

MANCHESTER
1824

The University of Manchester

A female scientist with short brown hair, wearing a white lab coat, is smiling at the camera while holding a pipette. She is in a laboratory setting with various equipment and shelves in the background.

Innovation

Our future

Knowledge | Wisdom | Humanity

2021-25 plan

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Foreword



Innovation and enterprise have been core activities for The University of Manchester since our foundation during the Industrial Revolution. Ensuring that the knowledge we create and the people that we educate benefit society is crucial, be it for the economy through new business and improved productivity and 'levelling up' regional inequalities, or to address the grand challenges we face in healthcare and the environment.

In recent years, we have built a strong platform to take these areas forward. Our work with business is consistently highly ranked for collaborative research (by value and volume); we have a leading position for Knowledge Transfer Partnerships (a key instrument for working with small and medium-sized enterprises); and perform well with spin-outs and licensing. Surveys also place us as the top destination for graduate employers.

However, this is no time for complacency. Many features of the innovation landscape are changing and our new strategy needs to adapt to in response. The UK's commitment to increase R&D spending by one third by 2025 – with at least 55% outside the greater south-east – and for it to reach 2.4% of GDP by 2027 is intended to drive increased business investment in innovation, emphasising the importance of growing our collaborative links.

Innovation Greater Manchester's strategy for levelling up fits well with our key strengths but requires renewed efforts to connect with businesses in the city region. Devolution, particularly of the health budget, provides another set of imperatives for innovation. As the 'Place' agenda matures, more attention is being paid to the importance of agglomeration, including the role of science parks and innovation districts, such as the dynamic Oxford Road corridor where we are situated. The development of Innovation District (ID) Manchester, set out in this plan, will create opportunities for new

approaches to business engagement and a need to continuously adapt to the changing occupier mix and also the needs of firms on that site.

The international locus of research and innovation activity is also changing. The substantial growth of business R&D in East Asia has raced ahead of national investment and emphasises the need for a global perspective. This creates opportunities to leverage our knowledge base by attracting inward investment, as well as establishing collaborations with the world's leading companies. However it also brings in its wake the need to ensure that we serve the national interest and keep ahead on security and the protection of intellectual property.

Another change in the R&D landscape stems from developments in the business world. The digital agenda has helped bring the service sector clearly into the scope of R&D and innovation targets. The University is in a position to help firms in legal, financial and other services to navigate this transition, often by combining expertise in the domain with digital competencies. The population of firms is also changing. Manchester's reputation for growing 'unicorns' (firms which have grown to a valuation of more than \$1 billion) demonstrates the importance of working with fast-growing firms (scale-ups), but their very nature demands new approaches to business engagement.

Last, but certainly not least, is the people dimension. We already place emphasis on student entrepreneurship, driven by the Masood Entrepreneurship Centre. Increasingly enterprise education is built into the student experience as many seek to build careers in their own start-ups or work at dynamic small and medium-sized firms. Internships ensure that relevant experience is built during study years, and we benefit from the experience of those in the world of work who contribute to our educational offer. At a more mature career stage, executive education and continuing professional development provide necessary updates to the skills and knowledge of key cohorts of professionals.



Luke Georgiou
Deputy President and
Deputy Vice-Chancellor

Purpose, vision and strategic plan

Our strategic plan

The strategic plan sets our University's priorities for the first five years of our journey towards the vision. We have built our strategic plan around three core goals and four themes.



The innovation plan sits within the broader purpose, values and measures of *Our future*, our vision and strategic plan.

Our purpose

To advance education, knowledge and wisdom for the good of society.

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

As an autonomous institution, we will strive to bring our shared values to life.

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.

Our overarching ambition in this area is to be known globally as Europe's most innovative university.

We will create a world-leading innovation campus, where tomorrow's solutions are developed and realised, and be celebrated as a hive of commercial and social enterprise. In achieving these we will focus on five priorities:

1. Innovation District (ID) Manchester.

We will transform our former North Campus into ID Manchester, a world-class environment where breakthrough ideas are turned into reality.

2. Health innovation.

We will accelerate the benefits of our research through our relationship with the regional health and social care services, notably through Health Innovation Manchester, and the establishment of our Christabel Pankhurst Institute for Health Technology, Research and Innovation.

3. Graphene commercialisation.

We will create a thriving knowledge-based economy around graphene and 2D materials.

4. Innovation ecosystems.

We will build the ecosystems for the next innovation opportunities, including facilities to support our city's clean growth mission and driving innovation through Creative Manchester.

5. Enterprise through knowledge and commercialisation.

We will transform the scale of our intellectual property commercialisation activity, implement Northern Gritstone, engage staff and establish entrepreneurship as a defining feature of the Manchester experience for students.

To realise these priorities, we will ensure that our people are empowered to take advantage of these initiatives and that we have fit-for-purpose support structures for all aspects.

Priority one

Innovation District (ID) Manchester

This priority is to transform our North Campus into ID Manchester. It will be home to world-class innovation businesses across multiple sectors, which will operate in a series of connected clusters that work as an integrated system to support cross-fertilisation and agglomeration effects. The following actions set out the two key steps to achieving this priority.





Action one: progressing the joint venture

In the first part of this period, we conducted a competitive tender process to identify an investment and development partner with the capacity to develop the site in line with the vision. The selected partner, Bruntwood SciTech, has entered a joint venture with the University to realise this £1.5 billion innovation district.

ID Manchester will be a prime gateway to the series of established innovation clusters near Oxford Road. Extending to 18.2 acres, the site will offer some four million square feet of new workspace and public realm. The ambition is that the first businesses occupy 'meanwhile' space on the site and the first purpose-built premises will be complete as early as 2026.

Action two: establishing an innovation platform

Critical to the success of an innovation district is the environment it offers to innovative firms and much of this will come from being adjacent to a major education and research institution. The University will also have the chance to gain substantial benefits from the proximity to a concentration of innovative firms, offering new and deepened partnerships, employment and work-experience opportunities for students and an environment for research commercialisation to flourish. We will adopt a proactive approach towards anchoring and engagement with the district. An ID Manchester Platform will be established by the joint venture and in collaboration with the University's business engagement team.

The platform will provide streamlined access to the University's assets and services, as well as bespoke services based on the needs of current and potential occupiers.

Priority two

Health innovation

This priority is to build upon the largest concentration of excellence in health research nationally outside the south-east, while also accelerating the benefits by taking advantage of our relationship with the regional health and social care services via Health Innovation Manchester, the unique nature of devolved healthcare in the city region and the establishment of our centre for health translation and innovation. The following actions set out the two key steps to achieving this priority.





Action one: establish the Christabel Pankhurst Institute for Health Technology, Research and Innovation

A new research institute has been established – to be based in prominent buildings on the Oxford Road Corridor – which aims to capitalise on the University’s strengths in digital health, advanced materials for innovative health and care solutions, as well as those in health management and policy.

Working with our regional health partners, the Institute is drawing upon £5 million in support from the Greater Manchester Combined Authority (GMCA) and over £15 million of research funding to develop innovative products and services for the health and social care sector. In turn, this will drive business growth and employment, as well as boost the long-term health and wellbeing benefits of the city region. We will also engage with medicines manufacturing, characterisation of disease profiles through the Stoller Centre, work in health economics and study the links between climate change and health.

Action two: unlock the full potential of the regional health innovation ecosystem

We are partners with the largest concentration of National Institute for Health and Care Research (NIHR) clinical research infrastructure outside of the greater south-east. This is embedded in Health Innovation Manchester partners, Manchester University NHS Foundation Trust (MFT, the largest NHS Trust in the country), The Christie NHS Foundation Trust (the largest cancer care campus in Europe) and Salford Royal NHS Foundation Trust (the regional neuroscience hub).

Commercial innovation partnerships range from global leaders to rapidly developing start-ups. This creates a leading UK ecosystem for healthcare diagnostics innovation (the commercial partners hold more than 30% global market share). A key developing partnership is with UK Biobank, one of the world’s leading biomedical database and resource collections. We will develop systematic, comprehensive platforms for genome-scale biomarker discovery and advanced therapeutics, dovetailed with our regional excellence in medicines manufacturing.

Priority three

Graphene commercialisation

Manchester's Nobel Prize-winning isolation of graphene in 2004 opened a new range of opportunities for business. Our efforts have focused on the acceleration of the typically long gap between discovery and the application of new advanced materials. With world-leading facilities and more than 300 researchers engaged with graphene and other 2D materials, we have built strong partnerships with both national and international businesses and can boast a growing portfolio of start-up companies from staff and students.

This priority aims to take us to the next stage with a fully functional graphene innovation ecosystem, including a supply chain and making a major contribution to the regional economy, to the extent that it may be referred to as 'graphene city'. The following actions set out the two key steps to achieving this priority.



Action one: increase the pipeline of graphene start-up firms and support them to scale-up

Following a series of external studies on maximising the prize from graphene commercialisation we will develop an enhanced process to scale-up and accelerate the most promising opportunities emerging from graphene research, with the facilities and capabilities of the unique Graphene Engineering Innovation Centre (GEIC) at its heart.

We will aim to establish a dedicated accelerator, potentially with external investment. The portfolio will include companies established by The University of Manchester Innovation Factory, emerging from student venture competitions or 'spinning in'. To achieve this, support is needed with business planning, tax structures, ensuring a supply chain, finding finance, mentoring entrepreneurs, marketing, business development and assisting in negotiations.

Action two: maximise the return from business engagement in terms of commercialisation outcomes and revenue

Much of the potential for graphene comes from its application to existing products to make them lighter, stronger or to introduce new functional properties such as electrical/thermal conductivity or sensing capability. Other opportunities arise from new applications, such as the use of supercapacitors, membranes and aerogels. To reach their full potential these require partnerships with existing companies across a full range, from innovative small and medium-sized enterprises (SMEs) to multinational sector leaders.

Geographical scope ranges from global firms (with inward investment a key target) to a rapidly emerging regional cluster. The aim here will be to grow by an order of magnitude the value of research collaboration with businesses, including taking them to capacity and ensuring that business (and public sector agency) R&D spend is an important element of support for the rest of our graphene community. The outcome will be the creation of an integrated supply chain and a series of new and impactful graphene applications delivered locally across a broad spectrum of industries.



Priority four

Innovation ecosystems

Increasingly, effective innovation relies not only upon the direct commercialisation of research findings but also upon building a wider ecosystem that ensures that all the supporting elements are in place. These may include facilities, partnerships in research and with users, sources of finance and specialist expertise. Our methodology in building innovation activity in new sectors will recognise the ecosystem approach, as we have done in graphene, other advanced materials, health and industrial biotechnology. Placemaking will be a thread linking these and related activities. Areas where we will seek to scale up our activity include engagement with the city's Clean Growth agenda and building on our research and cultural institutions under the heading of Creative Manchester. The following actions set out the two key steps to achieving this priority.





Action one: engage in a range of partnerships under the heading of Clean Growth

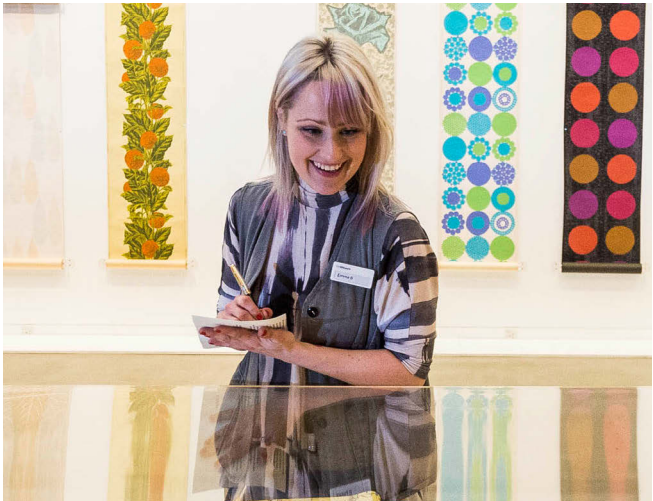
Clean Growth encompasses a wide range of our activities including sustainable consumption and other behavioural change, development of new energy sources and storage (including novel approaches to nuclear) and batteries, biomanufacturing and improved materials enabling light-weighting, plastics reduction and increased recyclability. All these activities form strong imperatives for business and hence a basis for research partnership and the opportunity to help businesses large and small to move to sustainable pathways. Working with the Sustainable Futures platform we will aim to double the activity under this heading over five years and look for new ways of connecting ideas and solutions across the portfolio.

Action two: Creative Manchester

Building on the work done under our research priority for Creative Manchester, we will use the platform it has established to bring educators, civic leaders and employers together to contribute to the cultural, creative and economic growth of the region. This will involve close engagement with creative, cultural and media organisations, and making full use of our own collections in the cultural institutions.

Post-pandemic, a key area of collaboration will be to deliver events that are internationally significant such as the Manchester International Festival, the pathbreaking arts and science Blue Dot Festival at Jodrell Bank Observatory, and the successful bid for Manchester to become a UNESCO City of Literature. The digital dimension will be of key importance. Success will be measured in a variety of ways including increased employment in the creative

sector, of creative graduates in other sectors and the engagement of citizens with innovative cultural activities.



Priority five

Enterprise through knowledge and commercialisation

Enterprise and entrepreneurship are essential for generating the 'creative destruction' that renews our economic and social base. Enabling our people to create and grow successful firms or to see their ideas adopted and diffused is a key part of our innovation strategy. The key strands here are transforming the funding landscape for start-ups in the north of England, our intellectual property commercialisation process and our support for student entrepreneurship. The following actions set out the two key steps to achieving this priority.



Action one: Northern Gritstone and scaling-up our intellectual property commercialisation

Following the successful re-launch of our intellectual property commercialisation subsidiary, now branded as The University of Manchester Innovation Factory, we have already achieved a step-change in spin-out numbers and licensing activity. Further growth will depend upon engaging more academic colleagues from all Faculties internally and with businesses (UK and international), investors and funders externally. We will also address the north of England’s relative lack of venture funding through the launch of the Northern Gritstone investment company, working with the Universities of Leeds and Sheffield, and building towards our £500 million funding target. We will deliver a further step-change in the number of viable spin-outs emerging and Intellectual Property (IP) income, and target the creation of three ‘unicorns’ within ten years.



Action two: increase the reach of student entrepreneurship

The Masood Entrepreneurship Centre will scale up its support activity for commercial and social enterprise start-ups for students, graduates and staff, looking for 20%+ per annum growth and evidence of retention of entrepreneurial graduates in the region. Linking to the teaching and learning

priorities in *Our future*, including giving all students the opportunity of a work placement, the target will be to ensure that all students are trained in entrepreneurial activities including online provision. Linkages with accelerators, for example at Alderley Park and ID Manchester, will strengthen the pipeline. Achievement will be demonstrated by our internal competition winners going on to win national or international awards.

Innovation: making it happen

Meeting our priorities will require our innovation support infrastructure to be highly effective. Key points for implementation are:

1. Effective partnership structures

We will seek to match the needs of different types of collaborators, including:

- high-level strategic partnerships with large industrial collaborators, supported by a process for identifying and developing the partnership;
- targeted initiatives for SMEs, including working with regional and national agencies to develop mechanisms such as KTPs, and 'club projects' which allow targeting of firms with similar needs, particularly in priority sectors for the region.

2. World-leading industrial partnerships

Internationalisation will be pursued in tandem with the global influence theme in our strategy, to ensure that we maintain access to world-leading industrial partners. Where relevant these relationships may be developed with intermediary agencies such as the Foreign and Commonwealth Office Science and Innovation Network, or with our University strategic partners in relevant regions of the world. These developments may also extend to advisory work on behalf of foreign government agencies.

3. Compliance and review

Ensuring that partnerships meet the University's reputational and compliance criteria, supported by review from the Research Relationships Oversight Group.

4. Innovation engagement and impact Building our innovation ecosystem and internal culture to increase the numbers of those engaged with it and enhance translation of our research to generate tangible societal, environmental impact through creation of new businesses.

5. Civic engagement initiatives

Ensuring that we take a leading role in Innovation Greater Manchester and, through the Civic University Agreement, working with the other GM universities, particularly in the areas of jobs and growth, the digital economy, net zero, health and the creative and cultural economy.

6. Enhanced consultancy offering

A more strategic approach to consultancy that will extend the range of services we offer, create new openings for research and teaching relationships and ensure that contracts are properly negotiated, supported and funded.

7. Executive education and development

Further developing our synergies with partners and clients where there are opportunities for Executive Education and CPD, and for internships and graduate careers in addition to research relations. Opportunities to engage via alumni relationships will also be pursued.

8. Thought leadership programmes

Pursuing an active programme of thought leadership, working with Policy@Manchester, the Manchester Institute of Innovation Research, the Productivity Institute and others, to influence innovation policies in a positive direction and maintain agility in developing new themes and challenges.

9. Communications and marketing strategy

A communications and marketing strategy that ensures we benefit from our reputation in this area and identifies and tracks our top global stakeholders.

10. Business engagement offering

A business engagement function that is fully networked across all Schools and Faculties and ensures delivery of this strategy while meeting financial and regulatory criteria.

Key measures of success

We will assess our progress across all actions using the following objective measures:

Board scorecard metrics

Recognition as Europe's most innovative university as measured by the indicators used by *Times Higher Education Impact Ranking* for Sustainable Development Goal 9: Industry, Innovation and Infrastructure.

Gaining a top position as measured by averaging perspectives in the Knowledge Exchange Framework.

A top three position in the UK in the value of research income from industry as measured by HESA data.



Additional Innovation metrics

An emerging cluster of innovative firms with meaningful relationships with the University will be developed on the ID Manchester site, in both 'meanwhile' space in existing University-owned buildings and in new purpose-built premises (with an ambition that the first new build will be complete in 2026).

Establish a pipeline of at least 20 funded, graphene start-up companies with IP secured from The University of Manchester Innovation Factory.

Double the number of graduates finding employment in the creative sector.

An increase in the productivity of the health and social care sector in Manchester and at least ten new businesses drawing upon the work of the Christabel Pankhurst Institute for Health Technology, Research and Innovation.

GEIC operating at capacity on a sustainable basis with an extended range of business partners, some of whom locate facilities in the city region.

Ensure that enterprise training is available for all students who want it and increase the number of viable student start-ups at a rate of 20% per annum.

Double in scale the volume of our applied research directed at clean growth and significant impacts on the use of plastics and other materials.

Launch at least 20 viable, IP-based spin-outs a year by 2025 and generate over £10m per annum licence income.

Complete the fundraising for Northern Gritstone with a minimum of £150 million at the first close in 2022 (and ultimately £500 million) and see at least three investments of c.£1 million in Manchester spin-outs or an equivalent value of smaller investments in 2022/23.

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