

## Research and innovation in the West Midlands

There is broad consensus across the political spectrum to increase total investment in UK research and development (R&D). The Government has committed to meet a target of 2.4% of GDP invested in UK R&D within ten years, and a longer-term goal of 3%. To achieve this, the UK must create a vibrant environment that fosters and encourages research and innovation across public services, universities and business, as well as attracting global investment. But what does delivering this target look like for the West Midlands?

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 have the opportunity to contribute to and share the benefits of R&D investment in the UK.

FIGURE 1

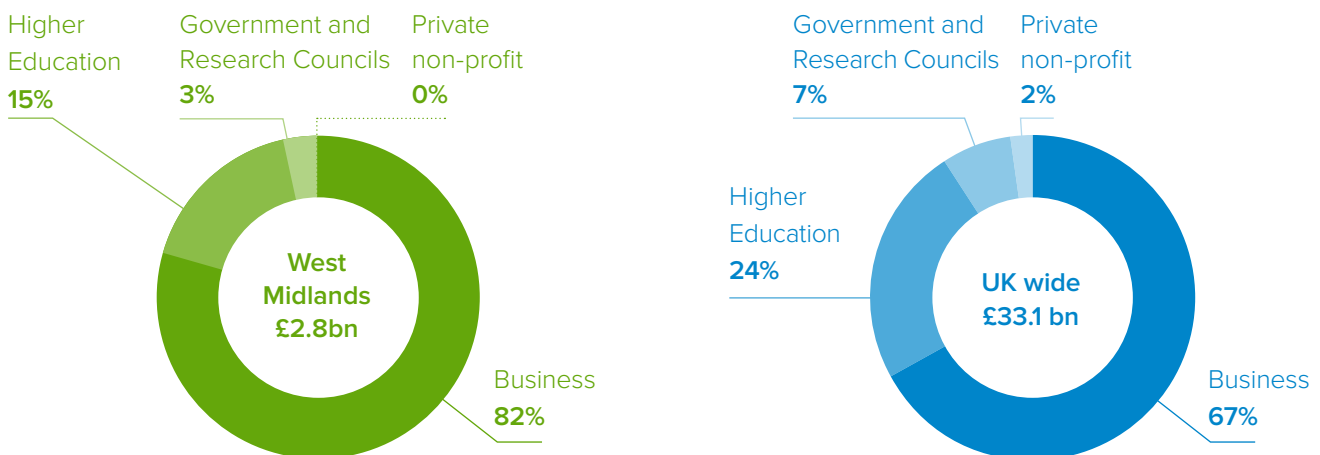
### R&D activity in the West Midlands in 2016<sup>1</sup>

8.8% of the UK's population is based in the West Midlands<sup>2</sup>



FIGURE 2

### Who performs R&D in the East and West Midlands?



Source: Office for National Statistics. 2018 Gross domestic expenditure on research and development, UK: 2016. East Midlands and West Midlands regions sectoral data are combined by ONS due to confidentiality.

1. Office for National Statistics. 2018 Gross domestic expenditure on research and development, UK: 2016.  
 2. ONS Estimates of the population for the UK, England and Wales, Scotland.

FIGURE 3

Where does R&D take place 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 sector<sup>3</sup>

**12** universities<sup>4</sup>

**4%** of the UK's research infrastructures<sup>5</sup>

**9** science parks<sup>6</sup>

**43** business incubators and accelerators<sup>7</sup>

3. 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.

4. Universities are from Higher Education Statistics Agency 2017. Higher education providers Data retrieved on 02 January 2018. 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/> (accessed on 24.10.2017)

5. Research infrastructures are from Royal Society. 2018 A Snapshot of UK research infrastructures Report released on 22 January 2018.

6. Science parks are from UK Science Parks Association 2017. List of members Data supplied with postcodes provided on request by UKSPA in November 2017.

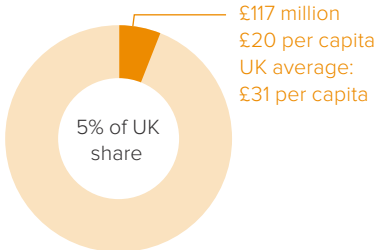
7. Business incubators and accelerators are from Department for Business, Energy and Industrial Strategy 2017. Business incubators and accelerators: the national picture Data released on 20 June 2017. Data does not include virtual programmes with no geographical site. Organisations that are members of UKSPA were removed from the list.

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

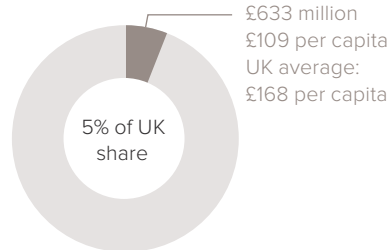
R&D is funded and supported in many different ways. This includes direct investment from public, private, charitable and overseas sources, as well as indirect measures that encourage further private investment such as R&D tax credits. Here are some examples.

FIGURE 4

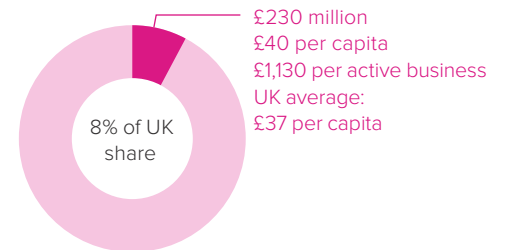
### Higher education funding councils<sup>8</sup> 2017 – 2018



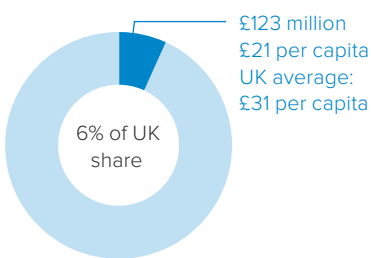
### EU Framework Programmes<sup>9</sup> 2007 – 2016



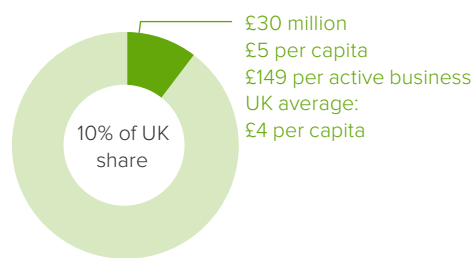
### R&D tax credits<sup>10</sup> 2015 – 2016



### Research councils<sup>11</sup> Awards started in 2017



### Innovate UK<sup>12</sup> 2016 – 2017



### The Royal Society<sup>13</sup> 2017 – 2018

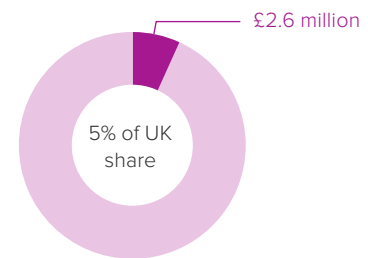
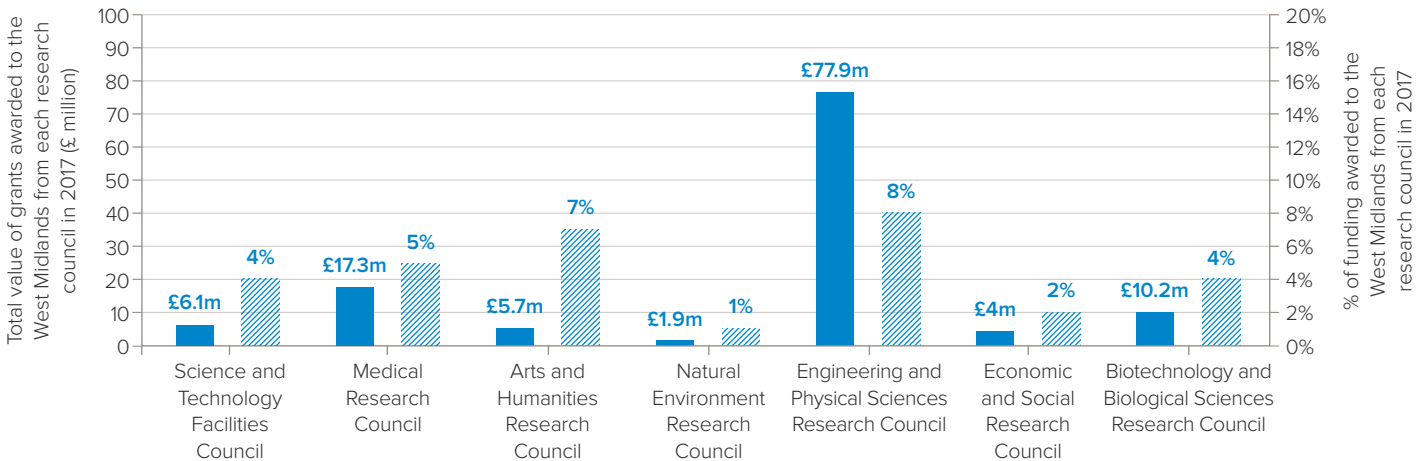


FIGURE 5

How much did each of the research councils invest in the West Midlands in 2017?



Source: Research Councils UK. Gateway to Research. See [gtr.rcuk.ac.uk](http://gtr.rcuk.ac.uk) (accessed on 5 March 2018). This graph shows the total value of grants awarded with funding beginning in 2017. 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 2017 and are not included here.

- Higher Education Funding Council for England. 2017 Recurrent grants for 2017-18: 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 2017.
- HM Revenue and Customs. 2017 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](http://gtr.rcuk.ac.uk) (accessed on 5 March 2018). See note in Figure 2 for details.
- Innovate UK. 2017 Innovate UK's 2016/17 funding reports. See <https://innovateuk.blog.gov.uk/2017/08/29/innovate-uks-201617-funding-reports-what-do-they-tell-us/> (accessed on 17 April 2018). Figure refers to core grant funding and excludes programmes administered for other organisations.
- Royal Society. The data captures grants expenditure in the 2017-18 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?

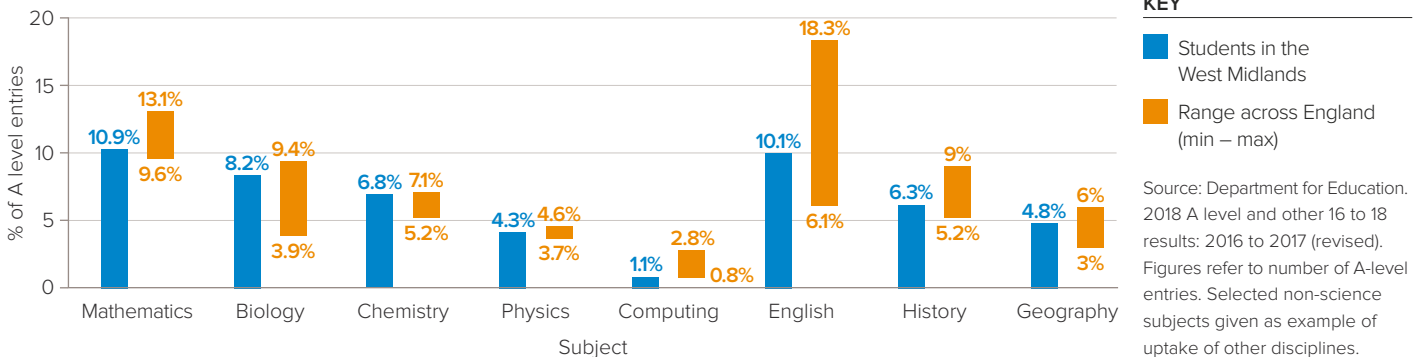
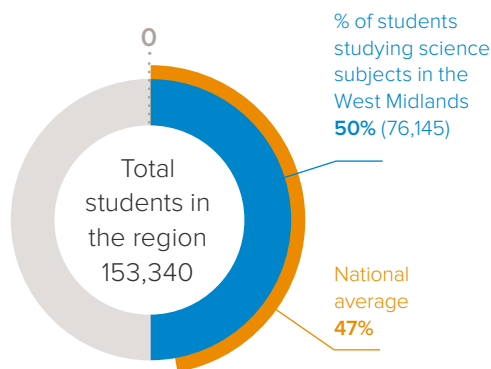


FIGURE 7

How many undergraduates study science subjects\* at West Midlands universities?



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.

## How many people are employed in R&D in the West Midlands<sup>14</sup>?

West Midlands companies had **19,000** staff employed in R&D in 2016.

The West Midlands had **11,140** research staff employed in its universities in 2016/17.

## 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 <https://royalsociety.org/topics-policy/projects/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

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](https://royalsociety.org/grants)

14. Office for National Statistics. 2018 UK business enterprise research and development, and Higher Education Statistics Agency. 2018 Staff in Higher Education 2016/17 via HeidiPlus. <https://heidiplus.hesa.ac.uk> (accessed 02 March 2018). 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.