KNOWLEDGE EXCHANGE PARTNERSHIPS

Funding Guide
Knowledge Exchange Funding supported by UKRI provides universities with an ability to accelerate the development and translation of research to application through partnership and collaboration in a rapid and effective way.

At the University of Manchester, we have utilised these flexible sources of funding with partners to ensure that our world-leading research realises its full potential and finding ways to create social, economic and environmental impact on a global scale.

Impact Acceleration Account (IAA) funding enables us to invest in opportunities to develop our researchers and their ideas and fosters a positive culture of innovation reaching deeply into our institution. Knowledge Transfer Partnerships facilitate the exchange of ideas and expertise with a focus on business need, to the benefit of the entire project team working in partnership with companies from a small regional SME partner through to a large multinational.

The strategic importance of these funds as mechanisms to facilitate long term, mutually beneficial collaboration continues to be a core priority for the University.

Dr Catherine Headley
Head of Business Engagement & Knowledge Exchange
FUNDING & CASE STUDIES GUIDE

Working in collaboration with our national funding agency

UK Research and Innovation

+ Funding - UKRI Impact Acceleration Account 04
+ Case study - Manchester University NHS Foundation Trust 05
+ Case study - Greater Manchester Combined Authority 06

Innovate UK

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Our UKRI Impact Acceleration Account (IAA) provides fast, flexible support to help businesses and other organisations develop mutually beneficial partnerships with academic experts.

In doing so, our IAA aims to foster a culture of innovation that drives organisational growth and impact, through core project mechanisms:

<table>
<thead>
<tr>
<th>Relationship Development</th>
<th>Average project length: 6 months part-time</th>
<th>Maximum award: £10k</th>
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<tbody>
<tr>
<td>Fostering new relationships between external partners and academic researchers, exploring possibilities for collaboration and knowledge exchange.</td>
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<tr>
<th>Proof of Concept</th>
<th>Average project length: 3-9 months</th>
<th>Maximum award: £30k</th>
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<tr>
<td>Support for the early stage of transforming research outputs into benefits for partner organisations. E.g., prototype development, feasibility studies, and scoping exercises.</td>
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<th>Secondment</th>
<th>Average project length: 9-18 months</th>
<th>Maximum award: £60k</th>
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<tr>
<td>Flexible support for secondments between The University of Manchester and partner organisations to expedite the translation of research outputs for mutual benefit and impact.</td>
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**How to apply**

Contact The University of Manchester’s Knowledge Exchange Partnerships Team. Our team can arrange an initial meeting to discuss your project, and review and advise on draft applications.

email: kepartnerships@manchester.ac.uk

web: www.manchester.ac.uk/collaborate/business-engagement
Innovative PPE respirator for healthcare workers on the frontline of the COVID-19 pandemic

The COVID-19 pandemic stressed the need for better personal protective equipment (PPE), with current products being challenging to fit, cumbersome, and restrictive to vision and communication.

IAA funding was secured to prototype a low-cost, ergonomic and highly functional PPE respirator, named Bubble PAPR. Bubble was designed to reduce transmission of the COVID-19 virus to healthcare workers while also improving the quality of critical communication between staff and vastly improving overall patient experience.

The team optimised the design for airflow, ergonomics and virus protection through simulation and testing in the hospital.

A collaboration between The University of Manchester, Wythenshawe Hospital, and consultancy Designing Science Ltd., resulted in the development of the novel low-cost Bubble PAPR. Bubble is a Powered Air-Purifying Respirator (PAPR), designed to enhance safety for healthcare workers on the frontline of the COVID-19 pandemic.

Challenge
The COVID-19 pandemic stressed the need for better personal protective equipment (PPE), with current products being challenging to fit, cumbersome, and restrictive to vision and communication.

Innovation
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Impact
This resulted in the novel, low-cost, and patent-protected Bubble-PAPR, an economical, comfortable, practical PPE hood that protects healthcare workers while allowing them to communicate with colleagues and patients.

Links
Video case study: Bubble Papr
GREATER MANCHESTER COMBINED AUTHORITY

Empowering local climate change action through the adoption of carbon budgets

Researchers at the University’s Tyndall Centre worked with local government and other organisations to provide tools to help set carbon targets and the policies to deliver them.

Challenge
In the face of inadequate measures on climate change from global state actors, many local agencies around the world are ready to act.

Research at The University of Manchester provides an evidence base for local action, but knowledge gaps existed around carbon budgets and incorporating climate impacts into resilience planning.

Innovation
IAA funding supported collaboration with organisations such as National Grid, Electricity North West, and Core Cities UK to translate Manchester carbon budget methodologies to sub-national carbon budgets.

Impact
This work has had a major impact across the UK by directly changing how numerous Local Authorities set carbon targets and the associated policies to deliver them.

In Manchester, it contributed to important local strategy including the Greater Manchester Covid-19 Recovery Plan, and the Greater Manchester Local Industrial Strategy.

The methodology has also changed the approach to climate change action in West Midlands Combined Authority, Sheffield City Council and Leeds City Region.

Links
Website: The Tyndall Carbon Budget Tool

at least 18% of the UK population live in areas that have formally adopted Tyndall-Manchester’s carbon budgets
KTP is a leading UK knowledge exchange programme that applies university research to deliver a strategic, transformational innovation project in a business, charity, or public sector organisation.

Each KTP project recruits a high-calibre graduate, known as a KTP Associate, aided by specialist academic support from The University of Manchester, to embed critical knowledge and capability that helps organisations improve their competitiveness and profitability.

**Project Length**
Projects can last 1-3 years and are focused on transferring and embedding new knowledge and skills to encourage business growth and innovation.

**Average project length:** 24-30 months

**Grant Funding**
- 50% for large businesses and public sector organisations
- 67% for SMEs
- 75% for charities and SMEs in Wales

**Benefits**
Businesses achieve an average increase in annual profit of more than £1 million after taking part in KTP. Academic partners produce on average more than 3 new research projects and 2 research papers for each project.

The University of Manchester has an application success rate of 95%.

**How to apply**
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- web: www.manchester.ac.uk/collaborate/business-engagement

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A highly successful collaboration between the University of Manchester and leading terrain footwear brand inov-8 saw the launch of award-winning graphene-enhanced footwear, and created a global hit product.

**Challenge**
Trail running shoes need excellent grip, but this traditionally requires a soft rubber, compromising the lifetime of the shoe.

Graphene is 200 times tougher than steel but is extremely flexible, giving it the potential to enhance both the grip and durability of rubber, and deliver a step-change in the performance of sports footwear.

**Innovation**
The partnership developed graphene-enhanced outsoles and foam, increasing the shoes’ elastic and hard-wearing properties by 50%, and offering 25% more energy return in the midsole.

This increases the performance and the lifespan of the shoes, reducing their environmental impact while offering athletes a competitive edge.

**Impact**
Two patent-pending technologies, the Graphene-Grip™ (the world’s toughest grip), and the G-FLY™ (graphene-enhanced foam midsoles), have been brought to market.

By 2023, inov-8 had sold over 550k units of graphene-enhanced footwear.

The footwear has since gone on to win multiple awards. The TRAILFLY G 270 and TRAILFLY ULTRA G 300 MAX were both named ‘Trail Running Shoe of the Year’ in the Runner’s World UK Gear Awards for 2020 and 2021 respectively.
This collaboration combined precision engineering manufacturers Sandon Global, and the University of Manchester’s expertise in materials science and surface engineering, to position Sandon as the commercial centre of excellence for Anilox technology to the print industry.

Challenge
Sandon Global manufacture precision-engineered anilox rollers for the printing industries.

The rollers’ ceramic coating is laser engraved with microscopic cells to allow a precise depth of colour to produce high-quality printed packaging.

In partnership with the University of Manchester, Sandon sought to optimise the rollers’ chromium oxide coating and become market leaders in quality and innovation.

Impact
Sandon has utilised the partnership to introduce innovation to a market that had been largely stagnant for more than 30 years.

The KTP has presented an opportunity for Sandon to expand globally, taking a new product line to market that offers significantly enhanced performance.

The partnership with the University of Manchester continues to grow, and a second KTP is now delivering digital transformation to the company.

Innovation
The unique blend of academic knowledge and practical experience has allowed the partnership to challenge much of the established science and technology that have prevailed within the industry for years.

The team developed a coating that is more resistant to wear, eliminates scoring, and enhances the precision of printing; and the introduction of new analytical capabilities has afforded Sandon a new level of understanding at every stage of the manufacturing process.

Links
Video case study: Sandon Global
Interested in exploring how a Knowledge Exchange Partnership with The University of Manchester can benefit your organisation?

To discuss which funding scheme is appropriate for your project, and for help with applying, contact us at:

- **email**: keppartnerships@manchester.ac.uk
- **web**: visit the BEKE webpages
- **scan** Qr code below
- **social**: follow @UoM_BEKE