

MANCHESTER
1824

The University of Manchester

BUSINESS ENGAGEMENT & KNOWLEDGE EXCHANGE





PARTNER COLLABORATE INNOVATE

Manchester. A city of firsts. A city with a history of being at the forefront of technical and scientific innovation, coupled with social progress and ambition to shape the future.

The University of Manchester sits at the heart of this story, with a rich tradition of world-leading academic excellence translating into real-world impact.

Whether you're an international blue chip organisation, an ambitious SME or a charity with an eye for innovation, a partnership with the University can have a significant impact on your organisation.

We offer access to expertise, facilities, research and technology to channel innovation to the heart of your business. We build connections so that your business can access a broad range of expertise and services, including research collaboration, consultancy, skills, recruitment and facilities.

Why The University of Manchester?



Reputation for innovation

From the first modern computer to our pioneering work on graphene, our reputation for innovation has transformed the world we live in, making a difference on an international scale.



Breadth and depth of expertise

Our cross-collaborative approach allows for real-world impact and interdisciplinary innovation.



Global impact

We are proud to be number one in the world for social and environmental impact and first in the UK for Innovation, Infrastructure and Industry in the Times Higher Education.



Dedicated business support

Our Business Engagement and Knowledge Exchange Team will help you find the expertise you need to help you achieve your business goals.

FACTS AND FIGURES 2021

Our history

1824



The Manchester Mechanics' Institute opens to educate the city's working population

1880



Owens College becomes the first part of the Victoria University, England's first civic university

2004



The University of Manchester is created by amalgamation of the Victoria University of Manchester and the University of Manchester Institute of Science and Technology

25



25 Nobel Prize winners among our current and former staff and students

Research & discover

35th 27th

Research quality ranked 35th in the 2021 Academic Ranking of World Universities and 27th in the QS World Rankings

Social responsibility

1st

THE FIRST

British university to set social responsibility as a core goal



THE WORLD'S TOP INSTITUTION FOR SOCIAL AND ENVIRONMENTAL IMPACT

(Times Higher Education), aligning with the [UN Sustainable Development Goals](#)

6,276 STUDENTS

£12.3M FUNDING

Access to education: 6,276 students received more than £12.3 million of funding via the Manchester Bursary

Innovation



The **Innovation Factory** uses a stage gate process to effectively capture and rapidly evaluate new inventions coming out of The University of Manchester

£868m

Almost £868 million of **economic impact** contributed by our commercialisation activities since 2004



Health Innovation Manchester **accelerates the benefits** of our research for our region's health and social care services



ID Manchester will transform our North Campus into a **world-class innovation district**

Teaching & learning



University of the Year
for Graduate Employment (*The Times and Sunday Times Good University Guide 2020*)



Multi-million pound investment
in flexible, blended learning that's accessible, inclusive and international



Three National Teaching Fellowships awarded over the last year, as well as 436 other fellowships

Our people

40,485*

STUDENTS

across undergraduate, master's and research

500,000

ALUMNI

in more than 190 countries. Notable alumni include **Simon Armitage CBE** UK Poet Laureate; **Vincent Kompany**, Footballer and Entrepreneur; **Benedict Cumberbatch CBE**, British actor and **Dr Winnie Byanyima** Executive Director of UNAIDS

12,920**

STAFF

across academia and professional services

Civic engagement

18,000
JOBS

18,000 jobs and more than **£1.7 billion** of economic value a year created for the city region

1,250
STAFF

More than **1,250 staff** and alumni placed into governor roles by our School Governor Initiative since 2012

World rankings



Nearly half of our academic and research staff work on interdisciplinary research, showcased by five research beacons: advanced materials, cancer, energy, global inequalities and industrial biotechnology



Five dual-award PhD programmes with global strategic partners

Global influence

23rd

MOST INTERNATIONAL
university in the world
(Times Higher Education 2021)



GLOBAL PARTNERSHIPS
with leading universities, research institutes and industry

£20.6m
PHILANTHROPIC INCOME

from global alumni and donors has helped to fund £20.6 million worth of activities including scholarships, research programmes, capital projects and student support packages

OUR VISION

We will be recognised globally for the excellence of our people, research, learning and innovation, and for the benefits we bring to society and the environment.



OUR VALUES



Knowledge

We are ambitious in our pursuit of new ideas, greater understanding and discovery.



Wisdom

We share and apply our knowledge and experience to guide balanced and evidenced decisions for ourselves and for society.



Humanity

We embrace and celebrate difference, respect and support each other, and act with integrity to benefit society and the environment by transforming and enriching lives.



Academic freedom

We support with enthusiasm and vigour the principles of freedom of thought and speech.



Courage

We think and speak freely, and act boldly to challenge assumptions and shape our future for the greater good.



Pioneering spirit

In the radical Manchester spirit, and inspired by our people, history and scale, we create the exceptional.

OPPORTUNITIES

TO ENGAGE WITH THE UNIVERSITY OF MANCHESTER

Engagement with the University can take many forms, with differing levels of commitment between partners and the University.

Our collaborative partners work with us across a range of different initiatives that benefit everyone.



Collaboration

Collaboration with us allows you to gain fresh insights to inform your business strategy and leverage new technology to innovate, or access cutting-edge research – these are just some of the ways that access to University research can help you:

- collaborative research projects;
- knowledge exchange funding, such as knowledge transfer partnerships;
- jointly leveraged funding;
- PhD sponsorship;
- access to novel technology.

Consultancy and services

Consultancy is a quick and flexible way of engaging with the University, providing organisations with access to the expertise they need when they need it.

We also offer a range of cutting-edge facilities and services covering a broad range of activities, such as:

- technical expertise and specialist opinion;
- contract research;
- access to specialist facilities and equipment;
- contribution on advisory boards;
- expert witness services.

Training and skills

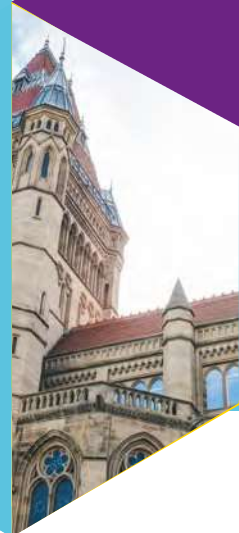
We offer a variety of opportunities to help your business find the best talent, develop workforce skills, and access knowledge through:

- recruitment services and internships;
- secondments, fellowships, and honorary appointments;
- sponsored academic appointments/endowments;
- industrial input into teaching programmes;
- executive education, master's courses, and bespoke training.

Small and Medium-sized Enterprises:

COLLABORATE

WITH THE UNIVERSITY OF MANCHESTER



The University of Manchester partners with a range of organisations in a variety of ways.

The University offers a wide range of opportunities for Small and Medium-sized Enterprises (SMEs) to access professional and academic support to grow, develop and innovate.

What are the opportunities?

Knowledge exchange services

Our [knowledge exchange](#) services translate world-leading research to strengthen UK businesses, increasing economic growth and societal benefit. We have a comprehensive range of supportive programmes and funding available to fast-track business and innovation aspirations.

SME-support programmes

We deliver several specific SME-support programmes and networks, such as [Bridging the gap](#), [The Scale-Up Forum](#), [GM AI Foundry Project](#), and [The Research and Innovation \(R&I\) Health Accelerator](#).

Next generation talent

If talent is what you are seeking, our very own [Manchester Graduate Talent](#) and [International Talent](#) programmes within the [Careers Service](#) can help your business find the best and the brightest.

Professional training and development

Additionally, [Executive Education](#) programmes are available at the Alliance Manchester Business School as part of a range of [Continuing Professional Development](#) courses, which offer insight to inspire leaders, change cultures, and transform organisations.

Our dedicated teams provide tailored support to fit the different needs of SMEs at all stages of their journey.

What are the main benefits?

Collaborating with The University of Manchester can have numerous benefits for your organisation, including:



Bringing grant funding into your business



Accessing support for business innovation, growth and transformation



Forging stronger relationships with academia and the Higher Education Sector



Developing skills and strategies to overcome your business challenges



Creating and sustaining successful commercial and economic outcomes



Finding solutions for you and your professional development needs via world class expertise

STRATEGIC PARTNERSHIPS

WITH THE UNIVERSITY OF MANCHESTER



The University has a portfolio of strategic partnerships with industrial organisations; these partnerships are characterised by engagement activities across multiple faculties and disciplines.

The purpose of these alliances is to provide significant mutual benefit to both the University and our collaborators.

Current strategic partnerships include a diverse range of multi-national organisations from a variety of industry sectors

Characteristics of a strategic partnership

- A high-level relationship governed by an overarching agreement, such as a framework agreement or Memorandum of Understanding;
- Sponsorship of the relationship and engagement by senior leadership from both organisations;
- Alignment between both partners core values and strategic priorities;
- Engagement from the industry partner in significant research, skills development, and knowledge exchange activities at the University across multiple faculties.

Mutual benefits of working together as strategic partners



Aligned strategic priorities



Building a future workforce



Broadening of existing relationships



Collaborations drive innovation to real world problems



Knowledge exchange opportunities



Efficiency, knowledge and familiarity with partner processes



Access to experts and facilities



A framework agreement provides streamlining of contractual processes

Consultancy and Services:

ACCESS TO WORLD-CLASS EXPERTISE



Consultancy is a quick and flexible way of engaging with The University of Manchester, providing organisations with access to the expertise they need, when they need it.

Whether it is a world-leading expert in oncology, an up-and-coming academic in environmental science with new ideas, or a group of academics who can provide valuable insight to a project, consultancy allows organisations and companies to find and work with experts who can provide an edge, and find solutions to challenges.

What are the opportunities?

With almost 7,000 academic and research staff at the University, we offer an unrivalled pool of expertise and experience across three Faculties.

Consultancy is used to describe a breadth of activities, but these are typically short, flexible non-research activities where you need access to existing expertise, such as:

- technical expertise;
- specialist opinion;
- contract research;
- access to facilities and specialist equipment;
- contribution to Advisory Boards;
- expert witness services;
- production of specialist reports or literature reviews.

Why hire consultants from The University of Manchester?

Collaborating with us can have numerous benefits for your organisation, including:



Bringing in world-class or industry-leading expertise that isn't available anywhere else



Build relationships with academics and the University



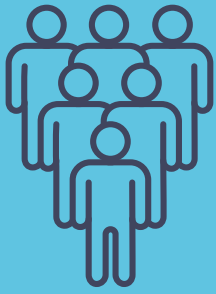
Gain an insight into the leading edge of science, discovery, and innovation



Collaborate with one of the top universities in the world on an affordable, short-term basis



Work flexibly with researchers and academics to gain expertise when you need it.



SMALL AND MEDIUM-SIZED ENTERPRISES

Case studies



PROF NICK LOCKYER & IONOPTIKA LTD

A SOUTHAMPTON-BASED SME

Overview

The collaboration between Prof Nick Lockyer and Ionoptika Ltd to develop polyatomic ion sources has been ongoing since 2000. Their joint mission was to revolutionise the capabilities of Secondary Ion Mass Spectrometry (SIMS) by overcoming its utility limitations.

Prof Lockyer is a Professor of Physical Chemistry at the University of Manchester and Ionoptika is a British SME, specialising in Ion Beam Technology.

Ionoptika's role within this collaboration was to help Prof Lockyer by developing polyatomic ion sources for SIMS through providing engineering expertise and routes to commercialisation.

This long-standing collaboration led to firstly C60+ primary ion beam source, and more recently massive Gas Cluster Ion Beams (GCIBs), as well as the ground-breaking SIMS instrument, the J105 SIMS.



"Our collaboration with Prof Lockyer and the University of Manchester over the past 20 years has been of enormous benefit to Ionoptika, and to the scientific community at large. The development of gas cluster ion beams for SIMS has added enormous value to research in fields such as cell biology, lipidomics and cancer research. We look forward to continuing this fruitful relationship long into the future."

Paul Blenkinsopp, Director of Ionoptika Ltd



Benefits

This collaboration not only brought benefit to the University of Manchester in achieving their research goals for which they received multiple awards, but also brought quantifiable economic and commercial benefit to Ionoptika.

In particular, the commercialisation of the J105 SIMS has led to further instrument sales, which in turn resulted in increased turnover and job creation. The collaboration also helped Ionoptika's emergence as an international leader in SIMS technology.

The collaboration has been crucial to the implementation and commercialisation of polyatomic SIMS, allowing industrial users worldwide to access and apply these new measurements tools to derive new levels of understanding on products and their performance, leading to significant economic impact.

Spotlight

- On-going 20 year partnership between the University of Manchester and Ionoptika.
- Changed both practice and capacity across industrial sectors spanning manufacturing to healthcare.
- Further collaboration with Prof Richard Curry in technology development for ion implantation ([Henry Royce Institute P-NAME Facility](#)).



A global technology-based company stated that, "The University of Manchester group has been pivotal in the development of technologies and methodologies for the practical implementation of polyatomic SIMS."





SCALE UP FORUM:

THE POWER OF PEER-TO-PEER NETWORKING WITH ACADEMIC BACKING

What it is

Hosted by Alliance Manchester Business School and The University of Manchester, The Scale-Up Forum is a peer-to-peer network for ambitious 'scaling up' businesses in Greater Manchester.

It provides a unique platform for companies from any sector, at all stages of their scale-up journey, the opportunity to share experiences, challenges and lessons learnt for mutual business benefit.

It is a catalyst that brings together scale-up expertise and academics for the benefit of the scale-up community in Greater Manchester.

Our partners

Today the forum has cooperative agreements with The Business Growth Hub, Greater Manchester Chamber of Commerce, Bruntwood SciTech, BIONOW, Alderley Park, The Productivity Institute and other organisations who sign-post companies to the Scale-Up Forum and offer support to its members.

The challenges

Fast growing companies face particular challenges such as hiring talented employees; building leadership capability; accessing customers in new markets at home or overseas; and accessing the right combination of finance, etc.

The Scale-Up Forum recognises that the scale-up leaders are seeking local solutions to help them break down the barriers to growth.

Tackling the challenges

Since February 2020, The University of Manchester has hosted several different themed Scale-Up Forum events.

The thematic talks bring members together to hear insights from academics and practitioners on specific topics, including recruitment and retention; building leadership capability; and strategies for accessing new customers.

The workshops link up businesses from Greater Manchester, academics from a range of disciplines and business engagement specialists, to work in teams to build management capabilities and develop pathways to further advice and support.



Scope for further collaboration

The Scale-Up Forum provides not only support on specific topics and issues, but also wider support for the scale-up community.

For example, being part of the Scale-Up Forum, Tiger Trailers Ltd (one of Europe's leading trailer and rigid bodywork manufacturers) benefited from specialised support and was able to form strategies

to overcome the various challenges presented to their business.

Specifically, their senior managers joined Alliance Manchester Business School's Manchester Leadership Development Programme, which has supported them to develop the leadership skills, knowledge and attributes to take their business to the next level.

Find out more

For further information, find us on the Scale-Up Forum webpage
<https://www.alliancembs.manchester.ac.uk/collaborate/scale-up-forum/>



"Scale-Ups are a critical part of the UK economy and need greater recognition and support. I am delighted that Alliance MBS, through its Scale-Up Forum, are supporting these important businesses to address their scaling challenges."

**Professor Colette Fagan, Vice-President for Research,
The University of Manchester.**



Liam discussed the important role that support for scale-ups played in the growth of his business, he explains: "the whole scale-up journey for us has been a really positive one, but we have only been able to do it with this infrastructure and support".

Liam Manton, Co-founder of South Manchester based Didsbury Gin.



CONCRETENE

GRAPHENE ENGINEERING INNOVATION CENTRE (GEIC) AND DEPARTMENT OF MECHANICAL, AEROSPACE AND CIVIL ENGINEERING (MACE), THE UNIVERSITY OF MANCHESTER

NATIONWIDE ENGINEERING GROUP LTD, AN ALUMNI-LED CONSTRUCTION FIRM

Overview

A joint venture between graphene specialists (from the GEIC and MACE) at The University of Manchester and an alumni-led construction firm, Nationwide Engineering, was formed in order to make concrete cheaper and greener.

The collaboration led to a game-changing, graphene-enhanced product, 'Concretene', supported by the knowledge and experience of a number

of graphene specialists at the University of Manchester.

Specifically, the addition of tiny amounts of graphene, strengthens Concretene by around 30% compared to standard concrete, meaning significantly less material is needed to achieve the equivalent or improved structural performance.

This will enable reductions both in cost for users and in carbon footprint.

Spotlight

- Concretene promises to deliver cost savings for Nationwide Engineering and for its Customers.
- In the race to achieve net-zero, Concretene has the potential to deliver significant environmental benefits.



"Our partnership with the University has fast-tracked the development of Concretene, going from lab to product in 18 months."

Alex McDermott, director of Nationwide Engineering, who is also a civil engineering graduate from Manchester.



Benefits

This partnership brought benefit to the University of Manchester in turning research into a real world graphene-based application, and also Nationwide Engineering, which gained funding support from Innovate UK and the European Regional Development Fund (ERDF) Bridging the Gap programme at the GEIC.

The key aspect of the technology - reductions in material required - means savings can be passed on to customers, with Nationwide Engineering estimating a 10-20% saving, depending on the size of onward projects.

Nationwide Engineering is now positioned for wider industry deployment through their construction frameworks and has become the go-to company for graphene-enhanced concrete.

Concretene has the potential to revolutionise the concrete industry and its impact on the environment.

In particular, the technology could shave 2% off worldwide emissions, if rolled out across the global building industry supply chain.



"This Manchester-based technology positions our region as a global R&D centre for sustainable materials for the construction industry – and can contribute to the levelling-up agenda by attracting investment, creating new businesses and offering high-wage jobs."

James Baker, CEO Graphene@Manchester.



ABACUSS

ACCELERATOR FOR BUSINESS CHALLENGES AND SOCIAL SCIENCE & VIRA HEALTH, A DIGITAL HEALTH START-UP COMPANY

Overview

The AbaCuSS intrapreneurship project, led by the Universities of Manchester and Glasgow, aims to develop and provide a proof of concept for working models of intrapreneurship within the social sciences, and bring social scientists and industry partners closer together.

In particular, the project places Postgraduate students and early career researchers into intrapreneurship-based placements within participating businesses to tackle their specific and industry-wide challenges.

Among the participating companies, Vira Health, a digital health start-up company, identified challenges and sought support through the project.

The challenges

In order to improve the long-term health of women, Vira developed a digital therapeutic app that supports women through the menopause, 'Stella'.

To test the effectiveness of Stella before its full release, Vira ran a pilot study.

But challenges came in analysing the data in terms of determining the success of the pilot (as well as making recommendations based on the findings) and so they sought expertise.



"Hannah has been critical to getting the Stella app into women's hands! She has supported on a variety of areas, from coach training, how we think about empathy and getting all the resources uploaded on to the app. She is adaptable, full of positive energy and deeply committed to equity in women's health."

Andrea Berchowicz, Co-Founder and CEO of Vira Health



Tackling the challenges

In order to tackle the challenges, Vira joined the ABaCuSS intrapreneurship project and two students were recruited from the University of Manchester.

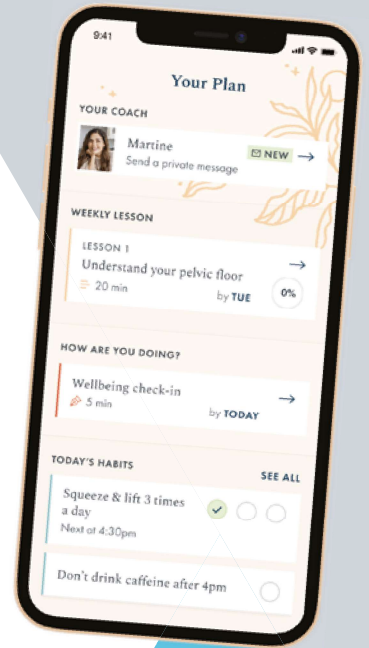
In particular, having analysed the data on drop-outs from the pilot, one student made recommendations on how to reduce drop-outs on full release. He also explored how competitors automate and collect data about their users.

The other student analysed coach and user conversations and pulled out real examples from the pilot study of 'what to do and what not to do'. This will be used in future coach training when teaching empathetic vs. non-empathetic responses.

Benefits

As a result, Vira benefited greatly from the analysis generated by the students on placement, which will be used to improve the delivery of Stella, helping to combat the symptoms of menopause for women.

Students gained valuable experience of application of research skills outside academia in the context of working at a health-tech start-up.



"Erlend has transformed our thinking on coach automation and how we think about personalisation within our product! He is proactive, thoughtful and certainly learned a lot about menopause."

Andrea Berchowitz, Co-Founder and CEO of Vira Health



PROF CLARE MURRAY AND PROF STEPHEN FOWLER & OWLSTONE MEDICAL LTD, A BRITISH SME

Overview

The University of Manchester (UoM) is at the forefront of investigating the chemistry of exhaled breath. The NIHR Manchester Biomedical Research Centre (BRC) is jointly hosted by UoM with Manchester University NHS Foundation Trust (MFT). BRC Asthma Programme Associate Leads Professors Clare Murray and Stephen Fowler have partnered with Owlstone Medical, who developed Breath Biopsy, a reliable and non-invasive method for the collection

and analysis of volatile organic compounds (VOCs) on exhaled breath.

Supported by world-class facilities and expertise at the NIHR Manchester Clinical Research Facility (CRF) at Wythenshawe Hospital (part of MFT), the purpose of the collaboration is to use Breath Biopsy to help identify breath-based biomarkers that could help to diagnose asthma and personalise treatment for patients.

Spotlight

This collaboration hopes to:

- enable the rapid, accurate and low-cost diagnosis of asthma;
- classify different forms of asthma without the need for invasive and unpleasant tests;
- predict early if someone is likely to respond to inhaled corticosteroid treatment (the first treatment offered for asthma patients).



"The diagnosis and treatment of asthma remains very challenging, not least because it is better considered a syndrome with many underlying causes, which may require different treatment approaches. The emergence of new devices that enable biomarkers to be detected on breath however, has the potential to revolutionise asthma diagnosis, and we are very pleased to be working with Owlstone Medical on this important project."

Professor Clare Murray, NIHR Manchester BRC Asthma Programme Associate Lead



Benefits

There is no single test for asthma, and many of the tests currently used can be invasive, difficult to perform or unpleasant for patients. Finding the right treatment for patients can also be challenging, as different types of asthma require different medications. Breath tests are non-invasive and easy to do, even for young children or people with breathing difficulties. This work aims to find ways to accurately diagnose asthma and differentiate between types of asthma, allowing more patients to find the treatment that is right for them sooner.

For The University of Manchester, this collaboration has further cemented its

leading position in the clinical application of the chemistry of exhaled breath. For Professors Murray and Fowler (and colleagues), this means being able to easily and reliably sample the breath in a way that conveniently fits into the sequence of clinical tests that participants undertake during the Manchester BRC-RADicA asthma diagnostic study. For Owlstone Medical, this work is generating data that has helped to secure funding and advance the Breath Biopsy system, and is helping to reveal breath biomarkers that could be developed into clinical breath tests for asthma.



"There are an estimated 339 million people with asthma worldwide, of whom only around 18% are fully in control of their symptoms. Identifying VOC biomarkers and developing a breath test for asthma is a crucial priority for us that will dramatically improve on current methods. Our work with The University of Manchester and the NIHR Manchester BRC, supported by Asthma UK and Innovate UK, provides us with a key opportunity to collaborate with leading researchers and progress towards a test that could help millions of people to benefit from personalised healthcare."

Billy Boyle, co-founder and CEO at Owlstone Medical

