THE ROYAL SOCIETY

Research and Innovation in Yorkshire and the Humber

The last decade has seen commitments from all major UK political parties to support and invest in research and development (R&D) as drivers of innovation, growth and productivity. Notably, the UK government increased public R&D spending from £15 billion a year in 2021–22 to £20 billion annually in 2024–25 to attract or 'crowd in' private investment[1]. At the same time, research and innovation has become increasingly prominent in Westminster opposition thinking as well as devolved decision making in Scotland, Wales, Northern Ireland, and England's regions.

In addition, there has been growing consensus around a need to reduce regional inequality across the UK, with parties emphasising a role for R&D in unlocking growth and opportunity outside of London and the South East[2].

What do these ambitions to increase investment in UK research and innovation mean for Yorkshire and the Humber? This document provides an insight into the current research and innovation landscape in Yorkshire and the Humber 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 Yorkshire and the Humber[3]?

FIGURE 1

£1.8bn in 2019

4.6% of UK total

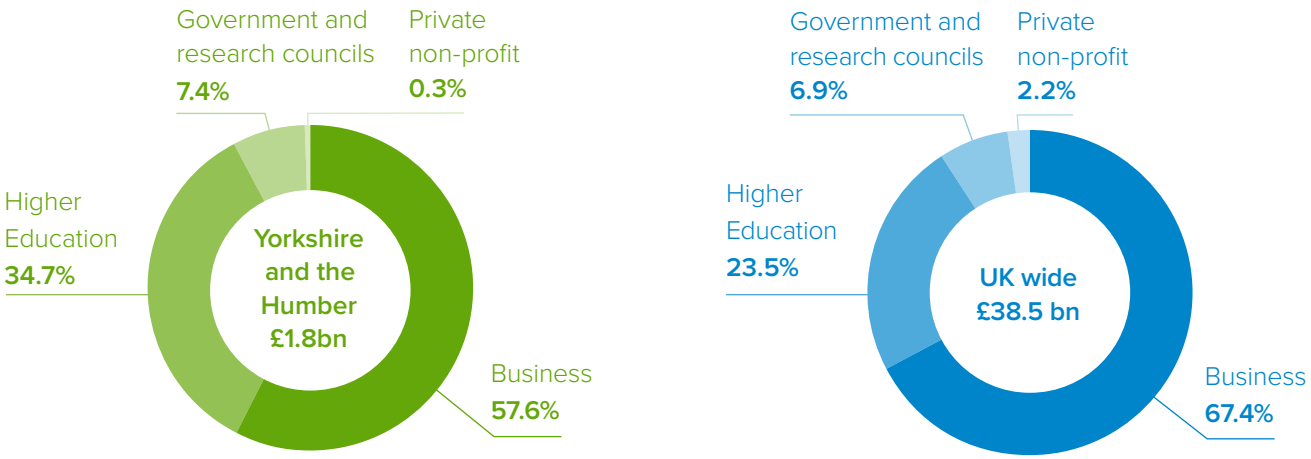
£317 per capita

8.2% of the UK's population is based in Yorkshire and the Humber[4]

Who performs R&D in Yorkshire and the Humber?

FIGURE 2

Percentage distribution of R&D spend in Yorkshire and the Humber and UK wide, 2019[5]



Note: The figures in this document are drawn from the most recent data available at the time of publishing. As a result, the dates vary across the data sources included and have been explicitly stated throughout the document. 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 Yorkshire and the Humber 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 Yorkshire and the Humber?

FIGURE 3

23,970 professional, scientific and technical workplaces[6]*	**11** universities[7]	**8** science parks[8]	**22** business incubators and accelerators[9]

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

Note: The R&D sites listed may not be exhaustive. The list of universities was compiled from HESA data. Higher education institutions without university title have been omitted.

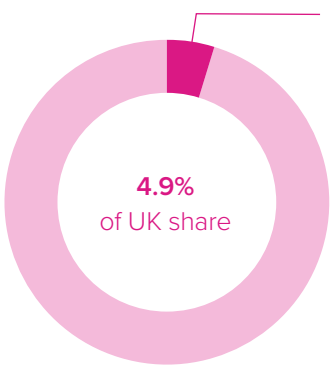
How is R&D in Yorkshire and the Humber funded and supported?

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

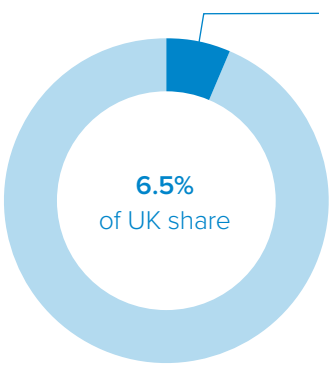
Examples of R&D funders in Yorkshire and the Humber

R&D tax credits[10]
2021 – 2022



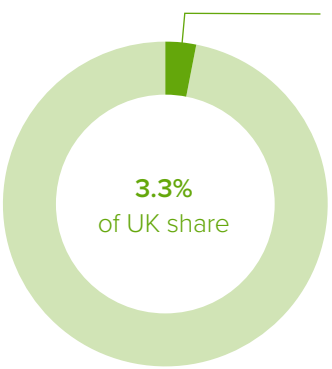
£66.80 per capita
UK average: **£112.10** per capita

Research councils[11]
2020 – 2021



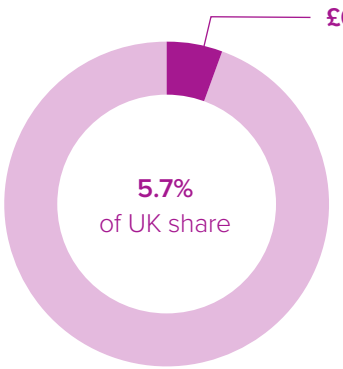
£43.90 per capita
UK average: **£55.70** per capita

Innovate UK[12]
2020 – 2021



£9.20 per capita
UK average: **£22.60** per capita

The Royal Society[13] *
2022 – 2023



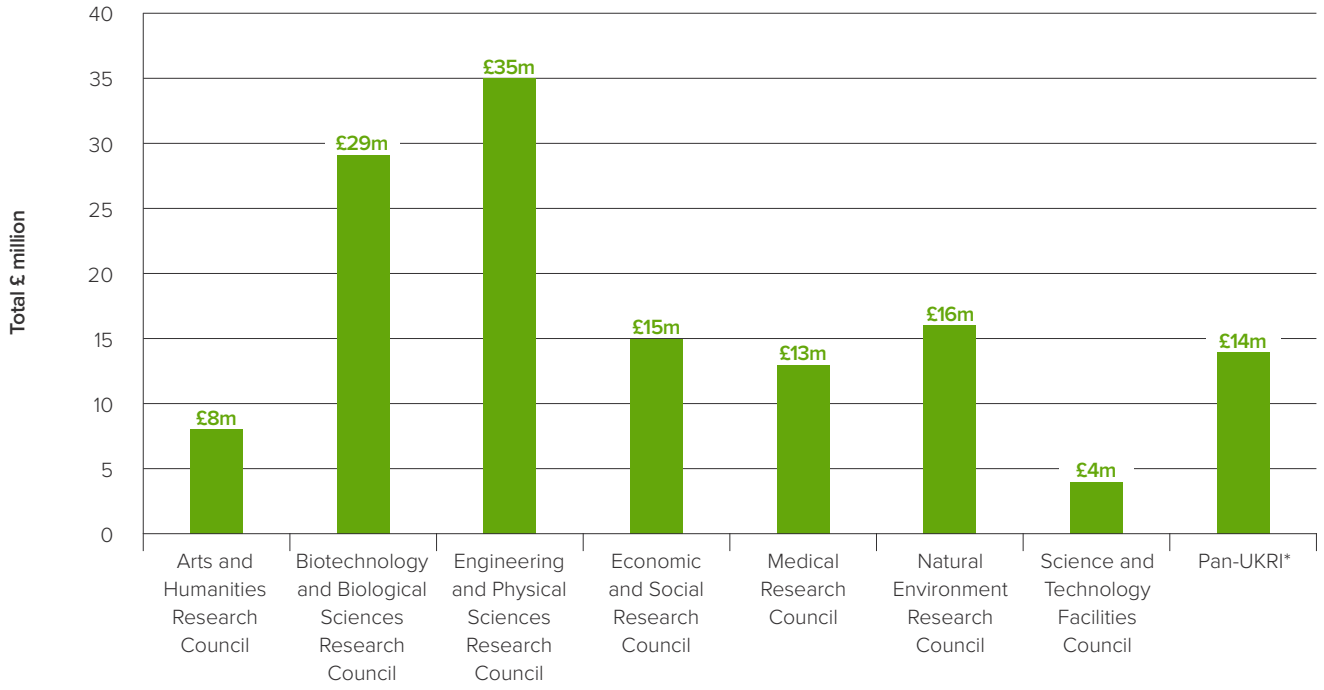
£1.10 per capita
UK average: **£1.60** per capita

* 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 collaboration with institutions outside of the UK.

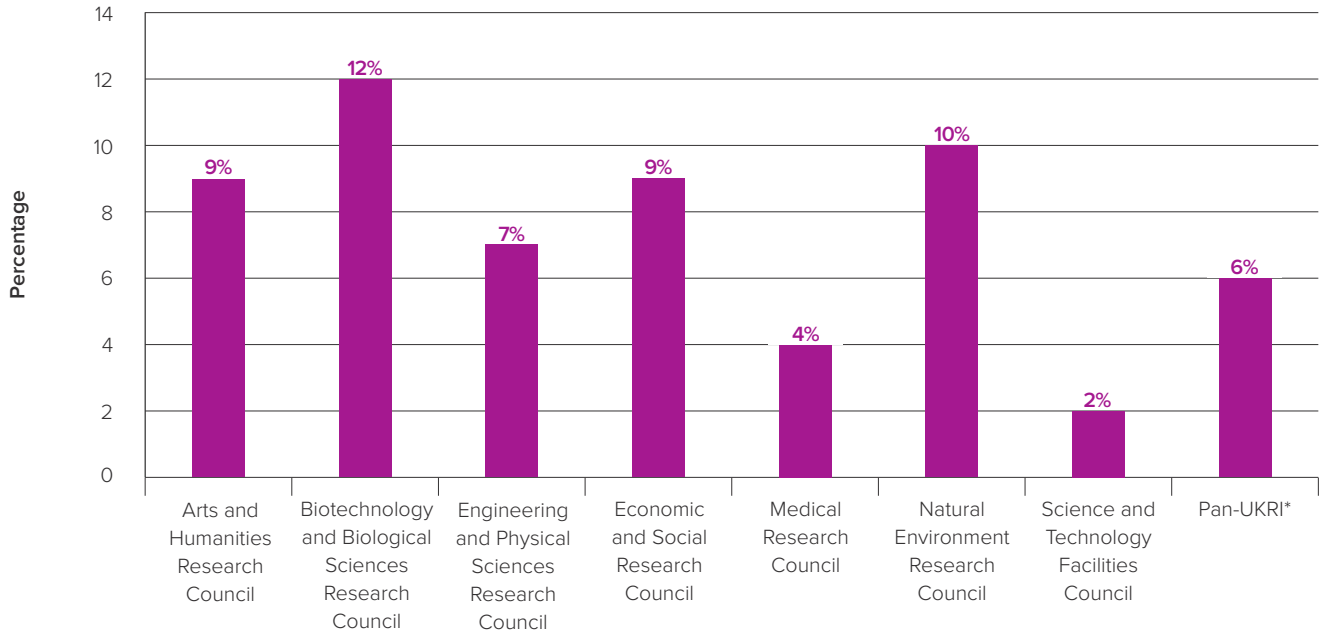
Note: Per capita figures calculated using ONS mid-2022 populations.

FIGURE 5

Total value of grants awarded to Yorkshire and the Humber from each research council in 2022 – 2023[14]



Percentage of funding awarded to Yorkshire and the Humber from each research council in 2022 – 2023[15]



* 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 Yorkshire and the Humber 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 Yorkshire and the Humber take A levels in science subjects, 2022 – 23[16]?

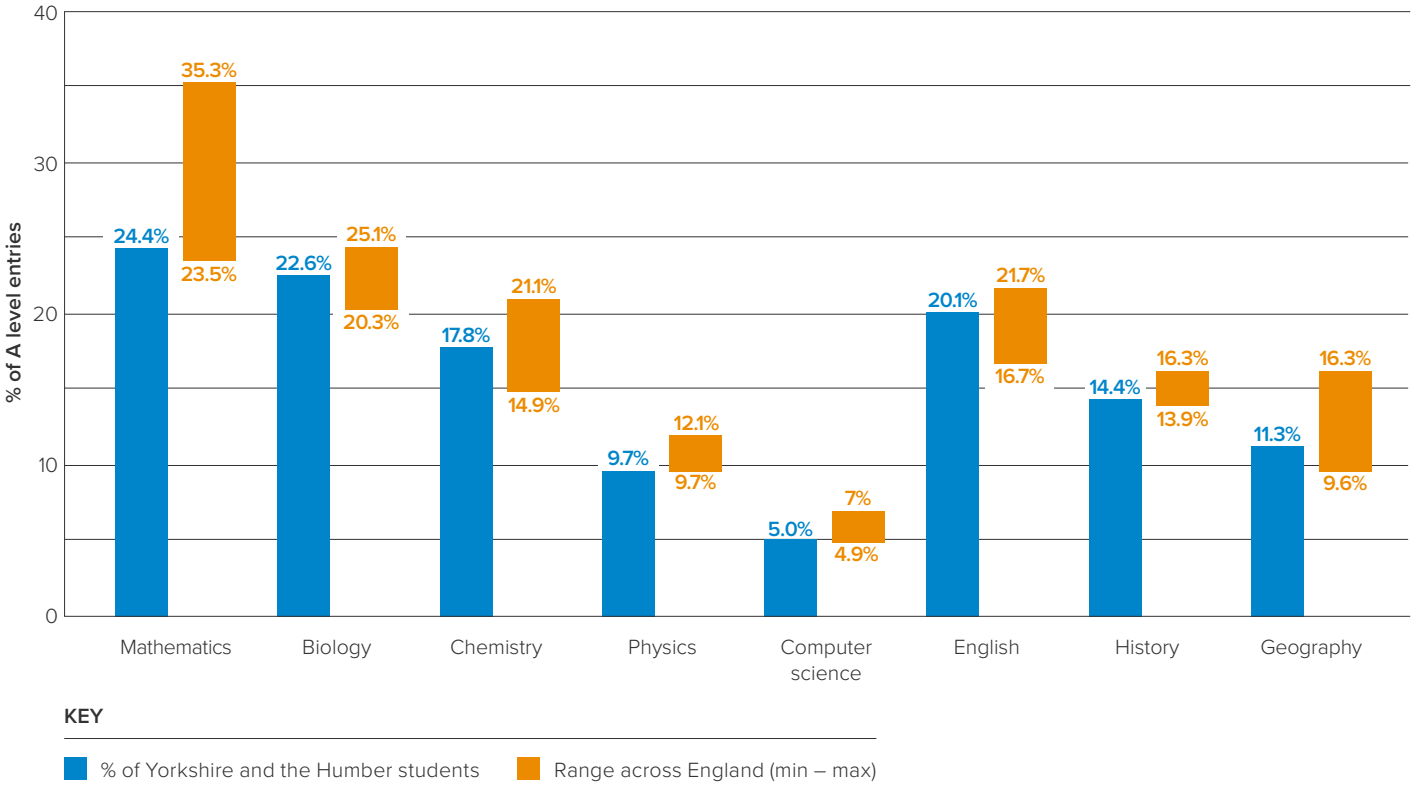
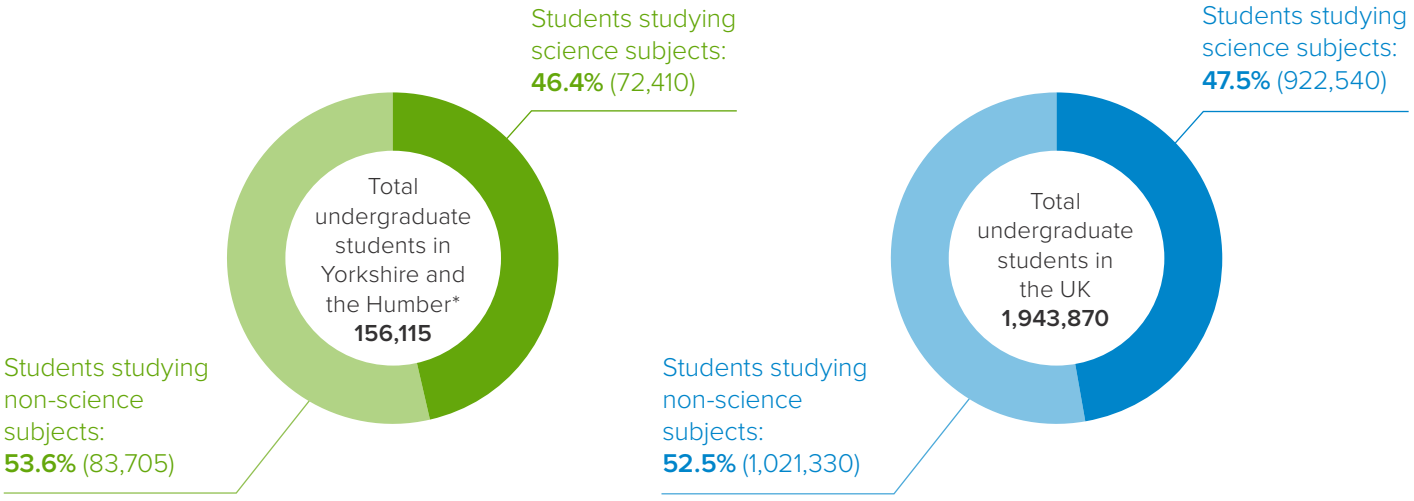


FIGURE 7

What are undergraduates studying at universities in Yorkshire and the Humber, 2020 – 2021[17]?

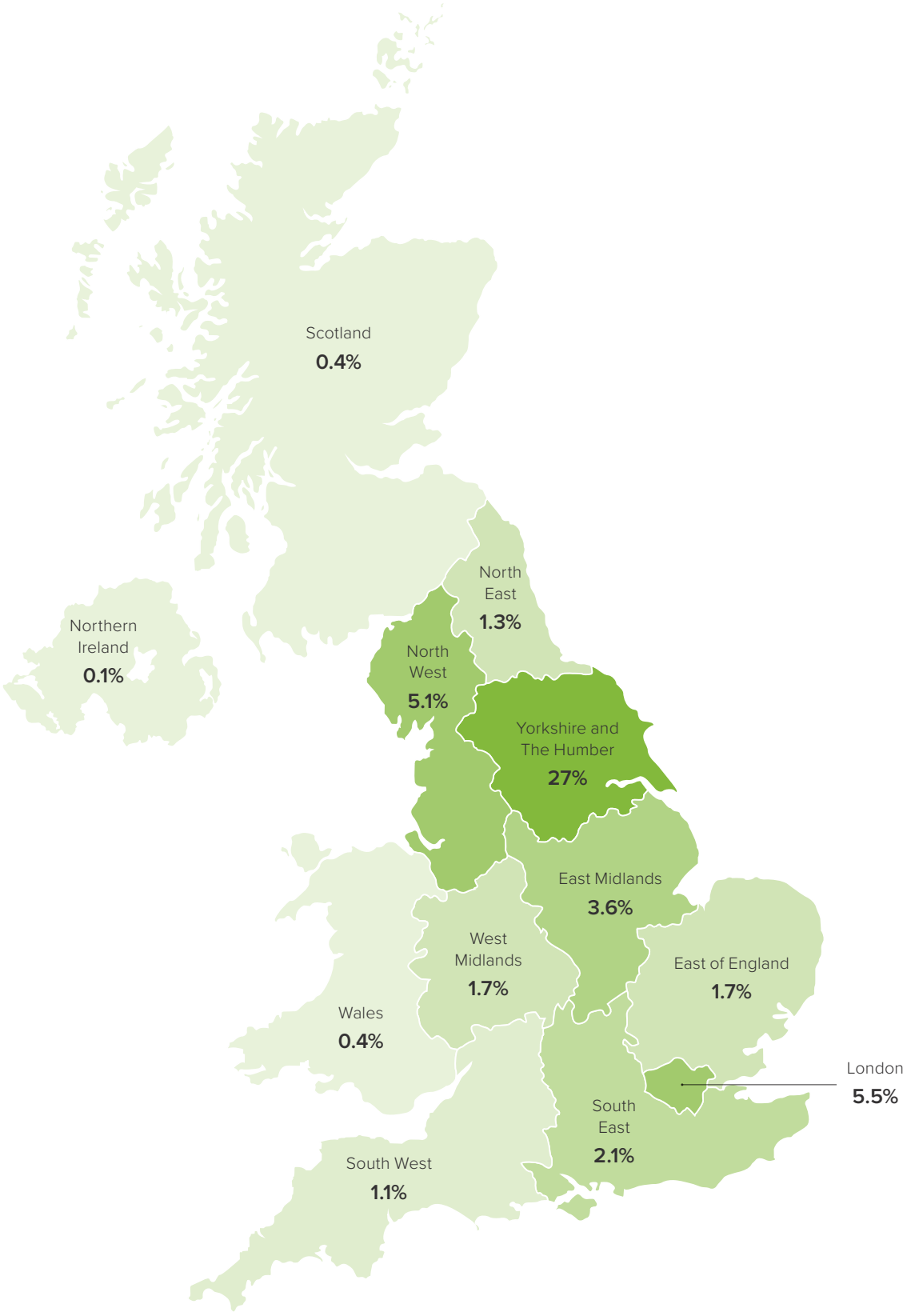


* The total for Yorkshire and the Humber does not include students studying at the Open University who are based in Yorkshire and the Humber.

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

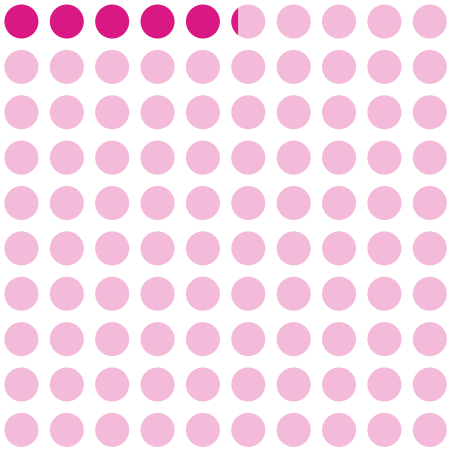
Proportion of Yorkshire and the Humber graduates working in the different regions and nations of the UK, 2020 – 2021[18].



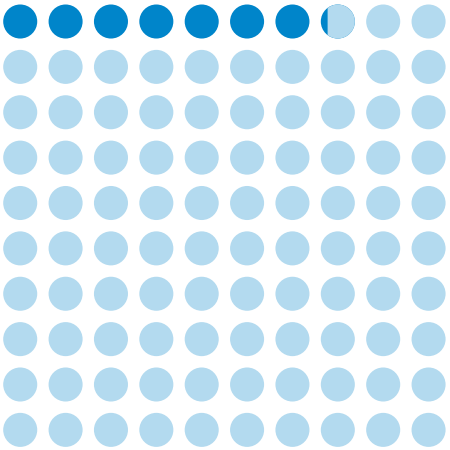
Note: Sample only includes surveyed graduates who remained in the UK for work after graduation. Proportion may not add up to 100% due to rounding.

FIGURE 9

How many people are employed in R&D in Yorkshire and the Humber?



Companies in Yorkshire and the Humber had **34,000** staff employed in R&D in 2022, **5.2%** of the UK total[19].



Yorkshire and the Humber had **17,000** research staff employed in its higher education institutions in 2022/23, **7.3%** of the UK total[20].

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 our 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**

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**

Promoting excellence in science

We promote excellence in science and support international collaborations by funding research in the life and physical sciences, including engineering, in the UK and internationally. Find out more about our grants programmes on **royalsociety.org/grants**

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