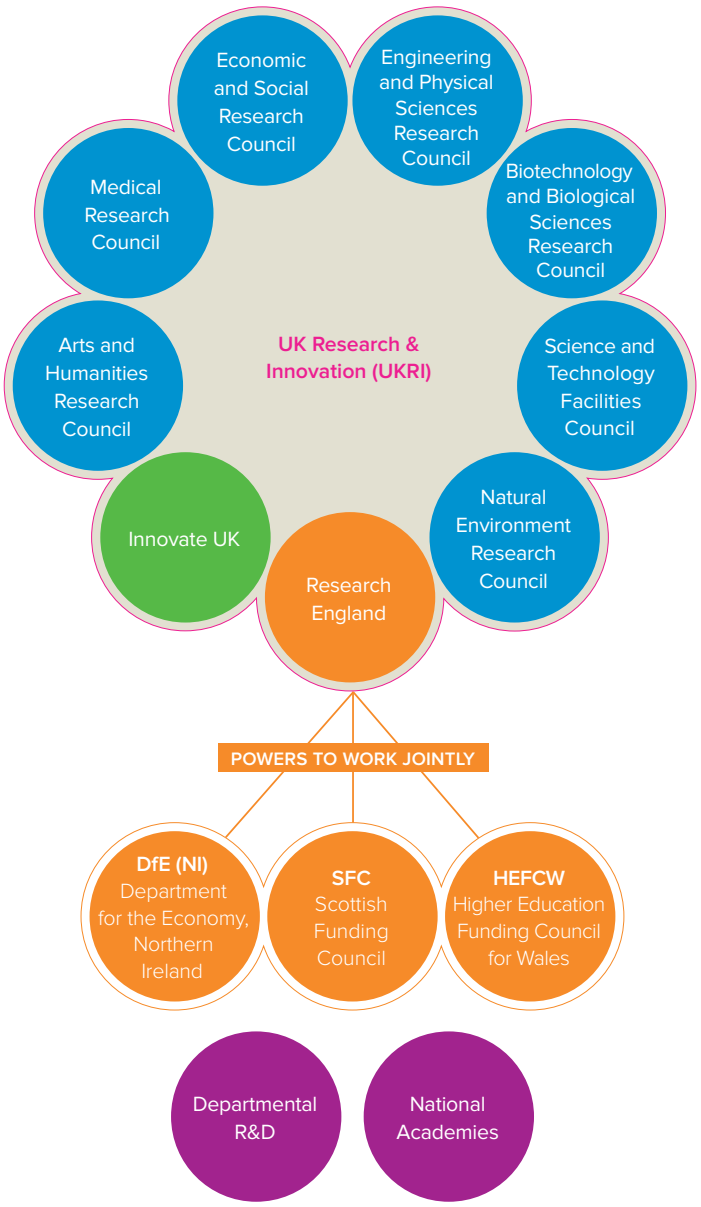
How does the UK government invest in R&D?

This is an overview of some of the structures by which the UK government allocates public funding for R&D in the UK, as outlined in the science budget. In addition to public investment in R&D the government encourages further private investment in a number of ways, such as R&D tax credits.

The vast majority of government investment in UK R&D is allocated by 'partner organisations' who administer an agreed distribution of funding. The criteria for how this is distributed varies based on the organisation, or the scheme they are administering. Not all of this investment is spent on R&D in the UK.



UK Research and Innovation (UKRI)

UKRI

Created by the Higher Education and Research Act 2017 and operational from April 2018, UKRI is the strategic body which brings together the 7 Research Councils, Innovate UK and Research England. The purpose of UKRI is to create a strong, agile and joined up funder of research and innovation for the UK. UKRI will fund research in two distinct and complementary ways – one allocated by the seven Research Councils to their respective disciplines, and the other as block grants to Higher Education Institutions. Collectively referred to as the dual support system.

Innovate UK

The UK's innovation agency, works with companies to de-risk, enable and support innovation, including through providing innovation grants and investing in Catapult centres.

Research Councils

The seven Research Councils, divided by scientific discipline, support excellent research by providing grant funding, access to excellent research facilities and investing in infrastructure and institutions.

Research England

Research England takes over the England-only funding of knowledge exchange formerly performed by HEFCE. This takes the form of quality related block grants to Higher Education Institutions.

Devolved counterparts

The Research Councils and Innovate UK carry out activities reserved for the UK government and so operate across the UK. Funding of Higher Education Institutions is a devolved matter and so a similar function to Research England is performed by Higher Education Funding Council Wales (HEFCW), the Scottish Funding Council (SFC), and the Department for the Economy (Northern Ireland).

National Academies

The UK's four independent National Academies, receive funding for key programmes that help to deliver Government priorities, including supporting excellent researchers and distributing some of the funding for schemes such as the Global Challenges Research Fund (GCRF) and Newton Fund.

Departmental R&D

Government departments, including those of devolved administrations, fund specific R&D activities leading to the production and synthesis of an evidence base which contributes to good policy development and evaluation. This may be done through Public Sector Research Establishments (PSREs) such as the Met Office.

The National Institute for Health Research (NIHR) is funded by the Department of Health to conduct health and care research within the NHS that will improve the health and wealth of the nation.

Key terms

What is R&D?

R&D is defined as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications. It includes basic research, applied research and experimental development[1]. Innovation often draws on R&D, but R&D is not always part of the activity of innovation. An innovation is defined as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations[2].

What is the science budget?

Government investment in R&D is allocated largely through the 'science budget'. This is generally divided into resource and capital. Resource spending is used to cover the day to day costs of research, and also provides research and innovation grant funding. Capital spending focuses mainly on investment in infrastructure, such as laboratory equipment, setting up world class research institutes and or creating innovation centres.

What is the science ring-fence?

The science ring-fence traditionally refers to 'resource spending'. Since 2015, the government has committed to increasing the ring-fenced science budget in real terms (in line with inflation). Capital spend, departmental R&D, Innovate UK and other non-departmental funding sit outside this. The science ring-fence provides stability and a degree of certainty to funding decisions which is crucial for research that spans decades or even lifetimes.

Examples of R&D funding programmes

Development Funding

Global Challenges Research Fund (GCRF) and Newton Fund

GCRF is a funding stream which aims to harness the expertise of the UK's research base to pioneer new ways of tackling global challenges, in particular problems faced by developing countries. The Newton Fund aims to develop science and innovation partnerships to promote economic welfare in collaborating countries. R&D which is funded by these schemes, but does not take place in the UK, is not accounted for within UK domestic R&D investment figures.

Industrial Strategy

Industrial Strategy Challenge Fund (ISCF)

ISCF was created to provide funding and support to UK businesses and researchers, to meet the major industrial and societal challenges of our time. Six challenge areas were named by the government in 2017 including Healthcare and Medicines and Robotics and Artificial Intelligence. UKRI will be responsible for the implementation of ISCF.

Knowledge Exchange Funding

Higher Education and Innovation Fund (HEIF)

HEIF is designed to support the range of knowledge exchange activities that result in economic and social impact. The funding provides incentives for English Higher Education Institutions to work with businesses, public and third sector organisations, community bodies and the wider public. The devolved administrations are responsible for any equivalent funding to their HEIs.

Capacity Funding

UK Research Partnership Investment Fund (RPIF)

RPIF provides capital funds to enhance the research facilities of UK Higher Education Institutions undertaking world-leading research. It aims to do so through strategic partnerships between Higher Education Institutions and other organisations active in research including business. Applications must leverage public funds by a proportion of 2:1.

1. Frascati Manual: http://www.oecd.org/science/inno/frascatimanualproposedstandardpracticeforsurveysonresearchandexperimentaldevelopment6thedition.htm
2. The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual, Third Edition, OECD (2005).