

# UK to launch new research agency to support high risk, high reward science

- UK government will launch the Advanced Research & Invention Agency (ARIA), a new independent research body to fund high-risk, high-reward scientific research
- ARIA will be led by prominent, world-leading scientists who will be given the freedom to identify and fund transformational science and technology at speed
- the new agency will help to cement the UK's position as a global science superpower, while shaping the country's efforts to build back better through innovation

The UK's next generation of pioneering inventors will be backed by a new independent scientific research agency, the Business Secretary Kwasi Kwarteng has announced today (Friday 19 February), as part of government plans to cement the UK's position as a global science superpower.

The new agency, the Advanced Research & Invention Agency (ARIA), will be tasked with funding high-risk research that offers the chance of high rewards, supporting ground-breaking discoveries that could transform people's lives for the better.

The UK has a long and proud history of inventing that dates back centuries – from Ada Lovelace and Alan Turing who pioneered early predecessors of the computer, Thomas Newcomen and James Watt who transformed travel by creating steam engines, William Grove who created fuel cells and Frank Partridge who helped save millions of lives by developing the first portable defibrillator.

The creation of ARIA will continue this tradition, backed by £800 million, to fund the most inspiring inventors to turn their transformational ideas into new technologies, discoveries, products and services – helping to maintain the UK's position as a global science superpower.

The new agency will be independent of government and led by some of the world's most visionary researchers who will be empowered to use their knowledge and expertise to identify and back the most ambitious, cutting-edge areas of research and technology – helping to create highly skilled jobs across the country. It will be able to do so with flexibility and speed by looking at how to avoid unnecessary bureaucracy and experimenting with different funding models.

ARIA will be based on models that have proved successful in other countries, in particular the influential US Advanced Research Projects Agency (ARPA) model. This was instrumental in creating transformational technologies such as the internet and GPS, changing the way people live and work, while increasing productivity and growth. More recently, ARPA's successor, DARPA, was a vital pre-pandemic funder of mRNA vaccines and antibody therapies, leading to critical COVID therapies.

Business Secretary Kwasi Kwarteng said:

From the steam engine to the latest artificial intelligence technologies, the UK is steeped in scientific discovery. Today's set of challenges – whether disease outbreaks or climate change – need bold, ambitious and innovative solutions.

Led independently by our most exceptional scientists, this new agency will focus on identifying and funding the most cutting-edge research and technology at speed.

By stripping back unnecessary red tape and putting power in the hands of our innovators, the agency will be given the freedom to drive forward the technologies of tomorrow, as we continue to build back better through innovation.

Central to the agency will be its ability to deliver funding to the UK's most pioneering researchers flexibly and at speed, in a way that best supports their work and avoids unnecessary bureaucracy. It will experiment with funding models including program grants, seed grants, and prize incentives, and will have the capability to start and stop projects according to their success, redirecting funding where necessary. It will have a much higher tolerance for failure than is normal, recognising that in research the freedom to fail is often also the freedom to succeed.

Science and Innovation Minister Amanda Solloway said:

The UK's scientific community has a proud history of discovery, producing iconic inventors such as Alan Turing whose imagination and creativity changed the world as we know it.

But to rise to the challenges of the 21st century we need to equip our R&D community with a new scientific engine – one that embraces the idea that truly great successes come from taking great leaps into the unknown.

ARIA will unleash our most inspirational scientists and inventors, empowering them with the freedom to drive forward their scientific vision and explore game-changing new ideas at a speed like never before. This will help to create new inventions, technologies and industries that will truly cement the UK's status as a global science superpower.

Legislation to create the new research agency will be introduced to Parliament as soon as parliamentary time allows. The aim is for it to be fully operational by 2022.

Government Chief Scientific Adviser, Sir Patrick Vallance said:

The Advanced Research and Invention Agency will build on the UK's world-class scientific research and innovation system. The importance of scientific innovation has never been clearer than over the last year and this new body provides an exciting new funding mechanism for pioneering R&D.

The new body will complement the work of UK Research and Innovation (UKRI) while building on the government's ambitious [R&D Roadmap](#) published in July 2020. In November 2020, the Spending Review set out the government's plan to cement the UK's status as a global leader in science and innovation by investing £14.6 billion in R&D in 2021 to 2022, putting the UK on track to reach 2.4% of GDP being spent on R&D across the UK economy by 2027.

A recruitment campaign will begin over the coming weeks to identify a world class interim Chief Executive and Chair to shape the vision, direction and research priorities for the agency.

ARIA will be backed by £800 million of government funding over the course of this Parliament, as set out by the Chancellor Rishi Sunak in the March 2020 Budget.

Matthew Fell, CBI UK Chief Policy Director said:

ARIA will create new opportunities for high-risk, high-reward research. As world leaders in R&D and home to the brightest and best scientists, the UK has a unique opportunity to play to its strength with this new agency, to help create jobs, raise productivity and tackle the biggest challenges facing our country such as net-zero. Key to ARIA's success will be strong business engagement to make sure the brilliant ideas developed can make it through to market.

This a prime chance for business, government and the research and innovation community to work together and turn ambitions into realities. And coalesce around an shared economic vision for the next decade in which innovation will be at the heart of it. The CBI looks forward to engaging with the government as it looks to develop its proposals further.

Sir Jim McDonald FEng FRSE, President of the Royal Academy of Engineering, said:

We are delighted to see the government deliver on its commitment to a high-risk high-reward funding agency. I hope this ambitious new funding mechanism will help to unlock radical innovation and enable step changes in technology that provides value for our economy and society at large. Engineering is central to an ambitious innovation agency of this kind, forming the bridge between research and innovation to enable technological and commercial breakthroughs.

Previous comments provided as evidence to the House of Commons Science and Technology Select Committee as part of its formal inquiry into the proposition of a new UK research funding agency include:

## **Universities UK**

There is space in the UK's research landscape for a new funding agency that supports high risk, high pay off investment. It should be designed to complement the wider system of funding streams that already exist and should be tied closely to a well-funded university research network.

## **Royal Society**

A UK ARPA could facilitate investments in technologies with radical potential that may not otherwise receive support through existing mechanisms. It is important that this differentiated focus is clearly articulated and understood.

## **Institute of Physics**

The ARPA model's focus on the future would also be a welcome addition to the UK's R&D funding system, scanning the horizon for areas of research and technology development that may not have an obvious immediate market application but that are likely to benefit the industries of tomorrow, in 10, even 20 years' time.