



FEATURE

ELECTION 2019

Will the UK remain a research superpower?

What are the political parties' promises for research and development after the election, asks **Jacqui Wise**, as research academies and charities call for a research friendly Brexit outcome

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The UK's three largest political parties made a commitment to increase spending on research and development in their election manifestos and at a science election hustings at the Royal Society in London on 19 November.

The Royal Society, the Academy of Medical Sciences, the British Academy, and the Royal Academy of Engineering want the next government to ensure investment of 3% of gross domestic product (GDP) in research and development by the end of the coming decade.¹

The UK currently spends 1.69% of GDP on research and development, placing it 11th among EU countries. A 3% target would place it on a level with countries such as Germany but still below the high tech countries Israel and South Korea, which spend 4.55% of GDP. UK public investment in research and development is currently 0.43% of GDP, which the academies want to see raised to 1% to trigger more private investment.

Stephen Metcalfe, Conservative former chair of the science and technology committee, told the hustings that the current Tory government had pledged to reach a total 2.4% of GDP by 2024-25, as stated in the party's manifesto. He said that the party would increase public spending to 0.62% of GDP.

Innovation nation

Both Labour and the Liberal Democrats are committed to the 3% target. Chi Onwurah, Labour's science and innovation spokesperson, said that a Labour government would raise total research and development spending to 1.85% of GDP in its first two years in office. Labour's manifesto is pledging an "innovation nation," with 3% of GDP spent on research and development by 2030.² Onwurah said that public funding was needed for research that the market was failing to provide, particularly in public health, such as antibacterial research.

The Liberal Democrats' manifesto said that the party would achieve the 3% target through an interim 2.4% of GDP by 2027.³ Sam Gyimah, Liberal Democrat spokesperson for business, energy, and industrial strategy, noted that the 3% target was ambitious and would remain a "fantasy target" if the country

pursued a hard Brexit, as companies would not want to base themselves in the UK. "Remaining in the EU is the only way to advance the course of science," he said.

Aisling Burnand, chief executive of the Association of Medical Research Charities (AMRC), commented, "The AMRC are pleased to see what seems to be a consensus between political parties that more spending is needed in medical research. But we urge them to have and share clear plans of how they will achieve these increases."

The Royal Society's own manifesto says that, for research to thrive, the Brexit outcome needs to protect people, funding, and collaboration.⁴ Venki Ramakrishnan, the society's president, told the hustings that the UK had experienced "huge reputational damage" as a destination for researchers because of the Brexit process, and he asked how the parties would tackle this.

Gyimah responded that, by revoking article 50 and stopping Brexit, the Liberal Democrats would show that the UK was an "open and welcoming country" that would continue to attract the best researchers globally. "Science is an international exercise and requires international collaboration with the EU and the rest of the world," he said.

Metcalfe argued that the Conservatives would get Brexit done quickly and would encourage companies to do research in the UK. He added that the Conservatives would invest £800m (€935m; \$1.03bn) over five years to set up an agency to fund high risk, high reward research, such as in artificial intelligence.

Onwurah said that Labour would end the "hostile environment" for immigrants that had damaged the UK's reputation and discouraged researchers from coming.

Cross border collaboration

The One Cancer Voice manifesto, written by 20 cancer charities, states that 4800 UK-EU trials took place from 2004 to 2016.⁵ It says that researchers must be able to work across borders and calls on the next government to prioritise close relations between the UK and EU on clinical trials.

Onwurah also talked about Labour's manifesto plan for a "green industrial revolution" that would target science, research, and innovation to tackle the climate crisis, manage plastic waste, and deal with other societal challenges, such as the ageing population and antibiotic resistance.

The academies warned that, without a Brexit deal, the UK would lose access to Horizon Europe, the almost €100bn (£85.5bn; \$110.2bn) EU programme that funds UK research and collaboration around the world. The Conservative manifesto says that the party would seek to retain full membership of Horizon Europe in any Brexit negotiations.

Burnand welcomed this. "For the UK to remain a science superpower they must seek the closest possible association with the Horizon Europe funding programme," she said.

Beth Thompson, head of UK-EU policy at the Wellcome Trust, welcomed the parties' commitments to funding but warned, "The importance of regulation is being overlooked. Collaborating across borders on clinical trials and public health research is much easier with shared rules and standards.

"We already have examples of Wellcome funded research being delayed by uncertainties over post-Brexit data protection guarantees. We want to hear how the parties will approach research regulation after Brexit."

Research and development spending (% GDP)

UK now: 1.69% (public 0.43%; private 1.26%)
 Conservative manifesto (by 2024-25): 2.4% (public 0.62%; private 0.78%)
 Labour (in two years): 1.85%
 Labour manifesto (by 2030): 3%
 Lib Dem manifesto (by 2027): 2.4%
 Lib Dem manifesto (ultimately): 3%
 Royal Society manifesto: 3%
 Germany: 3%
 Israel, South Korea: 4.55%

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- 1 Royal Society, Academy of Medical Sciences, British Academy, Royal Academy of Engineering. Science, research and innovation on the doorstep. Oct 2019. <https://acmedsci.ac.uk/file-download/49131137>.
- 2 Labour Party. Manifesto: a green industrial revolution. 2019. <https://labour.org.uk/manifesto/a-green-industrial-revolution/>.
- 3 Liberal Democrats. Manifesto. 2019. <https://www.libdems.org.uk/plan>.
- 4 Royal Society. Science that works for society—Royal Society manifesto. Nov 2019. <https://royalsociety.org/-/media/news/2019/13-11-19-royal-society-manifesto.pdf>.
- 5 Anthony Nolan, Bloodwise, Bowel Cancer UK, et al. One Cancer Voice: a manifesto for people living with cancer. Nov 2019. https://www.cancerresearchuk.org/sites/default/files/one_cancer_voice_-_final_1.0.pdf.

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