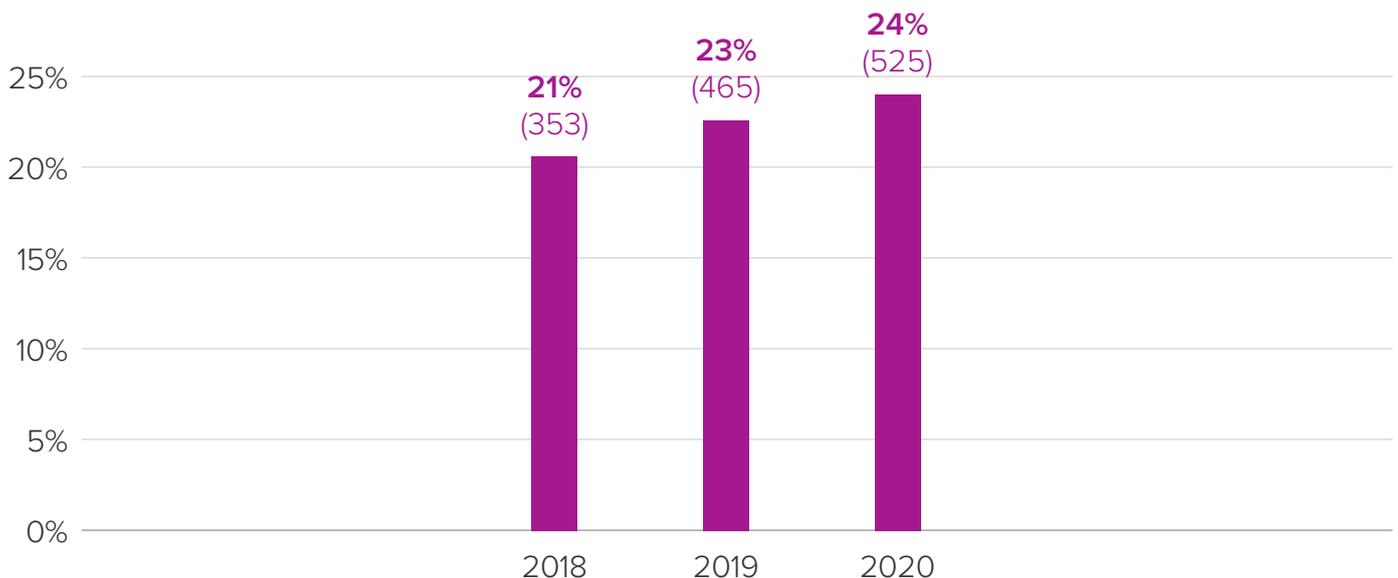


Figure 10 shows that the proportion of reviewers who were aged 60 or over increased from 21% in 2018 to 24% in 2020. This increase is statistically significant ( $p < 0.01$ ).

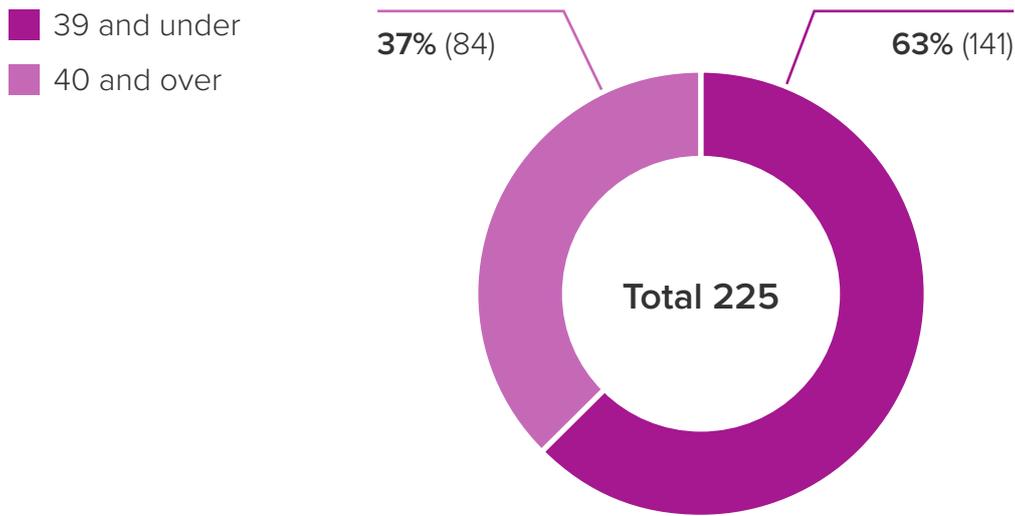
# Royal Society Staff

As at 15 January 2021, the Royal Society employed 225 staff. Age and gender data is recorded after staff are recruited through the staff HR portal, ADP. The response rate for age and gender data is 100%.

Ethnicity and disability data is not currently collected through ADP. In January 2021, a 'snapshot' survey was carried out to provide accurate data on the ethnicity and disability of Royal Society staff. Of 225 staff employed at that time, 197 responded to the question on ethnicity (88%) and 187 responded to the question on disability (83%).

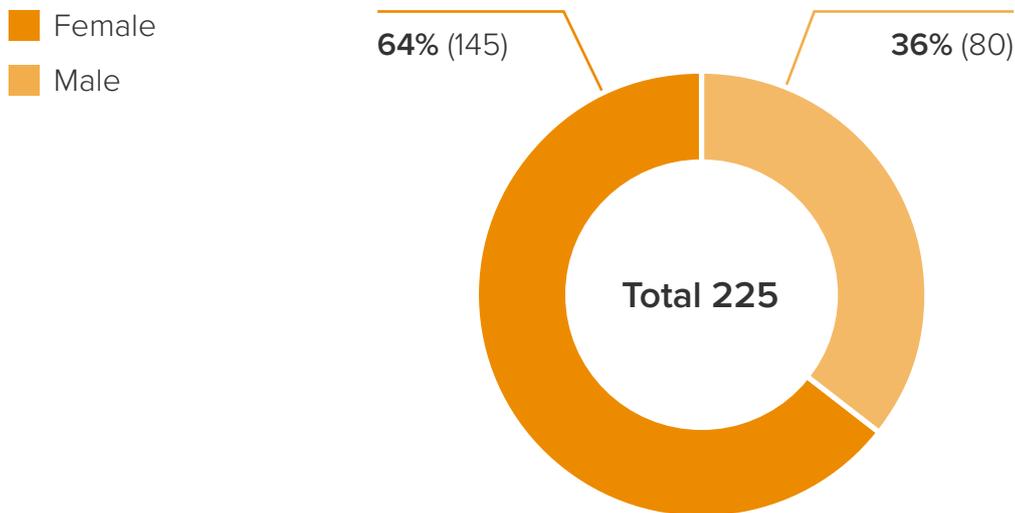
Diversity data for Royal Society staff was included in last year's annual diversity data report for the first time, and comparisons to the 2019 figures are included in this section.

## Royal Society staff – age of respondents



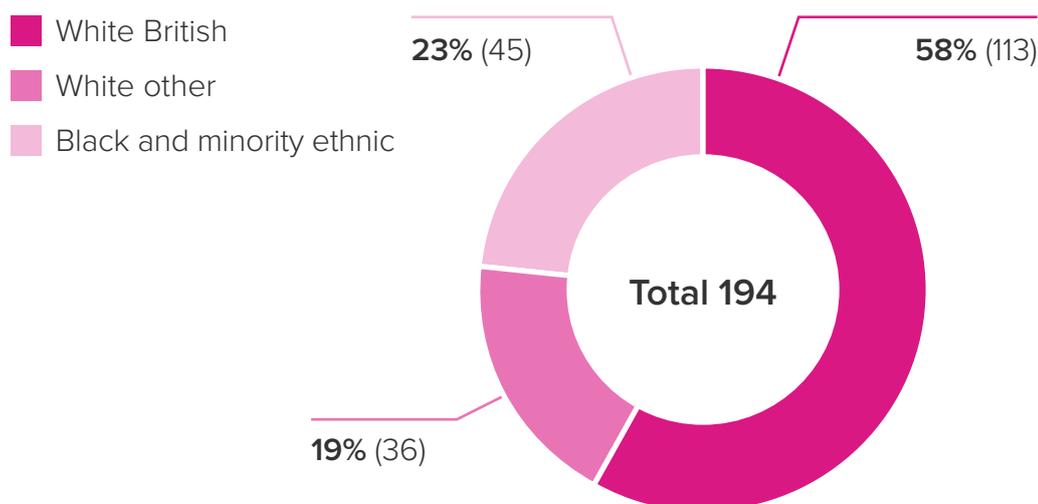
In 2020, 63% of staff were aged 39 and under (141 individuals) which is a decrease from 67% (147 individuals) in 2019. In 2020, 37% of staff (84 individuals) were aged 40 and over, an increase from 33% (71 individuals) in 2019.

## Royal Society staff – gender of respondents



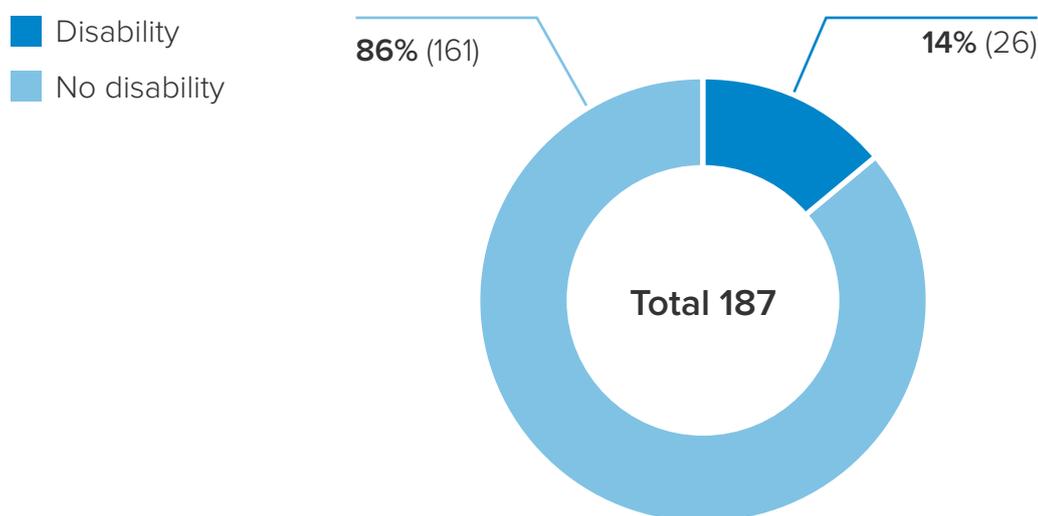
In 2020, 64% of staff were female (145 individuals) and 36% were male (80 individuals). In 2019, 65% of staff were female (141 individuals) and 35% were male (77 individuals).

## Royal Society staff – ethnicity of respondents



In 2020, 23% of staff who responded to the survey said they were from Black or minority ethnic backgrounds (45 individuals). This is an increase from 18% (31 individuals) in 2019. The majority of staff respondents in 2020 were White British (58%, 113 individuals), compared to 61% (102 individuals) in 2019. The proportion of staff from White other backgrounds was 19% (36 individuals) in 2020, compared to 21% (35 individuals) in 2019.

## Royal Society staff – disability of respondents



In 2020, 14% of staff said they had a disability (26 individuals), a slight increase compared to 2019 (13%, 21 individuals). In 2020, 86% of staff said they did not have a disability (161 individuals) compared to 87% (146 individuals) in 2019.

# Gender pay gap

The Society voluntarily reports gender pay gap data in order to show how we compare to other organisations.

The 'snapshot' data below reflects the pay gap as of 5 April 2020.

The median gender pay gap is the percentage difference between the midpoints in the ranges of hourly pay for male employees and female employees. It is calculated by listing all the pay amounts in numerical order and taking the middle amount.

## Gender pay gap mean and median<sup>9</sup>

### MEAN



National: 14.6%

### MEDIAN



National: 15.5%

In 2020, the Society had a 9.3% median gender pay gap in favour of men, compared to the national average of 11.2%. The median gender pay gap has reduced since 2019, when the Society had a 10.4% gender pay gap in favour of men.

The mean (or average) is calculated by adding the gross hourly earnings of employees in the relevant group and dividing that figure by the number of employees in that group. It should be noted that the mean is more susceptible to being skewed by outlying values - for example, a high proportion of one gender in the upper or lower quartiles of the pay structure.

In 2020, the Society had a mean gender pay gap of -2.5%, in favour of women. This compares to the national average of 11.8% in favour of men. The mean gender pay gap for the Society has decreased since 2019, when it was -4.6%.

<sup>9</sup> Gender pay gap in the UK: 2020, Office for National Statistics, 3 November 2020: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/genderpaygapintheuk/2020>

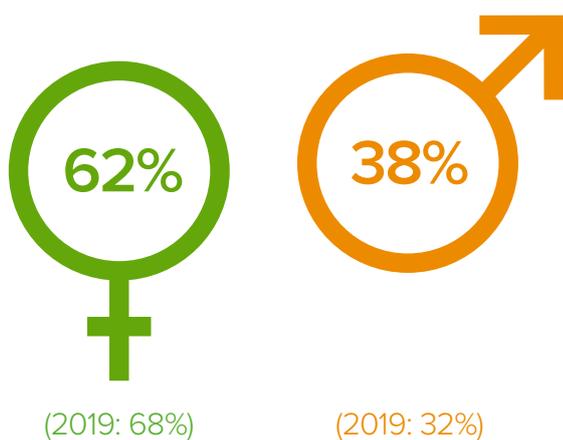
## Proportion of men and women in each quartile of the Society's pay structure

Gender pay gap referenced in quartiles is based on mean calculations.

■ Female ■ Male

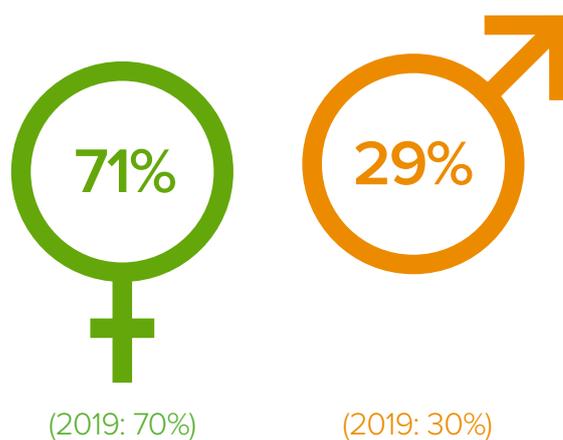
### Quartile 1:

Women paid **1% less** than men



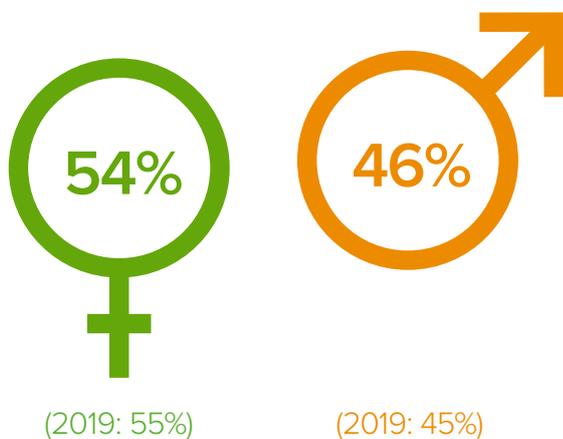
### Quartile 2:

Women paid **1% less** than men



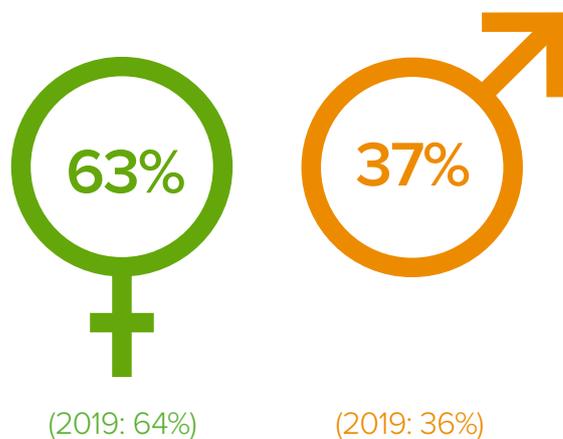
### Quartile 3:

Women paid **2% more** than men



### Quartile 4:

Women paid **8% more** than men



# Definitions

Members of the following committees, panels and working groups were surveyed for this diversity data report:

## Committees and panels

(Committees with grant-giving responsibilities are asterisked).

The Royal Society Council

Academies Partnership in Supporting Excellence in Cross-disciplinary Research Award Committee (APEX)\*

Advisory Committee on Mathematics Education (ACME)

Armourers & Brasiers' Company Prize Committee

Audit Committee

Awards Committee: Biological Sciences

Awards Committee: Physical Sciences

Awards Committee: Premier

Committee on General and Honorary Candidates

Commonwealth Science Conference Grants Committee\*

Diversity Committee

Dorothy Hodgkin Fellowships Selection Committee\*

Education Committee

Evaluation Panel

Future Leaders: African Independent Research (Biological)\*

Future Leaders: African Independent Research (Physical)\*

Grants Committee\*

Hooke Committee

Industry Fellowships Joint Panel\*

International Collaboration Awards Committee\*

International Exchanges Committee\*

Investment Committee

Library Committee

Milner Award Committee

Newton Advanced Fellowships Panel: Biological Sciences\*

Newton Advanced Fellowships Panel: Physical Sciences\*

Newton International Fellowships Committee: Biological Sciences\*

Newton International Fellowships Committee: Physical Sciences\*

Nominations Committee

Partnership Grants Allocating Panel

Paul Instrument Fund Committee\*

Planning and Resources Committee

Public Engagement Committee

Publishing Board

Remuneration Committee

Research Appointment Panel A(i)\*

Research Appointment Panel A(ii)\*

Research Appointment Panel A(iii)\*

Research Appointment Panel B\*

Research Grants Board 20K: Biological Sciences\*

Research Grants Board 20K: Physical Sciences\*

Research Professorships Panel

Rosalind Franklin Award Committee

Royal Society Challenge Grants Panel\*

Royal Society Leverhulme Trust Senior Research Fellowship Panel\*

Royal Society Trading Limited, Board of

Royal Society Wolfson Fellowships Committee\*

Science, Industry and Translation Committee  
Science Policy Committee  
Science Policy Expert Advisory Committee  
Sectional Committee 0: Computer sciences  
Sectional Committee 1: Mathematics  
Sectional Committee 2: Astronomy and physics  
Sectional Committee 3: Chemistry  
Sectional Committee 4: Engineering  
Sectional Committee 5: Earth and environmental sciences  
Sectional Committee 6: Biochemistry and molecular cell biology  
Sectional Committee 7: Microbiology, immunology and developmental biology  
Sectional Committee 8: Anatomy, physiology and neurosciences  
Sectional Committee 9: Organismal biology, evolution and ecology  
Sectional Committee 10: Health and human sciences  
Sir Henry Dale Fellowship Panel\*  
Summer Science Exhibition Committee

### Science policy working groups

2021 Energy Forum  
ACME Primary and Early Years Mathematics Contact Group  
ACME Secondary Mathematics Contact Group  
ACME A Level Mathematics Contact Group  
ACME Post-16 Pathways Mathematics Contact Group  
Ammonia Steering Group  
Animate Materials Steering Group  
Broad and Balanced Contact Group  
Climate Change and Health Steering Group  
Climate Change Working Party

Data Community of Interest  
Data Management and Use Working Group  
DELVE Committee  
DELVE Working Group  
Digital Technology and Information Working Group  
Digital Technologies and the Planet Working Group  
Dynamics of Data Science Working Group  
Educational Research Steering Group  
Emerging Technologies Working Party  
Everyone's a Scientist Steering Group  
Explainable AI Working Group  
Genetic Technologies Contact Group  
Global Environmental Research Council (GERC)  
Human Transformation Working Group  
Hydrogen Steering Group  
Living Landscapes Steering Group  
Long-term Energy Storage Working Group  
Mathematics Education Community of Interest  
Maths Futures Programme Board  
Net Zero Panel  
Neural Interfaces Steering Group  
Nuclear Cogeneration Steering Group  
Privacy Enhancing Technologies (PETs) Working Group  
RAMP Steering Committee  
Research and Innovation Contact Group  
Research System Community of Interest  
SET C Committee  
Shale Gas Steering Group  
US-UK Science Forum Sustainable Agriculture 2019 – 2020 Steering Group

## Research Fellowship schemes

### Dorothy Hodgkin Fellowship

The Dorothy Hodgkin Fellowship offers a recognised first step into an independent research career for outstanding scientists and engineers at an early stage of their research career who require a flexible working pattern due to personal circumstances, such as parenting, caring responsibilities or health issues.

### Industry Fellowship

The Industry Fellowship is for academic scientists who want to work on a collaborative project with industry, and for scientists in industry who want to work on a collaborative project with an academic organisation. It aims to enhance knowledge transfer in science and technology between those in industry and those in academia in the UK.

The Short Industry Fellowship enables scientists employed in industry or academia and/or their postdoctoral researcher to have shorter, more dynamic engagements between academia and industry, working on a mutually beneficial and collaborative project.

### Newton International Fellowship

The Newton International Fellowship provides the opportunity for outstanding early stage postdoctoral researchers from all over the world to work at UK research institutions for a period of two years. The scheme is jointly run by the British Academy, the Academy of Medical Sciences and the Royal Society.

### Sir Henry Dale Fellowship

The Sir Henry Dale Fellowship is for outstanding postdoctoral scientists wishing to build their own UK-based, independent research career addressing an important biomedical question. It brings together the Royal Society and the Wellcome Trust in their shared commitment to supporting the future leaders of biomedical research.

### University Research Fellowship

The University Research Fellowship is for outstanding scientists who are in the early stages of their research career and have the potential to become leaders in their field. Research must be within the Society's remit of natural sciences. Those appointed are expected to be strong candidates for permanent posts in universities at the end of their research fellowships.

### Royal Society Wolfson Fellowship

The Royal Society Wolfson Fellowship (previously known as the Wolfson Research Merit Award) provides long-term flexible funding for senior career researchers recruited or retained to a UK university or research institution in fields identified as a strategic priority for the host department or organisation. The scheme covers all areas of the life and physical sciences, including engineering, but excluding clinical medicine. It is jointly funded by the Wolfson Foundation and the Royal Society through its BEIS grant.

## Publishing

The Editorial Boards, authors and reviewers of the following journals were asked to complete a diversity survey in February 2021:

*Biology Letters*

*Interface*

*Interface Focus*

*Notes and Records*

*Open Biology*

*Philosophical Transactions A*

*Philosophical Transactions B*

*Proceedings A*

*Proceedings B*

*Royal Society Open Science*

## Statistical significance

Statistical significance testing is used to quantify the probability of an observed difference occurring ‘by chance’. More precisely, the p-value is the probability of observing a difference as extreme or more extreme than what would be observed if in fact there were no true underlying change. If a difference in proportion is statistically significant (for example associated with a low p-value), this suggests that it is unlikely to have occurred

by chance. The smaller the p-value, the more likely that the differences measured are not a result of chance. Whether the difference is practically meaningful depends not only on its statistical significance but also on its estimated magnitude.

If the p-value is 5% or less, this means that there would have been a less than 1 in 20 probability of observing the difference that was observed (or a more extreme difference) by chance.<sup>10</sup>

‘Chance’ here refers to the fact that the numbers in question are finite. For example, if the proportion of committee members aged under 50 increased from 3 out of 23 (13%) in one year to 4 out of 23 (17%) in a later year, such an observed difference would not be surprising even if there were no underlying true change. In other words, with such numbers, we would not be surprised that, had some other unrelated factors happened to be different (for example the availability of those invited), then the change could very plausibly have transpired the other way around, with a decrease from 4 out of 23 one year to 3 out of 23 the next, for example. There wouldn’t be strong evidence here to conclude therefore that there had been a true change.

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10. A z-value of 1.96 will relate to a p-value of 0.05. If the absolute value of the z-value is higher than 1.96, then the difference is deemed to be statistically significant at 5% or  $p < 0.05$ . Other (stronger) significance thresholds are highlighted in this note, where z-values are considerably greater than 1.96. Examples include  $p < 0.01$ ,  $p < 0.005$  and  $p < 0.001$ .

**As a worked example:**

The actual total number of committee members is substantially larger than in the hypothetical example above, even though the percentages are similar.

In 2016, 13% of committee members were aged under 50 (total membership = 930).

In 2020, 17% of committee members were aged under 50 (total membership = 964).

An appropriate statistical test here is a z-test. This is based on a normal approximation to the difference between the mean of two binomial distributions, that is a difference in proportions.<sup>11</sup> The formula for the z-test statistic is given by:

$$z = (p_2 - p_1) / \sqrt{\left(\frac{p_1 * (1 - p_1)}{n_1}\right) + \left(\frac{p_2 * (1 - p_2)}{n_2}\right)}$$

where p1 and p2 are the respective proportions, and n1 and n2 are the respective totals in the two years.

This value of z is then compared to the tails of a standard normal distribution, to calculate a p-value of 0.03. This means that if there were no change in the true underlying probability of being a committee member under the age of 50 between the two years, then a difference such as (or more extreme than) that which was observed would be quite surprising – it would have only a 3% chance of occurring. Conventionally, precise p-values are not quoted, but rather only the fact of whether or not they fell below a particular threshold. Thus, p=0.03 is often reported as p<0.05, and the result (an increase in proportion of those aged <50) is said to be statistically significant at the 5% level.

$$z = \frac{p_2 - p_1}{\sqrt{\left(\frac{p_1 * (1 - p_1)}{n_1}\right) + \left(\frac{p_2 * (1 - p_2)}{n_2}\right)}} = \frac{0.17 - 0.134}{\sqrt{\left(\frac{0.134 * 0.866}{930}\right) + \left(\frac{0.17 * 0.83}{964}\right)}} = 2.186$$

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11. In this report, the z-Test Approximation of the Binomial has been used to calculate statistical significance. This involves deriving a ‘z-statistic’, which is based on the proportions of individuals with certain demographic characteristics in a group in each of two different years and the sample sizes upon which these are based, for example, the proportion of committee members aged under 50 in 2016 and in 2020. The bigger (either positive or negative) the size of the z-statistic, the less likely it is that such an observed difference (or one more extreme than it) would have occurred “by chance”, that is in the absence of a true underlying change.



The Royal Society is a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The Society's fundamental purpose, as it has been since its foundation in 1660, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.

The Society's strategic priorities emphasise its commitment to the highest quality science, to curiosity-driven research, and to the development and use of science for the benefit of society.

These priorities are:

- Promoting excellence in science
- Supporting international collaboration
- Demonstrating the importance of science to everyone

**For further information**

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