

Research and innovation in the West Midlands

The UK Government has committed to increase R&D spending to £20 billion a year by 2024/25, and overall investment in R&D to 2.4% of GDP by 2027. It has also outlined its ambition to secure ‘science superpower’ status by 2030, committed to levelling-up the UK and is seeking to build back better in response to COVID-19, including a focus on green growth to deliver net zero by 2050.

What does this ambition to increase investment in UK research and innovation mean for the West Midlands and its people?

This document provides an insight into the current research and innovation landscape in the West Midlands to inform discussions over how people across the region can contribute to and share the benefits of R&D investment in the UK.

R&D activity in the West Midlands in 2019

FIGURE 1

R&D spend in the West Midlands¹.

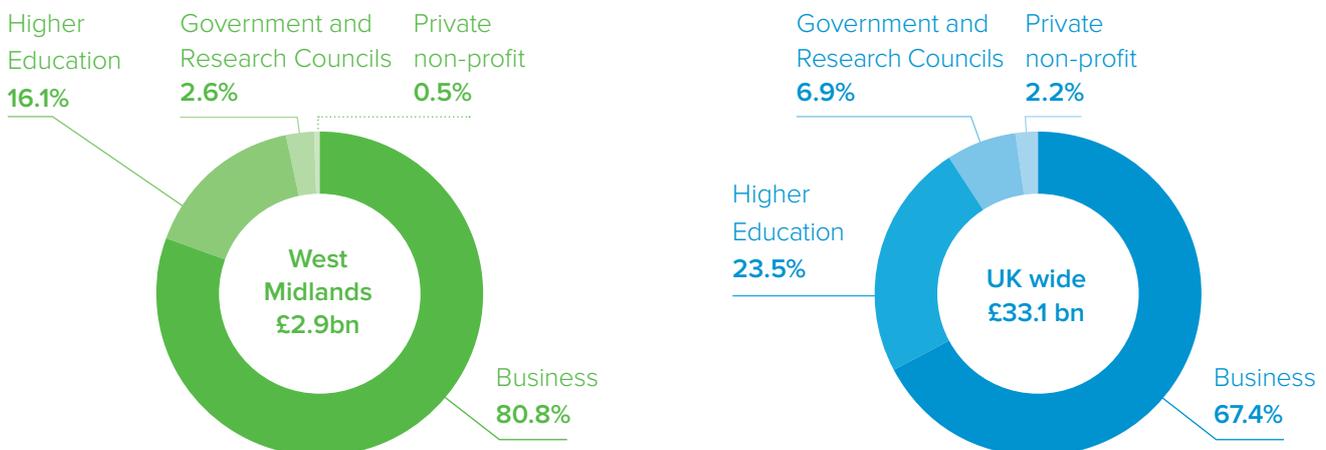
8.9% of the UK’s population is based in the West Midlands²



Who performs R&D in the West Midlands?

FIGURE 2

Percentage distribution of R&D spend in the West Midlands and UK wide.



Source: Office for National Statistics. Gross domestic expenditure on research and development, UK: 2019.

1. ONS 2019 Gross domestic expenditure on research and development, by region, UK.
2. ONS Estimates of the population mid-2020 for the UK, England and Wales, Scotland and Ireland.

Where does R&D take place in the West Midlands?

FIGURE 3

Map of R&D activity in the West Midlands.



KEY

- Universities
- Science parks
- Business incubators and accelerators

The geographical areas used in this briefing are based on the ONS classification. List of major towns and cities (December 2015) from ONS <http://geoportal.statistics.gov.uk/dataset>

37,380 workplaces in the science and technology sector³

13 universities⁴

4% of the UK's research infrastructures⁵

8 science parks⁶

47 business incubators and accelerators⁷

- Workplaces in the science and technology sector are from Office for National Statistics. 2017 Employees and workplaces in Science and Technology in Local Authorities of the UK, 2016 (user requested data) Data corresponds to figures for 2016. Data released on 17 January 2017. Workplace is defined as local units or branches of an organisation present in the region, and may belong to private, public or charity sector. Science and technology is defined based on SIC07 industrial classification codes.
- Universities are from Higher Education Statistics Agency 2019/20. Higher education providers Data retrieved in October 2021. The term includes all publicly funded universities and other HE institutions in the UK, as well as the privately funded University of Buckingham. Institutions were linked to main campus site only. Postcodes obtained from web searches or UK Learning Providers. See <http://learning-provider.data.ac.uk/>
- Research infrastructures are from Royal Society. 2018 A Snapshot of UK research infrastructures Report released on 22 January 2018.
- Science parks are from UK Science Parks Association 2021.
- Birmingham Tech: Accelerators, Incubators & Business Support, accessed October 2021.

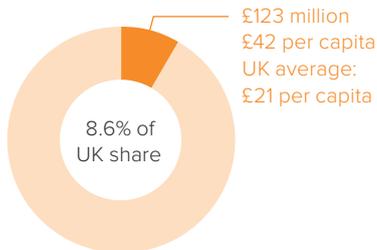
How is R&D in the West Midlands funded and supported?

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.

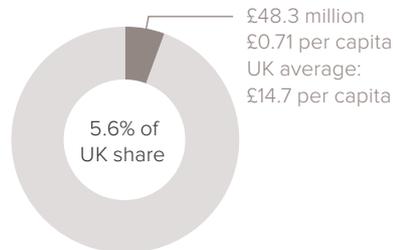
FIGURE 4

Examples of R&D funders in the West Midlands.

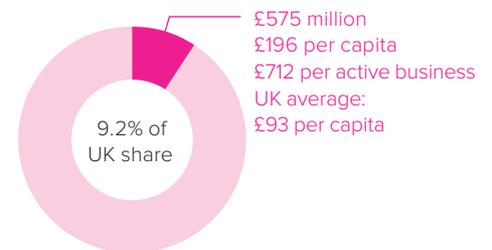
Higher education funding councils⁸ 2019 – 2020



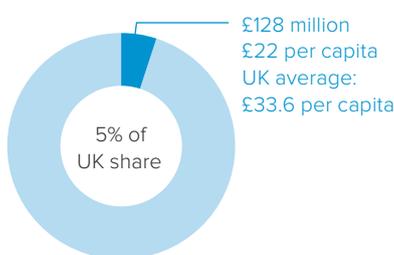
EU Framework Programmes⁹ 2019 – 2021



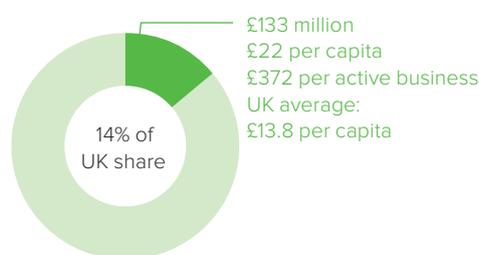
R&D tax credits¹⁰ 2018 – 2019



Research councils¹¹ Awards started in 2019



Innovate UK¹² 2019 – 2020

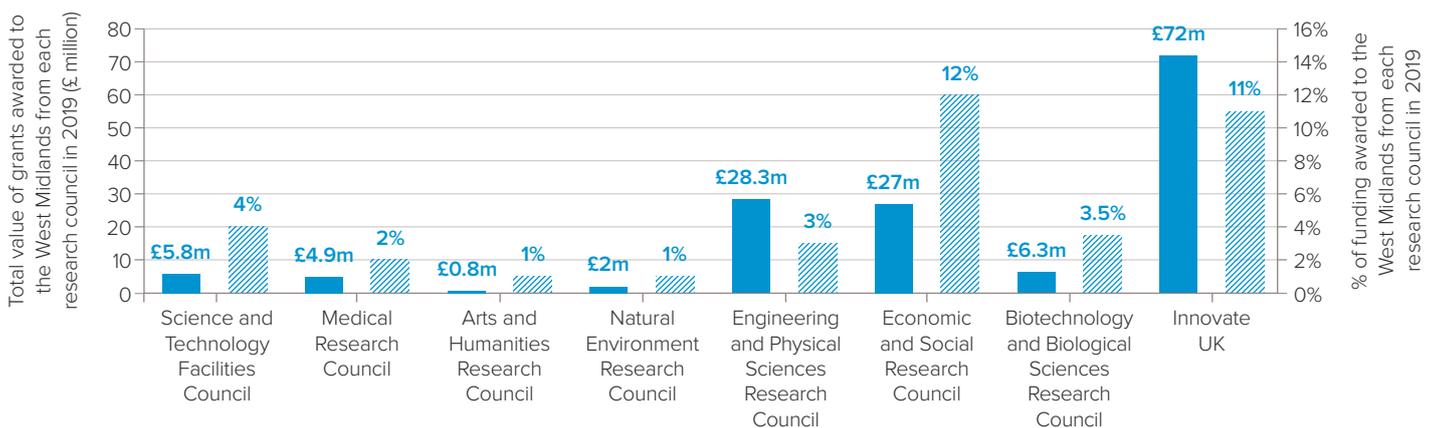


The Royal Society¹³ 2020 – 2021



FIGURE 5

How much did each of the research councils invest in the West Midlands in 2019?



Source: Research Councils UK. Gateway to Research. This graph shows the total value of grants awarded with funding beginning in 2019. These may be spent over a number of years and outside the region via collaborations. Awards made in other years may also be spent in 2019 and are not included here.

- Higher Education Funding Council for England. Recurrent grants for 2021/22: Final allocations. Funding refers to quality-related and knowledge exchange funding allocations, including charities support and postgraduate training allocations.
- European Commission. Data obtained from list of organisations funded using Community Research and Development Information Service (CORDIS) via the EU Open Data Portal. Horizon 2020 figures include research projects up to October 2020.
- HM Revenue and Customs. 2018/19 Research and Development Tax Credits. Figures refer to location of registered office making the claim and it may differ from where R&D takes place.
- Research Councils UK. Gateway to Research. See gtr.rcuk.ac.uk (accessed on 22 October 2021). See note in Figure 2 for details.
- Innovate UK. Innovate UK's 2019/20 funding reports. Figure refers to core grant funding and excludes programmes administered for other organisations.
- Royal Society. The data captures grants expenditure in the 2020/21 financial year limited to UK-based projects, thus not capturing awards made to UK institutions as part of international programmes such as Newton Fund or GCRF awards.

There is no R&D without people

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

FIGURE 6

What proportion of A levels being taken in the West Midlands are in science subjects?

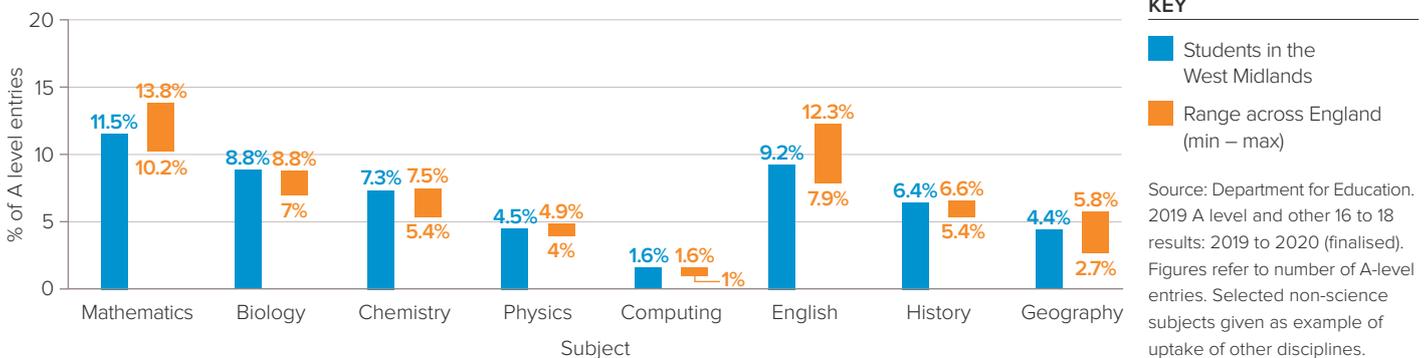
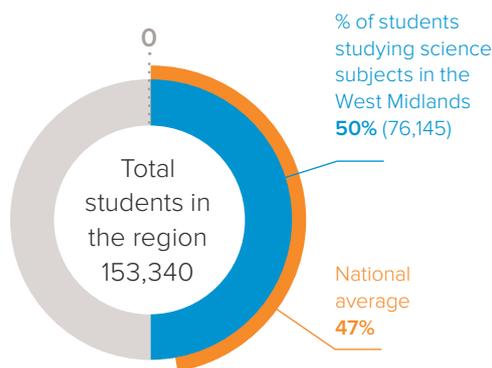


FIGURE 7

Undergraduate science* students in the West Midlands.



Source: Source: Higher Education Statistics Agency 2016/17 via Heidi Plus (accessed 19 November 2018) See <https://heidiplus.hesa.ac.uk>

*Definition: There is no single official definition of which subjects make up STEM (science, technology, engineering and maths). The HESA science grouping includes subjects like medicine, nursing and agriculture that may not be included in other definitions of STEM.

FIGURE 8

How many people are employed in R&D in the West Midlands¹⁴?



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

14. Office for National Statistics. 2020 UK business enterprise research and development, and Higher Education Statistics Agency. 2020 Staff in Higher Education 2019/20 via HeidiPlus. <https://heidiplus.hesa.ac.uk> (accessed 22 October 2021). Figures refer to full-time equivalent staff. Research staff refers to those listed as academic and with functions in research only or both research and teaching.