



UK Research
and Innovation

Fund for International Collaboration

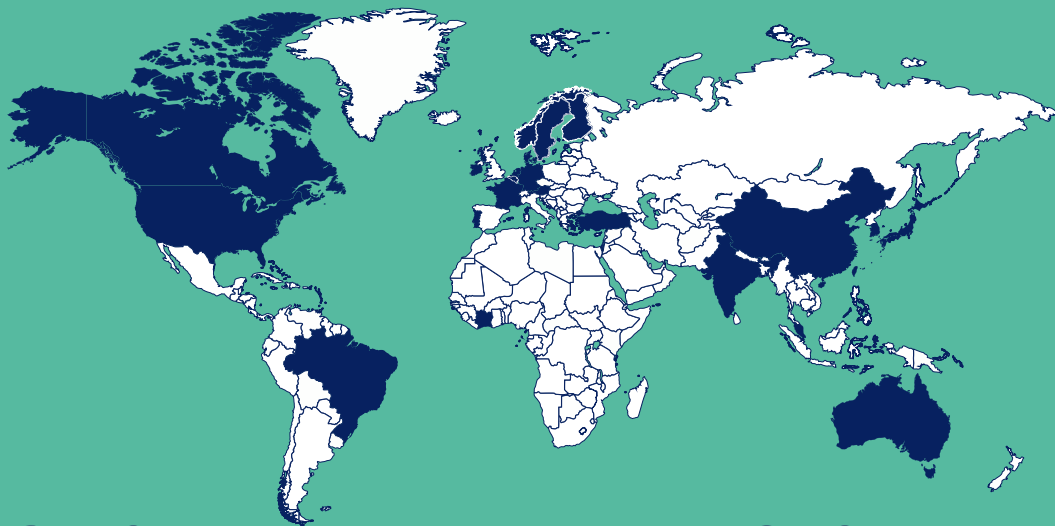
Enhancing the UK's excellence in
research and innovation through
global engagement



Building global partnerships

The Fund for International Collaboration (FIC) supports UKRI's aim of promoting the UK as a world-class destination to generate and access research and innovation. Through FIC, we're enabling UK researchers and innovators to collaborate with the best international partners across the world.

FIC research grants footprint contributes to the UK's world-class research and innovation across the UK. FIC research grants are spread across the UK – reaching all parts of the UK from Aberdeen to Plymouth.



£160m

UKRI's total investment in FIC

65

Innovation projects funded

350

Individual research projects funded

20+

Countries involved

165

UK businesses linked to innovation projects

3

Investments in infrastructure

*All figures based on June 2021 data. Map shows FIC partner countries only. UKRI collaborates with other countries worldwide through additional funding mechanisms.

Partnerships

International collaboration is central to excellent research and innovation. Through FIC we facilitate the UK's participation in global engagement and multilateral programmes; from supporting the commercialisation of new research to progressing humanity's understanding of topics like Artificial Intelligence (AI), advanced crop breeding, tackling infectious disease and creating clean energy technologies. These collaborations enable the UK to forge new or build upon existing relationships with other leading countries and, in turn, these partnerships generate a shared capability that helps build a better future and drive the UK's economic growth. Programmes like FIC put the UK at the forefront of a global network of academic and business partnerships tackling some of humanity's greatest challenges.

FIC enables UK researchers and innovators to collaborate with their counterparts in over 20 partner countries including China, India, Ireland, Japan, South Korea and the US, through a range of bilateral and multilateral programmes. UKRI's investments in FIC programmes are matched by an equivalent investment from the overseas partner funders, helping to build partnerships which can be sustained into the future.

For example:

- UKRI is working with partners in China under the Healthy Ageing Flagship, a key aspect of the Sino-UK joint Science and Innovation Strategy
- Partnering with the US to examine subpolar ocean currents in the North Atlantic and the impact on world climate
- UKRI has also strengthened the partnership with Japan within the spirit of the 2019 joint Prime Ministerial communiqués promoting cooperation on science, innovation and growth through programmes such as the MRC and Japan Agency for Medical Research and Development (AMED) call on regenerative medicine and stem cell research and the life and environmental sciences joint call with the Japan Society for the Promotion of Science (JSPS)

Innovation

○ Eureka is an intergovernmental network facilitating international collaboration in business led research and development. It involves over 45 countries, including world-leading research and innovation nations such as Canada, France, Germany, the Netherlands and South Korea. Funding from the FIC enabled Innovate UK to fund 68 UK businesses, from small high growth potential SMEs to large corporates, to engage in collaborative projects in areas such as Photonics for Manufacturing, 5G, AI and Quantum Technologies.

During the UK Chairmanship of Eureka, funding from FIC enabled Innovate UK to take forward discussions that enabled Eureka member countries to collaborate on calls with two non-member countries, Japan and Singapore, under the framework for the very first time. Both calls resulted in a strong UK response enabling business led collaborative projects to be funded for the first time with partners in both countries.

○ Innovate UK's first bilateral programme with the Israel Innovation Authority (IIA) provided UK companies with the opportunity to work with Israeli counterparts. By partnering with IIA, Innovate UK aims to help UK companies build commercial relationships with a view to accessing large global markets and enhancing business competitiveness and growth. Seven projects have been funded covering topics such as improving the safety and efficiency of lithium battery cells in cars, scaling up 3D printing in the global aerospace sector and creating a management system to optimise the production of renewable energy.

Research

○ The UK-China Creative Industries Collaboration, led by UKRI's Arts and Humanities Research Council (AHRC), in partnership with EPSRC and Innovate UK, enables the rapid scaling-up of creative industries engagements between the UK and China.

With a specific focus on Shanghai as China's cultural and creative industries powerhouse, new collaborations through FIC aim to deliver sustained economic, cultural and intellectual benefits in both countries.

A range of research-industry partnerships have been funded, focusing on themes from fashion to gaming and performing arts to immersive technology. Project partners have been drawn from across the creative industries, including Aardman Animations, who are working with the University of Liverpool and the Shanghai Theatre Academy to develop real-time, immersive and responsive animation technologies framed around the international marketability of the Shaun the Sheep brand. This project represents a major commercial export to China and is leveraging commercial opportunities for UK companies looking to expand into the Chinese market.

○ Four research partnerships have been funded to provide a deeper understanding of COVID-19 severity in South Asian populations located in India and the UK. UKRI's Medical Research Council (MRC) and Economic and Social Research Council (ESRC), in partnership with India's Department of Biotechnology (DBT), are supporting world-leading UK-India research teams.

The projects aim to understand the pandemic through the study of related ethnic groups in different environments in both countries and have the potential to deliver public health impacts in mitigating the severity of COVID-19 in both the UK and India.

○ The increasing prevalence of Artificial Intelligence (AI), machine learning and automation in many aspects of everyday life is already generating a wide array of economic, cultural and social challenges and opportunities.

In the foreseeable future, these technologies will affect people's lives in ways and to extents that are potentially highly disruptive, but which remain deeply uncertain.

The joint ESRC-AHRC call is the first bilateral funding call with Japan Science and Technology (JST) and has funded six innovative projects set to uncover the impacts AI could have on our lives.



Collaborations

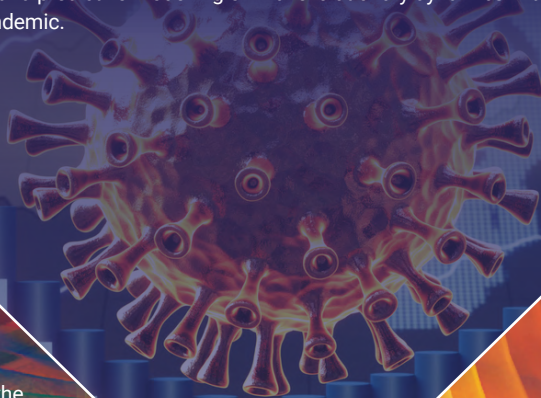
UKRI has partnered with Mitacs, a Canadian not-for-profit organisation, under the UK-Canada Globalink Doctoral Exchange Scheme to offer support for up to 200 UK students during a 12-week research placement at Canadian Universities. The programme includes projects such as investigating the evolution of cancer cells, looking at the impact of social networks on the wellbeing of single people and developing novel approaches to probe the mechanics of earthquake ruptures.

Another collaboration, led through the Ecology and Evolution of Infectious Diseases (EEID) programme, brings together the US, UK, China and Israel and takes a systemic approach to understand ways in which the natural and societal environments affect the emergence and re-emergence and spread of infectious disease in humans and other species. The modelling approach developed through one of the projects funded through this collaboration has already been able to play a broader role in the understanding and predictive modelling of viral evolutionary dynamics in the ongoing COVID-19 pandemic.

Infrastructure

UKRI is the lead international partner in the \$30 million project to upgrade the Nobel Prize-winning LIGO gravitational wave observatories working alongside US, Australian and German partners. Through ALIGO+, FIC funding enables the University of Glasgow scientists that helped design and build the mirrors at the heart of the detectors be involved in the upgrades.

Recently LIGO detected the most massive gravitational-wave source yet – a binary black hole merger, which produced a blast equal to the energy of eight Suns, sending shockwaves through the universe. It also appears the signal came from a source about 17 billion light years from Earth, making it one of the most distant gravitational-wave sources detected so far.



FIC and the UK/Canada Partnership

Science and innovation underpin the economies of both Canada and the UK and they have a long-standing relationship collaborating in aligned research priorities.

In September 2017 the UK and Canada signed a 10-year intergovernmental Memorandum of Understanding (MoU) to enhance bilateral cooperation in complementary areas of research, technology, entrepreneurship and innovation. Initial areas of focus include advanced manufacturing, agricultural technologies, clean technologies, and quantum technologies. It also looked to include under-represented groups, sharing benefits of economic growth in both countries.

The MoU also established a UK-Canada Joint Science and Technology Cooperation Committee (JSTCC) to meet annually to identify areas of strategic priority for potential future collaboration between the two countries. In 2018, the UK hosted the first JSTCC meeting where additional areas for focus were in response to interest from UKRI and Canadian funding agencies present. The additional areas added were Arctic research, agri-food and Artificial Intelligence with a view to develop joint funding programmes and activity through a coordinated dialogue.

The establishment of FIC soon after these discussions led to a timely bid for allocation of funds relating to the joint areas identified as a result of

the MoU signature and JSTCC discussions and facilitate delivery of priority areas both at the government and funder level. Alongside FIC's inception, the government-level commitment to joint funding of priority areas meant that not only was co-funding secured from Canadian partners in parallel, but flexible funding mechanisms were able to be used to support the diverse portfolio of activity.

As a result, FIC has invested £43 million in nine bilateral and multilateral programmes with Canada as a partner. The programmes support world leading research and innovation and involve eight UKRI Councils, with several of them being interdisciplinary. The portfolio of activity funded through FIC with Canada demonstrates the power of combining shared government desire to collaborate to address shared challenges with funder insight into the specific funding tools to use to best address those challenges.





The funded FIC programmes with Canada demonstrate a range of activities and partnerships including:

- Supporting innovative high growth UK businesses explore the potential of overseas markets in advanced manufacturing
- A PhD exchange scheme giving UK students the opportunity to expand their research through networking, access to Canadian infrastructure and mentors
- Building competitive and resilient economies through the UK-Canada collaboration on artificial intelligence
- Enhancing industrial productivity and the research and development collaborations between businesses in areas such as advanced manufacturing, food and drink processors

and automation and artificial intelligence innovators

- Collaborating to address grand challenges in neuroscience
- Delivering new understanding and tools to enable indigenous communities and the global community to adapt to environmental change in the Arctic
- Strengthening the strategic partnership between the UK and Canada through projects tackling the increasing burden of diabetes

Through these initiatives UKRI works with nine Canadian funding partners as highlighted above.



**UK Research
and Innovation**

About UK Research and Innovation

UK Research and Innovation (UKRI) brings together nine of the UK's leading funding councils to create knowledge with impact. We work with the UK government to invest over £7 billion a year in research and innovation by partnering with academia and industry to make the impossible, possible.

Our work encompasses everything from the physical, biological and social sciences, to innovation, engineering, medicine, the environment and the cultural impact of the arts and humanities. In all these areas, our role is to bring together the people who can innovate and change the world for the better – working in partnership with universities, research organisations, businesses, charities, and governments and non-governmental organisations (NGOs) across the globe.

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July 2021

About FIC

The Fund for International Collaboration (FIC) is a £160 million fund supporting international collaborations. It enhances the UK's ability to build new, and strengthen existing, partnerships with global research and innovation leaders.

We have worked with the Department for Business, Energy and Industrial Strategy to identify key partner countries for collaboration including China, Canada, South Korea and USA. There are over 20 partner countries involved in our bilateral and multilateral programmes.

The fund has already supported more than 30 international collaborative research, innovation and infrastructure programmes across UKRI's remit.

FIC has successfully delivered and attracted additional resources to fund international R&I collaboration and is on track to exceed £205 million in cash and in kind. Further, survey responses show that 41 per cent of UK researchers and innovators involved in FIC programmes reported additional resources leveraged for their FIC project.