

## Research and innovation in the North West

The UK government has committed to increase public R&D investment from £14.8 billion a year in 2021/22 to £20 billion annually by 2024/25. It has also outlined plans to ‘level up’ the UK, including a focus on infrastructure, innovation and energy security, supporting the delivery of net zero carbon emissions by 2050.

Similarly, the Labour opposition in Westminster has committed to establishing an ambitious long-term strategy for science supported by an overall R&D investment target and ten-year funding settlement that “[creates the predictability]

for discovery-led science, but is agile and able to respond to emerging technologies and seize opportunities for the UK to lead in future industries”.

What do these ambitions to increase investment in UK research and innovation mean for the North West? This document provides insight into the current research and innovation landscape in the North West to inform discussions over how people across the region can contribute to and share the benefits of R&D investment in the UK.

### How much is spent on R&D activity in the North West<sup>1</sup>?

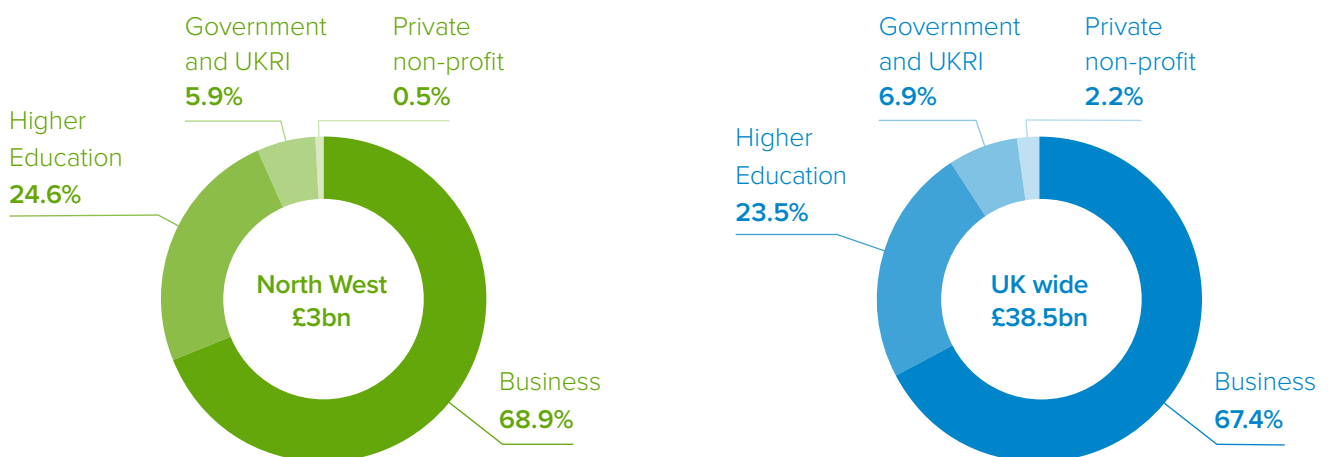
FIGURE 1



### Who performs R&D in the North West?

FIGURE 2

Percentage distribution of R&D spend in the North West and UK wide, 2019<sup>3</sup>



Note: The 2019 Gross Domestic Expenditure on R&D data should be treated as estimates. The ONS have outlined these are the current best estimates, but they are improving their methodology, including making improvements to the measurement of business and higher education sectors. The most recent available data for the North West is for 2019. More recent ONS data is available for the combined region of the North (North East, North West, Yorkshire and The Humber).

## Where is R&D concentrated in the North West?

FIGURE 3



37,805 professional, scientific and technical workplaces\*<sup>4</sup>

12 universities<sup>5</sup>

15 science parks<sup>6</sup>

19 business incubators and accelerators<sup>7</sup>

\*Includes professional, scientific and technical workplaces as defined by ONS coding (Divisions 69 – 75).

Note: The R&D sites listed may not be exhaustive.

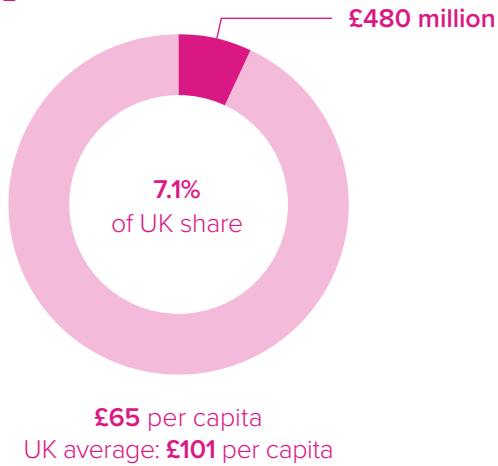
## How is R&D in the North West funded and supported?

R&D is funded and supported in many different ways. This includes direct investment from public, private, charitable and overseas sources, as well as indirect measures that encourage further private investment such as R&D tax credits.

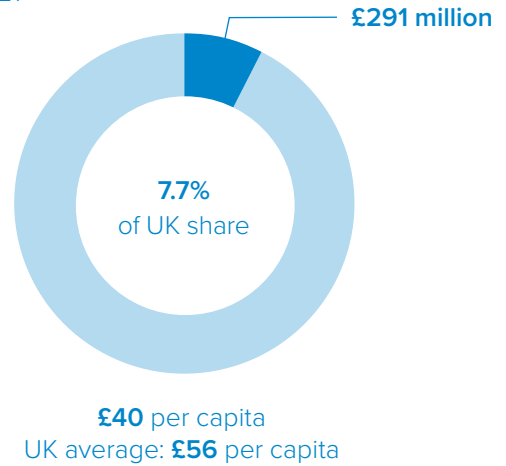
FIGURE 4

Examples of R&D funders in the North West.

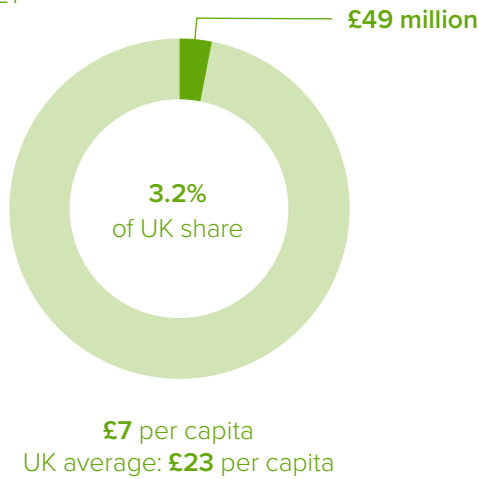
### R&D tax credits<sup>8</sup> 2021 – 2022



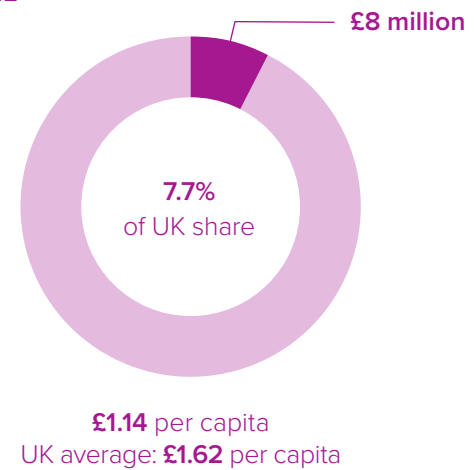
### Research councils<sup>9</sup> 2020 – 2021



### Innovate UK<sup>10</sup> 2020 – 2021



### The Royal Society<sup>11</sup> \* 2021 – 2022

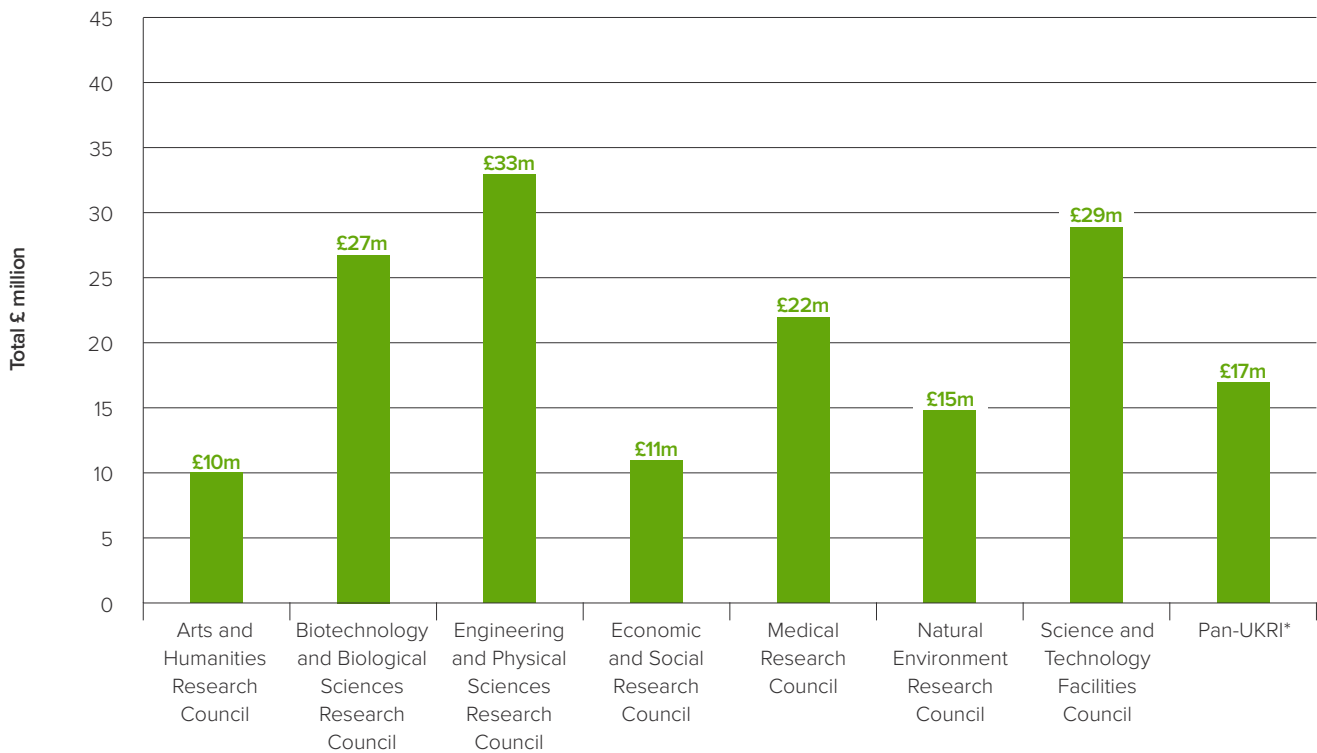


\* Grants are mostly made to higher education institutions but may also include some payments made to individuals and companies. The figure is by location of the lead organisation, however some schemes may collaborate with institutions outside of the UK.

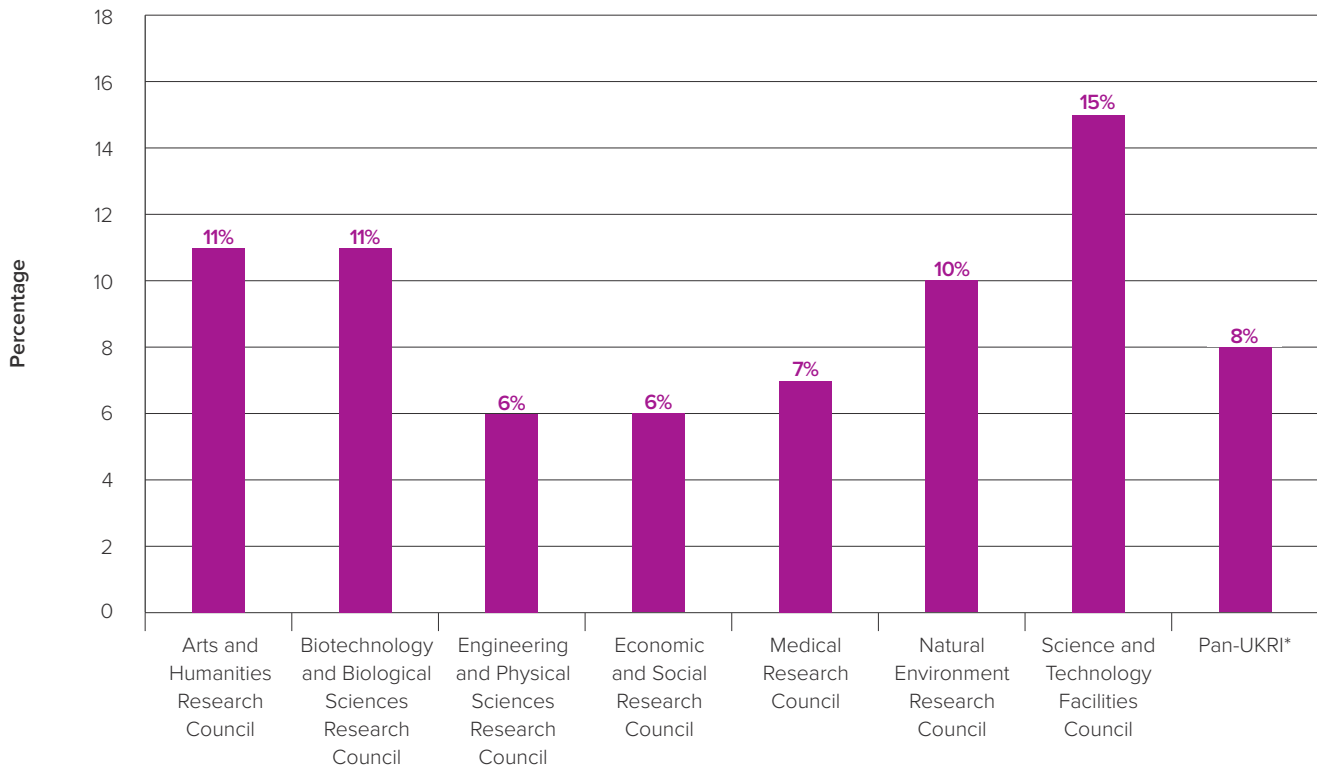
Note: Per capita figures calculated using ONS mid-2020 populations.<sup>12</sup>

**FIGURE 5**

Total value of grants awarded to the North West from each research council in 2022 – 2023<sup>13</sup>



Percentage of funding awarded to the North West from each research council in 2022 – 2023



\* Pan-UKRI includes COVID-19 related research funding, Fund for International Collaboration (FIC), Future Leaders Fellowships (FLF), Global Challenges Research Fund (GCRF), Industrial Strategy Challenge Fund (ISCF), Newton Fund, Strategic Priorities Fund (SPF) and Strength in Places Fund (SIPF).

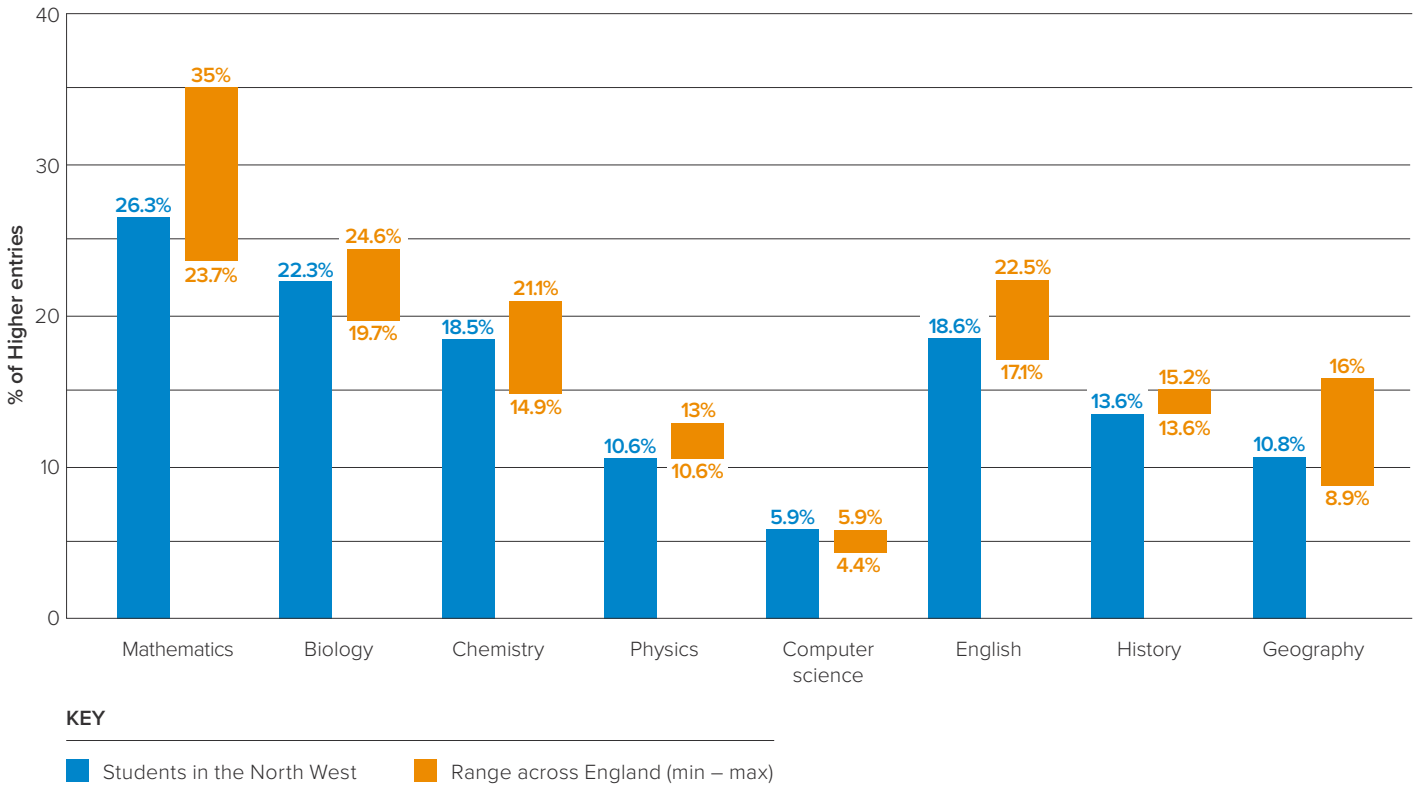
Note: This excludes non-competitive grants, such as funding for UKRI institutes.

## There is no R&D without people

A thriving R&D environment in the North West requires a talented workforce to perform research as well as young people in the pipeline who are equipped with the skills they will need in the future economy.

FIGURE 6

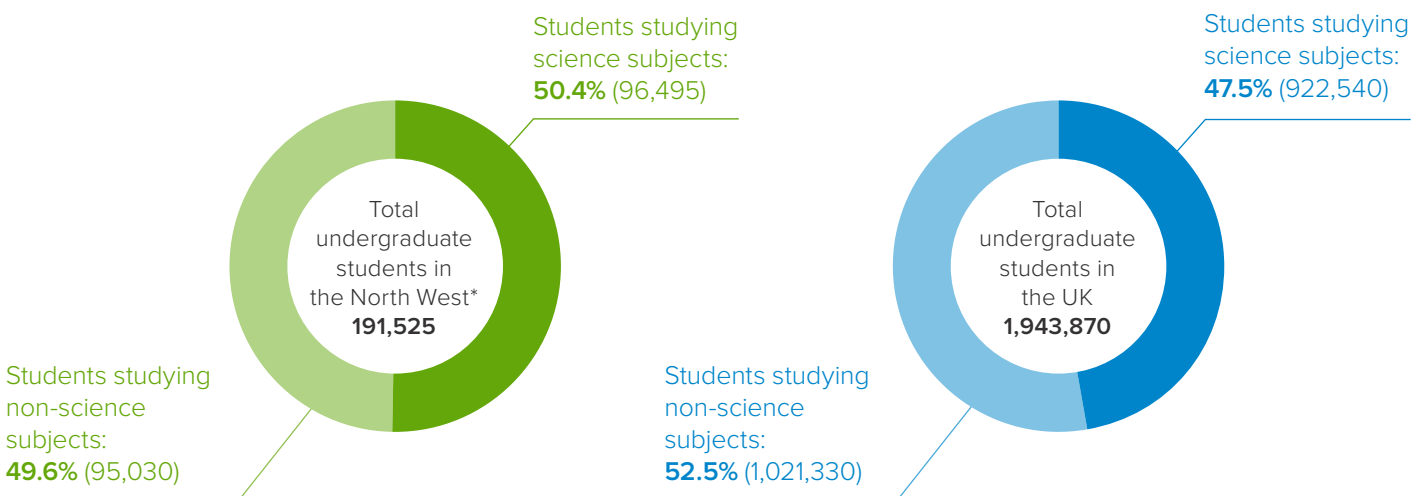
What proportion of A level students in the North West take A levels in science subjects, 2021 – 2022<sup>14</sup>?



Note: Selected non-science subjects are shown as an example of uptake in other disciplines.

FIGURE 7

What are undergraduates studying at universities in the North West, 2020 – 2021<sup>15</sup>?

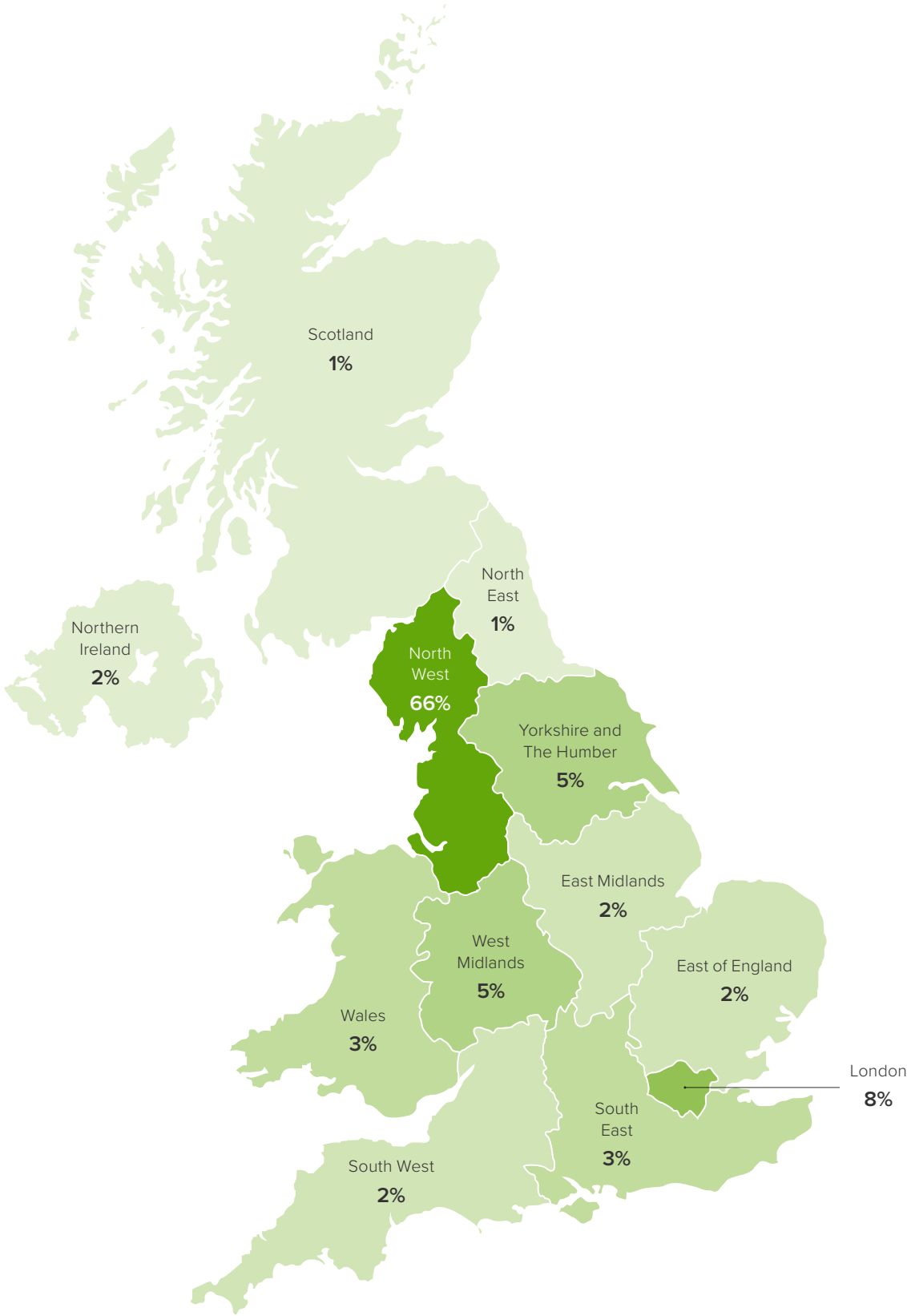


\* Total undergraduate students in the North West does not include students studying at the Open University who are based in the North West.

Note: The HESA science grouping includes subjects like medicine, nursing, and agriculture which may not be included in other definitions of STEM (science, technology, engineering, and maths). Includes CAH Level 1 01-11, 13 and 26 (geography – natural sciences).

**FIGURE 8**

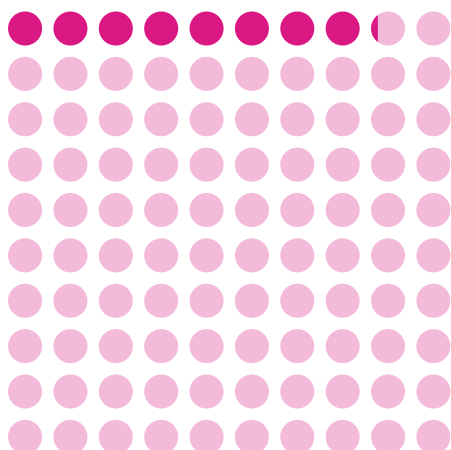
Proportion of North West graduates working in the different regions and nations of the UK, 2019 – 2020<sup>16</sup>.



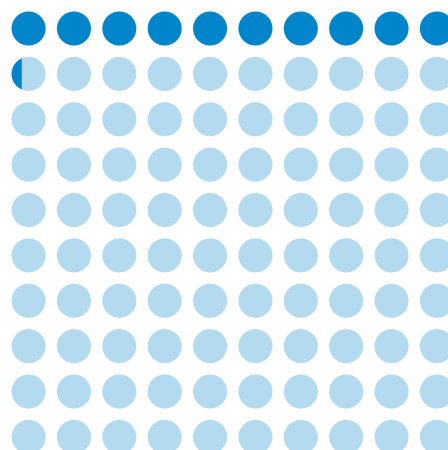
Note: Sample only includes surveyed graduates who remained in the UK for work after graduation. Proportion may not add up to 100% due to rounding.

FIGURE 9

How many people are employed in R&D in the North West?



Companies in the North West had **23,000** staff employed in R&D in 2020, **8.2%** of UK total<sup>17</sup>.



The North West had **16,000** research staff employed in its universities in 2020, **10.3%** of the UK total<sup>18</sup>.

Note: University research staff refers to academic staff with roles in both teaching and research or in research only. Both full-time and part-time research staff are included in the figure. All figures are rounded to the nearest 1,000.

## Find out more

### Investing in UK R&D

Explore research and innovation in other areas of the UK and read the Royal Society's briefings on R&D investment in the UK produced together with the other UK National Academies. Find out more on [royalsociety.org/uk-research-and-innovation](https://royalsociety.org/uk-research-and-innovation)

### Industry programme

The Royal Society's Science and Industry programme connects industry with the Society and promotes the value of science to the economy by bringing together industry, academia, and government. Find out more on [royalsociety.org/industry](https://royalsociety.org/industry)

### Promoting excellence in science

The Royal Society promotes excellence in science and supports international collaborations by funding research in the life and physical sciences, including engineering, in the UK and internationally. Find out more about the Royal Society's grants programmes on [royalsociety.org/grants](https://royalsociety.org/grants)

## References

1. Office for National Statistics. 2019. Gross domestic expenditure on research and development, by region and sector performing R&D, UK.
2. Office for National Statistics. Estimates of the population mid-2020 for the UK, England and Wales, Scotland and Ireland.
3. Office for National Statistics. 2019. Gross domestic expenditure on research and development, by region and sector performing R&D, UK.
4. Office for National Statistics. UK business; activity, size and location: 2023.
5. UCAS. North West. <https://www.ucas.com/study-in/north-west> (accessed on 13 November 2023).
6. Science Park Association 2023. <https://www.ukspa.org.uk/our-members> (accessed on 13 November 2023).
7. SAIL, UK startup support ecosystem. Startup Accelerators and Incubator List Database. <https://sail.carrd.co> (accessed on 22 September 2023).
8. UK Government. Corporate tax: Research and Development Tax Credits, 2022.
9. UKRI. Research council spend, ITL1, ITL2, ITL3, financial year 2020 to 2021. <https://www.ukri.org/publications/geographical-distribution-of-spend-data-financial-year-2020-to-2021> (accessed on 13 November 2023).
10. UKRI. Innovate UK spend, ITL1, ITL2, ITL3, financial year 2020 to 2021. <https://www.ukri.org/publications/geographical-distribution-of-spend-data-financial-year-2020-to-2021> (accessed on 13 November 2023).
11. Royal Society funding streams to UK research institutions in the 2022/23 financial year.
12. Office for National Statistics. Estimates of the population mid-2020 for the UK, England and Wales, Scotland and Ireland.
13. UKRI, Competitive Funding Decisions Dashboard, 2022 – 23. <https://public.tableau.com/app/profile/uk.research.and.innovation.ukri/viz/UKRICompetitiveFundingDecisions2022-23/CompetitiveFundingDecisions> (accessed on 29 November 2023).
14. Department for Education. A level and other 16 to 18 results: Academic year 2021/22. Entries and results – A level by region and subject (end of 16 – 18 study).
15. Higher Education Statistics Agency. HESA Student Record 2020/21 via HeidiPlus. <https://heidiplus.hesa.ac.uk> (accessed 14 November 2023).
16. Higher Education Statistics Agency. UK domiciled graduates entering work in the UK by region of higher education provider and region of work 2019/20. <https://www.hesa.ac.uk/news/16-06-2022/sb263-higher-education-graduate-outcomes-statistics/salary> (accessed on 14 November 2023).
17. ONS. Business enterprise research and development time series, 2020.
18. Higher Education Statistics Agency. HESA Staff Record 2021/22 via HeidiPlus.

The text of this work is licensed under the terms of the Creative Commons Attribution License which permits unrestricted use, provided the original author and source are credited. The license is available at: [creativecommons.org/licenses/by/4.0](https://creativecommons.org/licenses/by/4.0).

© The Royal Society. Issued: January 2024 DES8711