FSE Research Newsletter

News from the Faculty of Science and Engineering

December 2025

End of year reflections from the Research Development and Innovation Team

2025 has been a dynamic and productive year for the RDI team. We have driven, supported, and contributed to major initiatives while laying strong foundations to advance the Faculty's priorities – boosting research income, collaborations, and impact.

Business Engagement

This year, we engaged in over 300 academic–industry conversations, facilitating collaborations worth more than £8 million, with approximately £5 million already contracted or agreed under terms and conditions. Our team delivered or facilitated five successful Industry Showcases covering areas such as 3D Printing, Next Generation Electronics, Chemical Engineering, Chemistry, and Civil and Mechanical Engineering, alongside two Innovation Labs focused on Hydrogen and Simulation. We also partnered in two joint UoMIF events.

In addition, we supported IAAs, KTPs, consultancies, and strategic partnerships in collaboration with the pan-University Business Engagement and Knowledge Exchange team. Our efforts contributed to FSE's industry income for 2024/25 which exceeded £21 million.

Research Development and Strategy

To strengthen our strategic funding capabilities, we expanded the team with three Research Development Officers and two Managers. Their primary role is to mobilise research communities towards imminent and emerging funding opportunities, and to facilitate the development of external funding bids. This increased capacity enabled us to support 65 bids – 45 grants and tenders and 20 fellowships – worth over £110 million, more than doubling last year's total. Among these were nine bids exceeding £5 million, 19 over £2 million, and 42 over £1 million.

We also provided dedicated support for key initiatives, including plans for a £11 million Actinides Centre of Excellence, promoting Horizon Europe bids and creating a Horizon implementation plan with guidance from the Faculty Research Strategy Group, and

developing the EDIA Toolkit for Research Proposals. Strategic support continued for major centres such as CQSE, AMPI, AI-Fun, and MERI.

Internationalisation

Our internationalisation efforts have strengthened global partnerships across six priority regions: the Americas, Europe, Middle East & Africa, China, India, and ASEAN, Japan & Korea. We hosted visits from leading institutions, including Universiti Teknologi Petronas, Singapore Ministry of Sustainability and the Singapore National Environment Agency, Huazhong University of Science and Technology, University of Science and Technology of China, Secretary for the Indian Government's Department of Science and Technology, The University of Connecticut, FCDO and DSIT Science and Technology Network, The Chinese University of Hong Kong, British University in Dubai, among others.

We helped secure Dual Award PhD agreements with Tsinghua and Peking Universities and signed MoUs with the Korean Advanced Institute of Science and Technology, with additional agreements with Hong Kong University of Science and Technology and China University of Geosciences Beijing in progress. Highlights include consolidating partnerships in Japan through a symposium and reciprocal visits with the University of Tokyo and advancing collaborations with Osaka University through a joint seedcorn fund and mayoral cooperation.

Research Impact

Significant progress has been made in preparing for REF2029. In 2025, the RRE reviewed 672 outputs, each receiving two reviews, with more than two-thirds graded 3* and over 20% graded 4*. We also completed an impact audit stocktake, identifying 60 prospective cases - 50% above the REF target.

To support these efforts, we secured a £150,000 annual Impact Support Fund for the next three years. Additional contributions included supporting over 20 grant proposals, most of which were fellowships, with impact plans, delivering Impact Bites Lunch & Learn sessions, and co-developing the EDIA Toolkit.

Administrative Support

Behind the scenes, our administrative team enabled the delivery of these activities while maintaining key communications via the fortnightly Funding Bulletin and monthly Research Newsletter. We also coordinated the Faculty Research Strategy Group and the Research Leadership Team, ensuring alignment and progress across all strategic priorities.

Our plans for 2026

Looking ahead, we have ambitious plans for 2026. We will offer non-technical proposal reviews and grant-writing support for bids over £1 million and strategic funding schemes. Our team will map research expertise aligned with UK Industrial Strategy interventions and mobilise relevant communities towards emerging opportunities. We aim to develop the

Faculty's Fellowship Support Programme and launch initiatives to promote Innovate UK R&D and ARIA funding opportunities, alongside introducing an RRI Toolkit for Research Proposals.

Key priorities include organising at least five Industry Showcase events – confirmed so far are Hydrogen, Space, Quantum, National Graphene Institute, and Near Field Imaging & Spectroscopy – and launching a £50,000 joint seedcorn fund with Rapiscan. We will further develop strategic partnerships with UKAEA and GE Vernova, expand the Dual Award PhD programme with the University of Tokyo, and deliver workshops around the next round of the International Science Partnerships Fund.

Our plans also include facilitating the RRE review of over 1,950 unique outputs, overseeing projects under the £150,000 Impact Support Fund, and drafting outlines for 60 impact cases for REF2029. We will grow the activities of the Centre for Quantum Science and Engineering and deliver a 12-month action plan to expand the Centre for AI Fundamentals. Additionally, we will embed the Gates Foundation-funded Irrigation and Earth Observation in Sub-Saharan Africa project within MERI and deliver sustainability plans for the Strength in Places-funded Advanced Machinery and Productivity Institute.

Spotlight on Space-related activities

The University of Manchester (UoM) is home to a diverse landscape of research excellence and world-class facilities in Space and related applications across a wide range of sectors. Supported by the Faculty of Science and Engineering's Research Development and Innovation (RDI) team, a cross-disciplinary group of UoM academics set out to raise the profile of our world-class expertise, build new partnerships and generate further impact across the sector. There are plans to increase engagement with key industry players and policy makers, and position UoM to capitalise on emerging opportunities in the space sector.

The UK Space Conference held in Manchester this July provided a timely opportunity to launch these initiatives. UoM academics, students, and the RDI team participated in a range of conference events and organised wrap-around activities with our partners. This newsletter provides an overview of our recent space-related activities and progress. These activities and future follow-up initiatives are being funded by the University's STFC Impact Acceleration Account.

Manchester at the UK Space Conference 2025


North West Space
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“It was brilliant to see the University of Manchester so visible at the UK Space Conference. Across sessions and meetings, our colleagues showcased the University’s world-leading strengths in spacecraft systems engineering, sustainable mission design, Earth observation, and the governance and cybersecurity needed for the future space economy. A particular highlight was Orbit Fab honouring Beatrice Shilling – a Manchester pioneer – and seeing our Beatrice Shilling Scholars celebrated alongside leaders from across the sector. It was clear throughout the event that partners recognise and value the role The University of Manchester plays in driving a safe, sustainable and inclusive future in space. The momentum behind our ambitions continues to grow.” – Professor Peter Roberts

The University of Manchester showcased its world-leading space research at the UK Space Conference, held 16–17 July at Manchester Central. Academics and professional services staff from across the Faculty of Science and Engineering engaged with policymakers, industry, and international partners.

UoM’s delegation highlighted strengths in spacecraft systems engineering, sustainable mission design, Earth observation, space governance and cybersecurity. Colleagues, including Professors Peter Roberts and Kate Smith, Dr Ciara McGrath and Dr Nicholas Crisp, joined researchers from across engineering, environmental and social sciences to discuss collaboration opportunities.

A highlight was Orbit Fab’s announcement of its European Space Agency–backed in-orbit demo of a new refuelling port, named after pioneering Manchester alumna Beatrice Shilling OBE. To mark this connection, University representatives were joined at the launch by Beatrice Shilling Scholars Emma Wilkinson, Jessica Lee and Ciara McGrath, alongside Mayor of Greater Manchester Andy Burnham and UK Space Agency CEO Dr Paul Bate, celebrating Shilling’s legacy and Manchester’s commitment to supporting the next generation of diverse space researchers.

Emma Wilkinson shared her experiences of the event stating that *"attending the UK space conference has broadened my horizons to the vast opportunities within the space industry in the UK. OrbitFab's decision to dedicate the new refuelling system to Beatrice shilling will hopefully continue our mission for increased inclusion and diversity within the engineering field."*

Across two days, Manchester staff and students facilitated discussions, hosted meetings and connected visitors with our facilities and expertise, reinforcing the University's pivotal role in shaping a sustainable and inclusive space future.

Northwest Space R&D Roundtable

As part of the final day of the UK Space Conference 2025, the University of Manchester co-hosted the **Space R&D in the Northwest Roundtable** on 17 July at DiSH, Heron House, Manchester. The event brought together senior representatives from academia, government and industry to explore how regional strengths can drive the UK's future space strategy.

Chaired by Professor Richard Jones, UoM Vice-President for Regional Innovation, the session featured contributions from the UK Space Agency, the Science and Technology Facilities Council (STFC), and **Professor Michelle Dougherty**, Executive Chair of STFC and newly appointed Astronomer Royal. The roundtable convened stakeholders from

across the Northwest's research and innovation ecosystem, including colleagues from UoM, Manchester Metropolitan University, Liverpool Hope University, Liverpool John Moores University, the University of Salford, and UCLan, alongside GMCA, NW Aerospace Alliance and industry partners.

Discussions identified both opportunities and barriers for regional growth, including the need for clearer governance, improved skills pipelines, and stronger mechanisms for technology transfer. Participants highlighted the Northwest's unique capabilities in space robotics, cyber security, advanced materials, and links with nuclear and clean energy sectors, while calling for a coordinated roadmap and enhanced knowledge-exchange platforms.

Dr Shaden Jaradat, Faculty Research Development and Innovation Manager said "Strengthening the UK's space strategy requires coordinated regional action. This roundtable provided a crucial opportunity to align the Northwest's research and innovation assets with national priorities – particularly around policy development, skills pipelines, and technology transfer – to ensure long-term impact."

The University of Manchester is uniquely positioned to play a leading role in strengthening the region's space sector proposition. Our world-class expertise spans a broad spectrum of disciplines, including orbital aerodynamics, space robotics, cosmology, materials for space, planetary science and remote sensing, satellite communications and software, cyber security, and even outer space anthropology."

The session concluded with agreement to pursue a regional **Space Skills & Innovation Network** and to strengthen collaboration across institutions, industry and government, positioning the Northwest as a national leader in space R&D.

UK Space Agency CEO Visits FSE to Explore Space Sector Opportunities

Dr Paul Bate, Chief Executive of the UK Space Agency (UKSA), visited the University of Manchester's Faculty of Science and Engineering (FSE) to meet with Professor Duncan Ivison, President and Vice-Chancellor and senior leaders from our academic community and Jodrell Bank. The visit offered a valuable opportunity to discuss government priorities and explore growth opportunities within the UK space sector.

Dr Bate outlined the government's strategic focus on driving UK prosperity, strengthening national security, and advancing space discovery and the opportunities that this presented. He acknowledged current challenges in the sector and emphasised the importance of targeted investment and cross-sector collaboration.

The University reaffirmed its commitment to space-related research and innovation, highlighting the role of R&D in supporting sector growth and the potential for institutions like

Manchester to help address evolving skills needs. The regional significance of the North West Space Cluster was also recognised during the discussion.
Dr Bate reiterated the importance of the UK's ongoing partnership with the European Space Agency and expressed interest in further dialogue with the University to support its engagement with the space sector. Dr Bate then joined academic colleagues for a tour of the Space Systems Laboratory and the Henry Royce Institute facilities.

To mark the occasion, Dr Bate was presented with a gift from Manchester Museum from the President.

UK Space Agency Engagement Event at FSE

Over 100 staff and students attended a special engagement event hosted by the Faculty of Science and Engineering (FSE) on 15th July 2025, featuring Dr Paul Bate, Chief Executive Officer of the UK Space Agency (UKSA). The session was facilitated by Ian Muirhead, a postgraduate research student, and provided a unique opportunity to explore the UK's vision for the space industry and the career pathways emerging within the sector.

Dr Bate shared insights into the UKSA's role, current government priorities, and exciting developments across the space industry. Topics included new technological advancements, challenges around space sustainability, and the importance of collaboration across academia, industry, and government.

Reflecting on the event Ian Muirhead said *"the interview with Paul was a fantastic opportunity to gain a clear understanding of the UK space sector and the advice and guidance he gave will be invaluable in raising aspirations of our graduates and others who wish to enter into the field, or who want to collaborate with the many organisations involved in space activity in industry, government and academia. His unique career pathway through a range of sectors after graduation from Manchester show that there are opportunities at any careers stage to find a rewarding role in space, and the insight into the invisible ways space touches our daily lives will have certainly surprised many in the audience and possibly opened new horizons."*

The discussion also touched on Dr Bate's personal career journey – including his time at Manchester as a PhD student – offering valuable advice and inspiration to attendees on the opportunities available within the space sector. The event was designed as an open conversation, with time for audience questions and interaction.

First Lunch and Learn on Space Research

On 9 December, we welcomed attendees to the inaugural Space Research Lunch and Learn session, hosted by Dr David Jeevendrampillai, an Anthropologist of Outer Space. Dr Jeevendrampillai shared a fascinating overview of his research interests and key findings.

Our external speaker, Alan Cross, Northwest Space Cluster Development Manager, provided valuable insights into his work driving the development of a robust and sustainable space ecosystem across the Northwest. He highlighted opportunities for innovation and growth within the UK's rapidly evolving space sector.

Alongside these talks, networking over lunch created an excellent platform for researchers, staff, and PDRAs to strengthen interdisciplinary collaboration across the University.

This event marks the beginning of a series of Lunch and Learn sessions designed to connect colleagues and encourage knowledge exchange in emerging fields.

Next steps

Building on the momentum of these recent activities, we're planning a series of follow-up initiatives designed to enhance collaboration and identify new opportunities.

Planned actions include a high-profile industry showcase event, further sessions as part of our "Lunch & Learn" series, and the creation of an online gateway to UoM's space research.

These initiatives aim to strengthen our cross-disciplinary Space Research Community and position the University's space research community towards major funding opportunities and strategic partnerships.

If you are interested in space-related research, please contact fse.rdi@manchester.ac.uk to join the Space Research Teams site and stay updated on future events.

The FSE Research Newsletter is published by the Research Development and Innovation (RDI) Team. The RDI Team and Research Services also produce the fortnightly Funding Bulletin to share funding opportunities: view current funding opportunities here, and subscribe for notifications of updates here.

If you'd like anything to be publicised in either of these newsletters, email Research Development and Innovation