

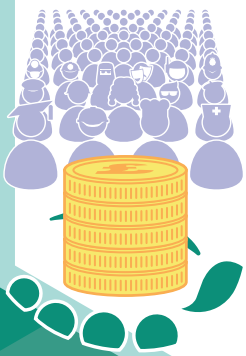
IMPACT REPORT

WIN IN NUMBERS



£2,166,675 in funding provided by WIN has leveraged **£38,056,811** in additional investment. This substantial return on investment has enabled the expansion and success of numerous projects and initiatives in Wales.

137



137 external partners were included in successful bids for small grants. These encompass a diverse range of sectors, highlighting the extensive network and multidisciplinary approach that underpins these successful funding applications.

31



Financial support was successfully secured from **31 funders**. This strengthens our network of collaborators and enhances our capacity to drive impactful research and innovation.



WIN funding has enabled the development of bids to external funders totalling **£116,774,382**. This financial support has empowered researchers and institutions to pursue ambitious projects, driving advancements in research and innovation in Wales.

13



Welsh institutions have successfully collaborated with partners from **13 different countries**, fostering international collaboration and expanding the global reach of our initiatives.

£5m



Over **£5 million** in direct investment from industry partners, driving innovation and economic growth in Wales by tackling key business challenges and fostering collaboration between academia and industry.

FOREWORD

I am proud to present this report, which highlights the significant impact the Wales Innovation Network (WIN) has had on the Welsh research and innovation landscape over the past three years. This document not only reflects our shared achievements but also celebrates the collective strength and ambition of Welsh universities in driving research and innovation excellence.

This research strength was apparent in the latest UK-wide assessment of the quality of research (REF 2021), where 89% of Welsh research was judged to be internationally excellent or world-leading for impact. Research from Welsh universities is making a real difference, improving processes and practices in 85% of cases, with over 90% creating a UK-wide impact and more than 60% reaching audiences around the world.

WIN was established based on Professor Graeme Reid's recommendation that collaboration, leveraging Wales' diverse strengths, could act as the catalyst for its success in research and innovation. By working across all Welsh universities, we have created a platform that fosters interdisciplinary partnerships, amplifies our collective voice, and increases the competitiveness of Welsh research and innovation on the global stage. From advancing research in Net Zero and digital transformation to advocating for the arts and humanities, WIN has demonstrated how collaboration can unlock innovation and deliver real benefits for the people and economy of Wales.

Our successes are underpinned by strong partnerships with policymakers, industry leaders, and funding bodies. By engaging with stakeholders at every level, WIN has ensured that Welsh universities are well-placed to influence and contribute to global priorities. Through high-profile events in London and Brussels, targeted seed funding, and establishing networks such as the All-Wales Policing Academic Collaboration, WIN has boosted the visibility of Welsh research while driving meaningful, lasting impact.

WIN's achievements over the past three years underscore its pivotal role in advancing Wales' research and innovation agenda. Moving forward, WIN will continue to strengthen networks, champion Wales' research strengths, and support Welsh universities to deliver transformative outcomes for the people of Wales and beyond.

Professor Roger Whitaker
Chair of Wales Innovation Network



INTRODUCTION

The Wales Innovation Network (WIN) is a collaboration between all Welsh universities, designed to elevate Wales as a leader in research and innovation. By fostering interdisciplinary partnerships and leveraging our collective strengths, WIN creates opportunities for Welsh universities to tackle pressing global challenges, drive economic development, and deliver lasting societal impact.

WIN has worked closely with its member universities and the Welsh Government to identify key areas of collective strength across Welsh institutions. These themes, highlighted in Welsh Government's innovation strategy, not only influence Welsh R&I policy but also guide WIN's strategic focus:

- Digital transformation
- Net Zero and decarbonisation
- Agri-tech and rural economy
- Creative industries and media
- Population health and biotech
- Materials and manufacturing (including semiconductors)

This report highlights WIN's key achievements and the role it has played in advancing Wales' research and innovation ecosystem over the past three years. Through impactful collaborations, targeted funding, and high-profile events, WIN has established itself as a cornerstone of Wales' research and innovation success.



GROWING WALES' R&I STRENGTHS

WIN is strengthening Wales' research and innovation landscape through a combination of grassroots initiatives and coordinated strategic efforts. We have demonstrated how targeted seed funding can support researchers in pursuing innovative ideas and capturing significant external income. Alongside this, strategic steering groups are helping to focus and amplify the strengths of Welsh universities. These efforts are fostering collaboration and enabling impactful research that addresses key challenges and opportunities for Wales.

WIN seed funding has been a valuable resource for supporting innovation and fostering early-stage research. By providing targeted financial support, we have helped researchers develop collaborations and build a foundation for larger-scale projects. WIN's Small Grant Fund exemplifies this approach, awarding £267,000 over two years to 39 projects across Welsh universities. These projects have not only advanced innovative research but also enabled researchers to apply for over £20 million in external funding bids, showcasing the impressive impact that seed funding can achieve. Through initiatives like this, WIN has highlighted the importance of early investment in unlocking potential and growing Welsh research and innovation.

WIN has strategically developed programmes and initiatives that amplify the unique strengths of Welsh universities, driving collaboration and impact. Below are examples of WIN's strategic efforts to build and sustain impactful research networks.

Wales Arts and Humanities Alliance

WIN has ensured that the arts and humanities are central to Wales' research narrative by launching a pan-Wales initiative to foster deeper partnerships and collaboration in these fields. Distinctive focus areas for the Alliance include the Wellbeing of Future Generations Act and the promotion and preservation of Welsh language and culture. By facilitating connections with the Arts and Humanities Research Council (AHRC) and other policy bodies, WIN has helped to establish Wales as a thought leader in leveraging arts and culture to address contemporary challenges.



£2,166,675 in funding provided by WIN has leveraged £38,056,811 in additional investment.

The Wales Arts and Humanities Alliance (WAHA) is committed to amplifying the voice of Welsh arts and humanities on both national and international stages. As part of its advocacy efforts, the Alliance is developing a bid for a focal award to drive forward its vision. This award will support researchers, further strengthen collaborations, and ensure that the Welsh arts and humanities sector continues to thrive as a global leader in cultural and academic innovation.

Net Zero and Decarbonisation

The network has engaged with funders and policymakers, including Biotechnology and Biological Sciences Research Council, Natural Environment Research Council, and the Welsh Government, to highlight Welsh universities' role at the forefront of decarbonisation research. Through these efforts, WIN has enabled projects focused on renewable energy, sustainable agriculture, and circular economies.

Health and Wellbeing

WIN's Health and Wellbeing network is supporting research collaborations between Welsh universities aimed at improving health outcomes for communities across Wales. By working with organisations such as Public Health Wales, Health and Care Research Wales, and Life Sciences Hub Wales, and drawing in speakers from funders such as Wellcome Trust, MRC, NIHR and ESRC, the network is focused on increasing grant capture and research impact.

Notable initiatives include:

- **Epidemic Preparedness Workshop:** This session brought together academics and local authorities to develop strategies for strengthening Wales' resilience to public health crises, resulting in strategic partnerships being formed and bids being submitted from Wales in response to an MRC call.
- **Webinars:** WIN facilitated knowledge exchange between universities and policymakers to provide frameworks for addressing health inequalities through the Strengthening Local Authority Partnerships webinars. We also facilitated webinars to spotlight the SAIL databank, including an overview of the data sources available and how researchers and projects can gain access to this rich data resource.

Materials and Manufacturing

The Materials and Manufacturing steering group reflects WIN's commitment to driving economic development through cutting-edge research. The group's focus includes sustainable materials and digital manufacturing processes.

All-Wales Policing Academic Collaboration

Responding to a drive from policing bodies in Wales, WIN has facilitated an all-Wales network between Welsh universities and police forces to support evidence-led policing. Real-world policing challenges have been addressed through seed-funding collaborative projects and increasing dialogue across Wales.



COMMUNICATING WALES' R&I STRENGTHS

One of WIN's key objectives is to enhance the visibility of Welsh universities' research and innovation on a national and international stage. By organising high-profile events, supporting researchers in policy engagement, and fostering relationships with key stakeholders, WIN has sought to position Wales as a global leader in addressing societal challenges through research and innovation.

WIN has been instrumental in organising events that showcase the groundbreaking work being undertaken by Welsh universities, creating platforms for dialogue, collaboration, and investment. WIN organised two flagship events in 2023/24:

- **London reception:** Collaborating with the Secretary of State for Wales, this event brought together leading academics, policymakers, and industry representatives to showcase cutting-edge research in areas such as population health, digital transformation, and renewable energy. Welsh researchers engaged directly with influential stakeholders, such as the Secretary of State for Science, Innovation and Technology, the Minister for Science, Research and Innovation, and the chief executive of UKRI fostering partnerships and enhancing Wales' research profile.
- **Brussels reception:** Partnering with Welsh Higher Education Brussels (WHEB), this event provided an opportunity for Welsh academics to connect with European Union stakeholders, aligning Welsh research priorities with EU funding and policy opportunities. Speakers included Matthias De Moor, General Representative of Flanders to the EU, and Rt Hon Mark Drakeford, First Minister of Wales.

Both of these events received strong engagement on social media and were featured in Welsh and sector press, including Business News Wales and Research Professional.

WIN facilitated Welsh researchers' participation in Sense About Science's Evidence Week at Westminster. Speakers showcased University of South Wales' hydrogen research, and research on rural innovation and out-migration from Aberystwyth University. These engagements strengthened Wales' reputation as a source of innovative, evidence-based solutions to complex challenges.

In addition to connecting Welsh researchers and innovators with key stakeholders outside of Wales,

WIN has facilitated bringing stakeholders to Wales, ensuring strong representation for Welsh universities. For example, WIN facilitated a roundtable as part of UKRI's visit to Bangor in 2022. The roundtable showcased Wales' research strengths and the challenges and opportunities for Welsh innovators. WIN worked with Swansea University to facilitate a meeting of MRC Council along with a showcase of Wales' strengths in medical science. WIN also played a key role in bringing the Technicians Commitment signatories event to Wales for the first time, celebrating the vital role of technicians in research and innovation.

These engagements have not only deepened relationships with national funding bodies but also highlighted Wales' strategic priorities, fostering pathways for future collaborations and investment.



CASE STUDIES

Advanced Design Engineering

Lead: University of Wales Trinity Saint David

Partners: Swansea University, Cardiff University, Bangor University, TWI Ltd

The Advanced Design Engineering (ADE) team at the University of Wales Trinity Saint David faced a significant challenge following the loss of European funding. To address this, the team partnered with the National Research Network (NRN) in Advanced Engineering and Materials (AEM), a collaboration between Swansea, Cardiff, and Bangor Universities, along with the research organisation TWI Ltd.

With support from WIN, the ADE group was able to regroup and develop a comprehensive business plan aimed at supporting small and medium-sized enterprises (SMEs) and industry. This funding also facilitated crucial meetings between lead researchers across partner universities to explore future collaborative opportunities.

WIN's support proved instrumental in revitalising the ADE group's efforts, enabling the submission of multiple funding proposals. These efforts culminated in an impressive £2.028 million in secured funding, laying the groundwork for future advancements in advanced engineering and materials research. The project not only strengthened collaborative ties but also provided a sustainable framework to support SMEs and foster innovation across the sector.

Cymru Wledig LPIP Rural Wales

Lead: Aberystwyth University

Partners: Bangor University, Cardiff University, University of Gloucestershire, Centre for Alternative Technology, Together for Change, Antur Cymru, Rural Health and Care Wales, Represent Us Rural, Sgema. Supporting partners with MoUs include Ambition North Wales, Growing Mid Wales, NRW, One Voice Wales, PAVO and WLGA

Seed funding from WIN in 2022 was instrumental in advancing a Rural Wales Local Policy Innovation Partnership (LPIP) by enabling Aberystwyth University and its partners to develop and submit competitive funding bids, leading to the award of over £5 million. The LPIP aims to enhance the use of policy and innovation to support effective policy-making and delivery towards a wellbeing economy in rural Wales.

Following a development phase, full funding was awarded in January 2024 for three years. Led by Aberystwyth University, Cymru Wledig LPIP Rural Wales includes interdisciplinary input from multiple higher education institutions and key stakeholders such as Centre for Alternative Technology, Rural Health and Care Wales, and the Welsh Local Government Association.

The LPIP's activities include innovation labs, community-led action research, new research through surveys and short-term targeted studies, data synthesis to create an Integrated Online Evidence Hub, and public engagement, knowledge exchange, and capacity building. The work programme is responsive to the evidence needs of stakeholders, facilitated by four thematic groups involving additional researchers from Welsh universities.

The LPIP's development exemplifies how strategic seed funding can unlock substantial resources, bolster research capacity, and drive transformative economic and social innovation across Wales.



CASE STUDIES

Circular Economy

Lead: Cardiff Metropolitan University

Partners (across 2 WIN supported projects): Aberystwyth University, Swansea University, Bangor University, Celsa Steel UK, the South Wales Industrial Cluster (SWIC) and Cardiff Commitment (Council Curriculum Development Project).

Recognising the potential for global impact in circular economy research and the excellence within Wales, WIN has supported two key projects led by Cardiff Metropolitan University to advance circular economy practices.

The first project expanded the Circular Economy Innovation Communities (CEIC) to other regions in Wales, focusing on stakeholder mapping, engagement, and analysis to build a robust foundation for regional collaboration. The second project extended this work by equipping research leads to map Circular Economy innovation case studies provision and co-design interventions specifically tailored for rural SMEs. This follow-on project facilitated workshops with SMEs to identify gaps in provision and foster partnerships to address these areas.

With WIN's support, the projects delivered significant outcomes. They enabled the CEIC programme to broaden its reach and impact while providing rural SMEs with actionable insights into circular economy practices. The work also positioned the partnership to collaborate effectively with the Welsh Government's SMART FIS programme on a phased investment strategy for a pan-Wales circular economy initiative.

As a direct result of this support, the team secured £119,000 in funding and has submitted additional bids valued at £360,000. These efforts not only demonstrate the power of targeted investment in advancing sustainability but also highlight the potential for circular economy practices to drive economic growth and environmental stewardship across Wales.

One Health Wales

Lead: Bangor University

Partners: Aberystwyth University, Cardiff University, Swansea University, Dŵr Cymru, Public Health Wales, Welsh Government, Betsi Cadwaladr University Health Board

The One Health Wales initiative provides an integrated, unifying approach that aims to balance and optimise the health of people, animals and ecosystems. This multidisciplinary approach integrates expertise from diverse sectors and disciplines to address complex challenges, foster wellbeing, and mitigate threats to public health and ecosystems.

WIN provided crucial support for a scoping study to develop the framework for the One Health Wales Institute. This foundational work brought together stakeholders from multiple sectors and disciplines to define priorities and create a roadmap for collaborative action.

WIN's support enabled the partnership to successfully secure significant external funding, including a £5 million commercial contract with an industrial partner. In total, the initiative has secured £5.12 million in funding, positioning the One Health Wales Institute as a leader in advancing integrated health solutions.

By fostering collaboration across sectors and communities, this initiative has laid the groundwork for innovative solutions to pressing public health and ecological challenges while creating opportunities for long-term partnerships and sustainable impact across Wales and beyond.

CASE STUDIES

Welsh Digital Twin Network

Lead: Swansea University

Partners: Bangor University, University of Wales Trinity Saint David, University of South Wales, Cardiff Metropolitan University, Learned Society of Wales, UK Atomic Energy Authority (UKAEA), Siemens, Cultivate Innovation Ltd, Maiple Ltd., F&J Agile Solutions Ltd

The Welsh Digital Twin Network (WDTN) was established to unite academics and industry stakeholders across Wales in advancing digital twin technology. Digital twins, virtual replicas of physical systems, have transformative potential across various sectors, enabling enhanced decision-making, predictive analytics, and innovation.

Seed funding from WIN was instrumental in forming the WDTN, facilitating the mapping of expertise across priority areas in Wales. This comprehensive understanding of regional capabilities enabled stronger collaboration among partners and positioned the network to pursue significant research opportunities.

The WIN-funded groundwork allowed WDTN to submit a £1 million funding bid to the Engineering and Physical Sciences Research Council. Additionally, the network is developing further large-scale bids to expand its scope and impact.

Through this strategic collaboration, WDTN has accelerated the advancement of digital twin technology in Wales, fostering innovation and enhancing the region's competitive edge in this cutting-edge field. The project exemplifies how targeted seed funding can catalyze impactful research and drive substantial economic and technological progress.

Addressing police perpetrated violence against women, domestic abuse and sexual violence: A process evaluation

Lead: Open University and University of South Wales

Partners: Dyfed Powys Police, Gwent Police, South Wales Police, North Wales Police, Vale Domestic Abuse Service, Cyfannol Women's Aid

The All-Wales Policing Academic Collaboration (AWPAC) funded a two-year joint project between The Open University (OU) and the University of South Wales (USW), which examined how Welsh police forces respond to domestic abuse within policing.

In its first year, the project (led by OU with USW as partners) explored existing policies, processes, and interventions across Welsh police forces, identifying challenges and areas for improvement. Building on these findings, the second phase (led by USW with the OU, Gwent Police, South Wales Police, Vale Domestic Abuse Service, and Cyfannol Women's Aid) focused on the process evaluation of the Tabw service for victims/survivors of police-perpetrated domestic abuse and sexual violence (PP-VAWDASV).

The research team, with key stakeholders of the provision, co-produced a Theory of Change model and a monitoring and evaluation framework, providing a structured approach to assess the effectiveness of these interventions. Early findings indicate successful partnership working, enhanced victim support, and potential for expansion across Wales and beyond. Given the strategic importance of tackling PP-VAWDASV, this work is of key interest to the National Police Chiefs' Council and senior policing leadership across England and Wales.

This study contributes to the limited evidence base on PP-VAWDASV interventions, offering insights that can inform future large-scale research funding and guide the implementation of similar advocacy models in other police forces across the UK. The findings also hold relevance for other sectors where victims and perpetrators may hold positions of trust and power. By refining intervention frameworks and ensuring consistency in data capture and reporting, this research helps lay the groundwork for sustainable, long-term change in supporting victims and addressing domestic abuse within policing.



CASE STUDIES

Precision microgel materials for engineering biology

Lead: Cardiff University

Partners: Swansea University, Trento University

The 'Precision Microgel Materials for Engineering Biology' project, supported by a WIN Small Grant, aimed to advance research in synthetic biology, a rapidly growing field identified by the UK Government as a key area for economic growth. The project built on previous funding from Horizon 2020 and the Welsh Government, where the Cardiff team successfully developed a novel platform to program synthetic cells using microfluidics, artificial membrane networks, and DNA technology.

With support from WIN, the team - led by experts at Cardiff University and Swansea University - collaborated to develop a new microfluidic approach to characterising artificial cell material properties. This research is critical for advancing drug delivery systems, particularly in designing artificial cells that can release drugs in a controlled manner over extended periods.

The initial WIN Small Grant funding helped the team secure €3,211,790 from Horizon Europe in partnership with European collaborators and £1,580,803 from the Biotechnology and Biological Sciences Research Council for further research at Cardiff University. This investment will drive forward the potential pharmaceutical applications of synthetic biology, supporting innovations that could transform the field.

Welsh Agriculture and Food Circular Economy

Lead: Wrexham University

Partners: Bangor University, Cardiff Metropolitan University, University of York, Herriot-Watt University; IntelliDigest Ltd, Scotland; JustOne Organics USA; Agriculture and Food Systems Specialist.

The 'Welsh Agriculture and Food Circular Economy' project, supported by a WIN Small Grant, seeks to address critical challenges in Wales' food system, particularly around food security, sustainability, and accessibility.

The project brings together a multidisciplinary consortium of three Welsh universities, two universities in England, and industry partners to develop a more resilient and sustainable food system. The team is working to re-localise food systems, regenerate soil health, strengthen food security, and create economic incentives that benefit both producers and consumers. By reducing food waste, improving supply chains, and integrating sustainable dietary alternatives, the project supports the Wellbeing of Future Generations Act and contributes to a Welsh National Universal Food Framework.

The consortium's expertise spans food science, nutrition, product design, sustainable financing, agri-tech, marketing, and net zero strategy, ensuring a holistic approach to transforming the Welsh food economy. By designing training programs, digital infrastructure, and financial models, this initiative aims to create lasting change, supporting healthier communities, a stronger economy, and a more sustainable environment for future generations.

IntelliCAV Wales Consortium

Lead: University of South Wales

Partners: Cardiff Metropolitan University, Cardiff University, University of Edinburgh, University of the West of England, Mohammed VI Polytechnic Morocco.

The IntelliCAV Wales Consortium, supported by WIN Small Grant funding, brought together a multidisciplinary network of experts in cybersecurity, intelligent systems, connected mobility, and reputation management.

The project focused on enhancing security through function segregation in Connected and Autonomous Vehicles (CAVs) as a proactive measure for eliminating the necessity for complex techniques. The consortium aims to leverage machine intelligence, enhance context awareness, facilitate adaptation, secure operations, and promote resilience in smart cities.

With expertise spanning cybersecurity, cloud computing, blockchain, and intelligent systems, the consortium is well-positioned for further groundbreaking research in secure and resilient CAV applications.



 Wales Innovation Network

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