

RESEARCH, DEVELOPMENT AND INNOVATION (RDI)

KNOWLEDGE TRANSFER NEWSLETTER 2024



THE IMPACT OF RDI

TUS delivers impactful applied research, development and innovation by growing the research community, engaging in next-generation thinking and addressing societal, economic, cultural and environmental challenges.

As an innovation-hub, we nurture ideas and enable the bright minds of our research ecosystem to flourish. Our partnerships enable us to share our knowledge with the world, widen research impact and embed a research culture. Our strategy focuses on extending our reach and driving more impactful research, development and innovation regionally, nationally and globally.

Welcome to the latest edition of the TUS RDI newsletter. The following pages showcase some of our innovative projects, events and initiatives across the entire continuum of Research, Development and Innovation and I hope that you enjoy them. I would like to thank all staff and students that have submitted items for this newsletter and if your item did not appear, it was purely down to space constraints so please do submit for the next newsletter. I would like to sincerely thank the TUS RDI team for their outstanding work and contributions. This year has been hugely successful with a 100% increase of research expenditure on the previous year, a significant milestone since we commenced the exciting journey of our Technological University.



TUS RDI LEADERSHIP TEAM

OFFICE OF THE VICE PRESIDENT, RDI



Dr Liam Brown, VP Research, Development & Innovation

RESEARCH, RUN-EU & RUN-EU+



Dr Patrick Murray
Head of Research and
Technology Transfer,
RUN-EU Coordinator



Lorna Walsh
Director of Research
Support Services



Dr Siobhan Moane
RUN-EU + Manager



Tania Marsh
Research Integration
Manager



Dr Michelle Cooney
Senior Strategic Research
Support Manager

INNOVATION & ENTERPRISE



Gillian Barry
Head of Innovation and
Enterprise



Michael Lonergan
Director of Innovation
and Enterprise

GRADUATE STUDIES



Dr Lisa Moran
Dean of Graduate Studies

RESEARCH INSTITUTES



Dr Declan Devine
PRISM



Dr Margaret Brennan
FOURMET
LIFE



Dr Brian Lee
SRI
Software



Dr John Cosgrove
IDEAM
Smart Manufacturing



Dr Frank Houghton
Social Sciences
ConneXions



Eleanor Moloney
LSAD



TBC
SDRI
Sustainable Development

TECHNOLOGY GATEWAYS & CLUSTERS



Jim O'Hagan
Smarter Factory



Dr Noel Gately
APT



Anthony Cunningham
Comand



Dr Emma Murphy
Shannon ABC



Dr Lena Madden
Shannon ABC



Dr Caitriona Mordan
atim



David Downey
IDEAM

GRADUATE STUDIES



DR LISA MORAN APPOINTED AS NEW DEAN OF GRADUATE STUDIES IN TUS

The new Dean of Graduate Studies, Head of the Graduate School, Dr Lisa Moran commenced her new role in August 2023. A sociologist, Lisa's ambition is to build the graduate school to become internationally recognised as a centre of excellence in intellectual inquiry and student experience. Lisa has ambitious plans for expanding the school, in terms of student numbers and a dedicated research agenda on graduate education. She is interested in interdisciplinary and transdisciplinary scholarship and best practice in supervision.

Lisa began teaching at the University of Galway (UG) in 2004 and she held several academic and research posts at the St Angela's College Sligo, ATU, Teagasc, SETU, and Edge Hill University, UK. She completed her PhD in the School of Political Science and Sociology, UG and prior to that, an MA in European Integration at the University of Limerick and a BA in English and Political and Sociological Studies at UG. She is a Senior Fellow of the Higher Education Academy UK and holds a Postgraduate Diploma, an MA in Academic Practice and a Diploma in Irish from UG. A social research methodologist, she is the co-lead on WG5 (Research Methods) of Trafady, a COST action on transnational families. She is the current President of the Sociological Association of Ireland (SAI) and a board member of RN 03 Biographical Perspectives on European Societies of the European Sociological Association (ESA).

Lisa won a Fulbright Specialist Programme award on behalf of the Graduate School in 2024 to build collaborative links with US universities to co-design PhD and Masters by Research programmes. She also hosted the ESA RN 03 midterm conference in February 2024 in Athlone, and led the development and rollout of the International Perspectives on Graduate Education: Advancing the State-of-the-Art series, run in conjunction with CPID. She led on a highly successful interdisciplinary event Achieving Research Impact for Better Outcomes: Science, Society and Transformations to Educational Landscapes. She has provided numerous training sessions to students and staff on graduate education since her appointment. She co-designed a mentoring programme for new supervisors with Dr Anna Bussu, Edge Hill University, and Dr Siobhan Moane and was successful in bringing the ODYSSEY programme to the TUS to enhance employability outcomes for students. On June 7th 2024, Lisa will bring world-leading sociologists to an online colloquium led by TUS on the theme of 'Reimagining Gender and Care 'Otherwise' in Higher Education'.

Raising the international profile of the TUS Graduate School is important and the students remain at the core of the Graduate School. Lisa says 'TUS is well renowned for its commitment to students and its strong and sustained student focus was one of the things that most attracted me to this role'.

A NEW ODYSSEY FOR THE TUS GRADUATE SCHOOL FUNDED BY THE HEA

The TUS Graduate School has received a major boost in becoming one of the first Technological Universities (TUs) in Ireland to run the ODYSSEY programme for final and penultimate year PhD students. This innovative programme which was originated by Mary Kate O'Regan, HR Business Manager at University College Cork focuses on graduate students' skills awareness and attainment and is strongly oriented towards employability and workforce development. Since its initial development as a pilot programme in 2018, 260 researchers and PhD students from UCC have participated and ODYSSEY has shown very positive results in supporting participants' career goals.

In UCC's Pathways Beyond Academia Self-Assessment, the UCC ODYSSEY team found that there were strong disconnects between the career expectations of PhD candidates in comparison to the proportion of academic jobs that were available and that while some students felt they needed to upskill or retrain to attain transferable skills, upskilling was less important than reorienting students' awareness on the skill sets they already possessed. Significantly, the scheme focuses on an array of individual and external factors that both help and hinder student success upon graduating including organisational culture, fear and personal change, research skills that are valued by external, non-academic organisations, work opportunities beyond academia, CVs and how to stand out in different working environments.

According to Dr Lisa Moran, Dean of Graduate Studies 'There is immense value to this scheme for our PhD students. The word 'odyssey' by its very nature is evocative of journeys and the life pathways that open up from a PhD are immense. This scheme will enhance the competitiveness of our students in the jobs market both nationally and internationally. The strong emphasis on skills awareness and reflective practice are noteworthy dimensions of the scheme. We are confident this will pay dividends in terms of graduate employability and strengthening the delivery of a world-leading graduate education in TUS.'



Dr Lisa Moran, Prof. Vincent Cunnane and Lorna Walsh

NEW RESEARCH COLLABORATION WITH TCD AND IFCA AT THE TUS GRADUATE SCHOOL

The TUS Graduate School has developed new significant collaborations recently, one with Dr Leigh-Ann Sweeney, School of Social Work and Social Policy, Trinity College Dublin, and the Irish Foster Care Association (IFCA). Leigh-Ann and Lisa recently secured a €50,000 grant to complete the research as the principal investigators. A postdoctoral researcher shall be hired in the coming months to join the collaborative research team to work on the evaluation.

The new Dean of Graduate Studies, Dr Lisa Moran, has written extensively on the lives of young people in care systems in Ireland and the UK and has co-led several projects on care experienced children's lives. This included a participatory study on educational attainments of care leavers and a paper on the complexity of touch and silence in residential care with Dr Lorraine Green, Edge Hill University, UK.

This collaboration with the IFCA further extends their interest into the sensory-motor development of children in foster care, by evaluating the BUSS model, which was the brainchild of Sarah Lloyd, whilst working in Child and Adolescent Mental Health Services (CAMHS) UK. BUSS stands for Building Underdeveloped Sensorimotor Systems in Children who have developed Developmental Trauma. The model is now being piloted in Ireland for the first time to address the needs of children in care and foster carers working in conjunction with Tusla, the Child and Family Agency.

Lisa says: 'This represents a fantastic opportunity for me and Leigh Ann to work together on such an interesting project with the IFCA and BUSS UK, and to extend the institutional wisdom with regards to the factors that affect the long-term educational outcomes of young people across the life course. Consistently, across countries, young people who are in care or who were in care typically have lower educational attainments in terms of grades, attrition and retention in comparison to their peers who were not in care. The factors that affect people going into third level and completing their Masters and PhD education are often found early on in life. The results of this evaluation are also significant as teaching tools for our TUS and TCD students too and our student population nationally.'

In addition, Leigh-Ann states 'We are responding to Tusla's Strategic Plan for Foster Care services for Children and Young People 2022-2025 for further research to address recruitment and retention of foster carers in Ireland, and to build on the great work carried out by the Irish Foster Care Association.'

TUS CONFERS LARGEST EVER COHORT OF PHD AND RESEARCH MASTER'S STUDENTS

The Technological University of the Shannon (TUS) conferred its largest ever cohort of PhD and research master's students this month across its campuses in the Midlands and Midwest.

In total, the university conferred 26 PhDs and 19 master's by research students, including its first award of a PhD in Civil Engineering to Dr Ana Caroline da Costa Santos and the conferral of Dr Patrick Ruane, the first PhD candidate to transfer from TUS's research master's in manufacturing digitalisation, supported by Johnson and Johnson Vision and IBEC's Irish Medical Device Association.

The graduating cohort were supported by supervisors with expertise and research excellence in a variety of areas including advanced manufacturing, engineering, life sciences, biopharmaceuticals, information and computer technology, creative industries and sustainable development. Recently graduated TUS PhD candidates based on the Moylish campus are pictured with their supervisors, Dr Liam Brown, VP for RDI, and TUS staff. VP for Research, Development and Innovation at TUS Dr Liam Brown congratulated the graduates on their achievements and said the conferral of awards showcased the diversity and depth of research in TUS. "From animation and addiction to extended reality and the societal benefits of biodegradable polymer and breakthrough biotechnology developments, the applied nature of our research was evident through the many graduates that were supported by industry partners and community stakeholders," he said.

Founded in 2021, TUS is a young technological university, which provides unwavering support, accessibility and opportunities for all, with PhD and research master's graduates growing 73 percent and 111 percent, respectively, in comparison with 2022 figures. In addition to the President Doctoral Scholarship, students were supported by a wide range of national agencies and industries including Science Foundation Ireland, Irish Research Council, the Environmental Protection Agency, DAFM Enterprise Ireland, IBEC, Irish Medtech Association, Irish MedTech Skillnet, Johnson and Johnson, Cook Medical and Zimmer Biomet.

18 PhDs across four faculties were conferred in Athlone, with a further eight conferred in Moylish, making it the largest conferral of PhDs by TUS or its forebears, AIT and LIT. Dean of Graduate Studies Dr Lisa Moran said, "The TUS Graduate School endeavours to provide students with a world-class educational experience through state-of-the-art research and cutting-edge technologies in a variety of disciplinary fields. We are a collaborative, creative and innovative team, working closely with internationally renowned researchers across all of our campuses. "The societal impacts of our graduates reach the far corners of the earth across a multitude of areas including healthcare, robotics, software, sustainability, science, the arts and humanities. We are immensely proud of all our graduates. "As they embark on the next phase of their academic and professional journeys, these scholars will continue to make significant contributions to their respective fields, pushing the boundaries of knowledge and shaping the future."



Caroline da Costa Santos, recipient of TUS's first PhD in Civil Engineering, is pictured with supervisor Dr Paul Archbold and TUS President Prof. Vincent Cunnane.



Dr Siobhán Moane, Dr Patrick Walsh, Dr Patrick Ruane, Dr John Cosgrove and Dr Liam Brown.



MAJOR NATIONAL FUNDING AWARDS



Photographed following the announcement that TUS has secured €12 million under the TU RISE funding call are (L to R) President of TUS Professor Vincent Cunnane, Dr Lisa Moran, Dean of Graduate Studies TUS and TUS VP for Research Development and Innovation Dr Liam Brown.

TUS SECURES €12 MILLION TO DRIVE REGIONALLY FOCUSED RESEARCH AND INNOVATION

Technological University of the Shannon (TUS) has secured €12 million under the recently announced TU RISE funding call, to drive regionally focused research and innovation. TUS will lead sustainable business development and capacity building through in-house and collaborative initiatives, as well as knowledge transfer. The focus will be on research strengths, embracing regional smart specialisation, and facilitating the design of innovation strategies.

Welcoming the programme TUS President Professor Vincent Cunnane said “By strengthening existing partnerships and forging fresh alliances with local business communities, TUS is pioneering a strategy centred on the Midlands and Midwest. This strategy will encompass key regional specialisations including Advanced Manufacturing and Engineering, Biopharma, Life Sciences and Food, ICT and Creative Industries, as well as Sustainable Development, where the potential for impact is most significant.” Significant benefits of TU RISE* include more agile research and innovation offices, increased levels of postgraduate research, and the enablement of cross-cutting research-informed teaching and learning excellence at all learning levels.

This strategy promotes capacity growth and extension of research discipline areas, accelerating TUS’s impact on its regions and stakeholders, particularly for their regional small and medium enterprises (SMEs).

TUS VP for Research Development and Innovation Dr Liam Brown continued “TU RISE is a welcome injection of funding that will be a game-changer for TUS and our sector overall. Our Research and Innovation Offices and Graduate School will be well positioned to ensure that our Research Institutes, Technology Gateways and Industry Clusters deliver significant impact through meaningful projects with our industry and community stakeholders.”

TU RISE is co-financed by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27 and the Northern & Western Regional Programme 2021-27.



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€15 MILLION TUS TECHNOLOGY GATEWAY CONNECTING INDUSTRY TO TUS RESEARCHERS & FACILITIES

Enterprise Ireland (EI) met with the Technological University of the Shannon (TUS) Research, Development and Innovation (RDI) division today (Friday November 24, 2023) to discuss a number of EI supported programmes that provides companies and entrepreneurs from across the Midlands and Midwest continuous access to cutting edge research and specialised equipment and facilities across the six TU campuses.

Last June, Minister for Enterprise, Trade and Employment, Simon Coveney TD and Minister of State for Trade Promotion and Digital Transformation, Dara Calleary TD together with Enterprise Ireland announced €47 million funding for the continuation of the Enterprise Ireland Technology Gateway Programme up to 2029. Four of those gateway projects will be based in TUS, attracting funding of in excess of €10 million to the TU.

In addition to continued Technology Gateway funding, this week TUS also received the highest cohort of Enterprise Ireland’s Capital Equipment Funding for 14 initiatives, helping to ensure TUS gateways are at the forefront of strategic RDI projects, supporting collaborations between the Technological University sector, Irish SMEs and multinational companies.

Vice President for Research Development and Innovation at TUS, Dr Liam Brown said, “This week’s announcement by Minister Coveney on Enterprise Ireland’s recent capital call where the four TUS Technology Gateways have secured in excess of €5 million in capital funding is on top of the €10 million of core funding received from the Technology Gateway call earlier this year. This is a clear endorsement by Enterprise Ireland on the ability of TUS to deliver projects, processes products and technologies that will make a meaningful impact on the competitiveness of Irish businesses and deliver on the ambitious EI metrics of increased jobs and exports.”

According to Marina Donohoe, Divisional Manager, Research & Innovation at Enterprise Ireland, “Companies across all sectors have challenges associated with sustainability, digitalisation, and the very recent advances in Artificial Intelligence. The additional equipment funded by the latest capital call, coupled with the items already available from the previous funding, will help companies gain and maintain a competitive advantage both at home and abroad. I expect the outcomes of this call to have a strategic impact on Irish Industry for years to come.”

Dr Mark Whelan, Technology Gateway Programme Manager, Enterprise Ireland, added, “The Technology Gateway Programme is pivotal in driving innovation across Ireland’s enterprise sector and providing the infrastructure needed to facilitate this innovation is essential. I am very pleased to be in TUS today and I would like to congratulate the team who has been very successful in the latest round of capital funding which includes new state-of-the-art equipment for the Smarter Factory Technology Gateway that will help companies become competitive and resilient and will address important needs within all sectors. It will also strengthen industry collaboration with our third-level sector, benefiting all involved.”

Through this Technology Gateway Funding TUS will encourage and support businesses to innovate and develop a competitive edge, increase market share and expand on a regional, national and global level with a specific concentration in the areas of manufacturing and materials engineering, biotechnology, life sciences, health and food, information and communication technology, digitalisation, design thinking, creative technologies and sustainable development. The new Smarter Factory Technology Gateway*, in addition to Applied Polymer Technologies, COMAND* and Shannon Applied Biotechnology Centre* will build on their previous achievements and continue to connect businesses into the world class third level research system.

The Enterprise Ireland Technology Gateway Programme in TUS is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27.

For further information on TUS Technology Gateways, visit www.technologygateway.ie



Pictured at the Hartnett Centre, TUS were (l-r), Marina Donohoe, Enterprise Ireland, Rachel O’Keefe, Enterprise Ireland, Dr Liam Brown, Vice President Research, Development & Innovation, TUS and Mark Whelan, Enterprise Ireland.



The Enterprise Ireland Technology Gateway Programme in TUS is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme

PRISM (POLYMER, RECYCLING, INDUSTRIAL, SUSTAINABILITY AND MANUFACTURING)

RESEARCH INSTITUTE

PRISM RESEARCH INSTITUTE BRANDING

Polymer Research in TUS has been rebranded as the 'Polymers, Recycling, Industrial, Sustainability and Manufacturing' (PRISM) Research Institute. The TUS Athlone campus has a strong association with polymer engineering dating back to the foundation of its predecessor's inception in the 1970s. The PRISM research institute further builds on the Centre for NanoMaterials Research (CNMR) which was formed when Athlone Institute of Technology (AIT) took over operations of the Polymer Development Centre in Athlone, which in turn was rebranded the Materials Research Institute in 2005. Speaking to the rebrand, PRISM Research Director, Dr Declan Devine said 'It is important that our branding highlights our emphasis on polymer science and engineering. Our previous names gave collaborators the wrong impression as the only material we are focused on is polymers'. The PRISM Research Institute has almost 100 full time researchers working in all facets of Polymer science and engineering, from basic research to contract testing which supports Irish industry.

Polymer science and engineering are key enabling technologies in a range of industries, including plastics, medical device, construction, packaging and cleantech fields. Polymer-based manufacturing is a vital contributor to the Irish economy, and our polymer graduates are highly sought after by the Irish Medtech sector. Research activities in the PRISM incorporate activities in the Enterprise Ireland Funded Applied Polymer Technologies Gateway Centre (APT) and the Centre for Industrial Services and Design (CISD), and span a range of areas, including the Centre for Polymer Sustainability (CPS), Advanced Materials and Manufacturing Platform (AMMP), Smart Polymers, advanced packaging, biomedical polymers, design for manufacture, additive manufacturing, and polymer-based smart manufacturing.

10 YEARS OF APPLIED POLYMER TECHNOLOGIES

Established in 2013, Applied Polymer Technologies (APT) has successfully executed more than 850 projects, accumulating a total value of over €5.7 million for Irish companies to date. Following an initial investment of €1 million by Enterprise Ireland during phase 1 of the Technology Gateway Programme in 2013, APT experienced substantial growth and now employs a workforce of 18 staff and has supported 61 PhD and master's through research students since its inception.

In January 2018, APT secured additional funding of €2 million from the Technology Gateway Programme, marking a significant milestone. Launched in June 2018, the second phase aimed to bolster innovation and enhance the competitive edge of Irish business. By expanding market share and extending influence on regional, national, and global economies.

Supported by the Higher Education Authority, Enterprise Ireland and the Technological University of the Shannon, APT commenced a €5.5 million infrastructure investment in January 2022, which included a complete refurbishment and extension to existing buildings, to provide state-of-the-art processing labs, co-working facilities and 60 new desk spaces. APT entered its third phase in May 2023, having received a substantial funding injection of €4 million. Notably in September, APT completed the building works and now occupies its enhanced facilities.

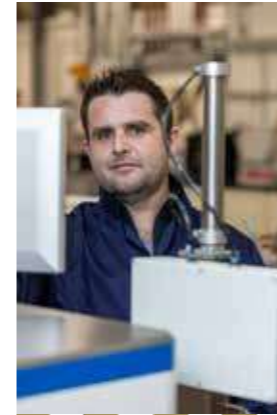
Looking ahead from 2024 to December 2029, APT (Applied Polymer Technologies) remains committed to supporting TUS's strategic research goals, focusing on establishing nationally and internationally recognised research infrastructure within PRISM Research Institute.

APT will continue to actively involve its industry support base in ongoing strategic development, ensuring the Technology Gateway remains relevant to the evolving requirements of the polymer and plastics industry.

The APT Technology Gateway is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27



The Enterprise Ireland Technology Gateway Programme in TUS is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme



IRISH RESEARCH COUNCIL AWARD 'MEDAL OF EXCELLENCE' TO TUS RESEARCHER – A FIRST FOR THE TU SECTOR

Technological University of the Shannon (TUS) PhD student Aaron Maloney has been awarded this year's Jane Grimson Medal of Excellence by the Irish Research Council (IRC). Now in its seventh year, Aaron is the first ever technological university student to receive the prestigious accolade, which is bestowed to the top-ranking postgraduate scholar in the domain of science, technology, engineering and mathematics (STEM). He received the award for his research which focuses on 'UV Stabilization and Recyclability of High-Performance Polymers for In Space Additive Manufacturing'. His research represents a significant leap forward in the realm of space technology, addressing crucial challenges associated with the sustainability and durability of materials which are produced in the harsh conditions of space.

Reflecting on the impact of his research, Aaron stated, "I'm driven by the opportunity to innovate in advanced industries and make a real-world impact. The interdisciplinary nature of this work and its potential to shape the future of aerospace continually inspire my research efforts. It will reduce the need for costly resupply missions, enabling on-demand manufacturing of spare parts, for maintenance in case of emergency and as required."

Congratulating Aaron on his historical achievement TUS President Professor Vincent Cunnane said, "TUS is leading the way in polymer engineering as our researchers and educators share their internationally recognised expertise with students and industry. Our new APT building is increasing our research capacity in the area even further with the inclusion of lab and industrial-scale equipment, in addition to 55 new desk spaces. By providing opportunities like these for research professionals, TUS continues to not only future-proof national skill needs but also provide opportunities for skilled researchers like Aaron to produce work that has real-world impact, while also being quite literally out of this world."

"By providing opportunities like these for research professionals, TUS continues to not only future-proof national skill needs but also provide opportunities for skilled researchers like Aaron to produce work that has real-world impact, while also being quite literally out of this world."

Ballinasloe native Aaron is a graduate of the TUS BEng in Polymer and Mechanical Engineering undergraduate degree which is designed to give students the key skills to work across fields including Biomedical, Greentech and the Polymer sector, before commencing his PhD he completed two summer internships in Applied Polymer Technology (APT)*

Under the guidance of supervisors Dr Declan Devine, Dr Noel Gately and Dr Ian Major, Aaron began his research journey through the joint TUS and APT* PhD scholarship which is granted to top-performing students in the undergraduate degree programme. APT is one of four Enterprise Ireland technology gateways based in TUS, which provide state-of-the-art expertise to generate innovative solutions for the close-to-market needs of Irish industry.

Director of the PRISM Research Institute Dr Declan Devine congratulated the achievement stating "The genesis of Aaron's project has been our engagement with the European Space Agency (ESA). The topic of the project is related to a number of projects we have run in collaboration with ESA and partners around the development of 3D printing for in space applications. Aaron has supported this research since he started with us. "The acknowledgement from the prestigious IRC postgraduate award is a great accomplishment for any researcher but to also be awarded the Jane Grimson Medal of Excellence Award is a true reflection of the excellent research and outputs that Aaron has made since he began his PhD journey".

Advanced Manufacturing Engineer with the ESA (European Space Agency), Dr Advenit Makaya highlighted the significance of Aaron's research for the ESA: "The topic of in-space manufacturing and recycling is considered of high importance to open new capabilities and to ensure the sustainability of future space activities. On-orbit manufacturing and recycling with polymers is a promising field, which we are investigating in a number of technologies, including activities with TUS. Further developments in that area will only bring us closer to the perspective of implementation in space missions."

Earlier this year, Aaron was awarded funding by the IRC through the Government of Ireland Postgraduate programme to complete his studies.

Pictured: Award winner Aaron Maloney in the Applied Polymer Technology (APT) laboratory, TUS.

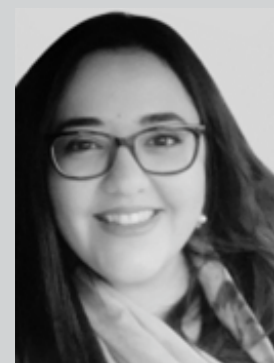
TUS PARTNER WITH LOCAL INDUSTRY TO DELIVER €2.7 MILLION AIMED TO ENHANCECARE FOR OSTOMY POUCH USERS

Mullingar-based medical device company Ostoform, in collaboration with project partners, ROSS polymers and Applied Polymer Technologies, were awarded €2.7 million to support its product development, through the Disruptive Technologies Innovation Fund (DTIF). The FlowAssist Pouch will help to improve the skin condition of ostomy pouch users, while introducing novel design features, dramatically improving their lifestyle and management of their medical condition. Ostoform's key product currently is the Ostoform Seal used by ostomy patients. The Ostoform Seal has been shown to significantly reduce the risk of skin complications, positively impacting patient quality of life. The product is exported globally, with a particular focus on the US where it is being distributed by Medline.

Kevin Kelleher, CEO of Ostoform, said: "This DTIF funding which will help enable us to capitalise on growing international opportunities for our existing and pipeline products."

Call 7 of the Disruptive Technologies Innovation Fund (DTIF) launch at Ostoform Ltd.

The Minister for Enterprise, Trade and Employment, Peter Burke, T.D., the Minister for Further and Higher Education, Research, Innovation and Science Patrick O'Donovan TD., and Minister of State for Trade Promotion, Digital and Company Regulation, Dara Calleary, T.D., have launched Call 7 of the Disruptive Technologies Innovation Fund (DTIF) in Mullingar, Co. Westmeath at the offices of Ostoform Ltd, the lead partner in a DTIF Call 3 project. The fund will be administered by Enterprise Ireland on behalf of the Department of Enterprise, Trade and Employment



TUS PARTNER WITH MEAT TECHNOLOGY IRELAND (MTI) TO DELIVER SUSTAINABLE PACKAGING SOLUTIONS TO INDUSTRY

Meat Technology Ireland (MTI) is an €11m industry-led technology hub performing industry-relevant research, hosted by Teagasc, in partnership with the meat processing industry, research organisations and universities. PRISM at TUS is the lead RPO for Packaging within the consortium and works alongside Teagasc delivering interlinked packaging research based on beef and lamb shelf-life themes, respectively, under the Sustainability pillar.

The packaging program, led by Dr Romina Pezzoli, Applied Packaging Platform Lead at PRISM/APT, aims to drive technology solutions that surpass the state of the art and give the Irish meat industry a competitive advantage in terms of forthcoming EU directives on packaging reuse and recycling.

The main objectives of the program are to:

- de-risk and system-proof the provision of sustainable alternatives for the construct of multi-material packaging structures;
- drive the meat packaging circularity technologies;
- demonstrate the viability of close-loop sustainable packaging systems and recyclability of packaging.



ADVANCED MATERIALS AND MANUFACTURING PLATFORM (AMMP) RESEARCH GROUP

The Advanced Materials and Manufacturing Platform (AMMP) in the PRISM Research institute specializes in the exploration and development of cutting-edge materials, including thermoplastic composites, high-performance materials, and innovative resins and adhesives. Simultaneously, it delves into the forefront of manufacturing, emphasizing composite production, energy-efficient processing, and intelligent, smart manufacturing techniques. Led by Dr Ian Major AMMP are continuing to aid SuperNode Limited in development of next generation subsea superconductor cabling systems in a multi-year SFI Amber Centre project. His team has recently completed an EI funded Innovation Partnership project with Mari-nchem Limited in advanced bioadhesive resins.

LIFE (HEALTH AND WELLBEING BIOSCIENCES) RESEARCH INSTITUTE

€2.8M TUS-LED EU-FUNDED STUDY TO UNRAVEL CAUSES OF PHYSICAL INACTIVITY IN YOUNG PEOPLE

A ground-breaking pan-European initiative spearheaded by the Technological University of the Shannon (TUS) is set to uncover the root causes of physical inactivity in young people. Kicking off this month, the €2.8 million EU-funded 'INDEEP' study will investigate the complex interplay of factors influencing levels of physical activity in 12-14-year-olds, with the overarching aim of informing policy and enhancing health outcomes across Europe.

The project marks a first-of-its-kind exploration of a wide range of factors that impact physical activity, from biological, interpersonal and environmental influences, including genetic predisposition, parent and peer influences, access to green spaces and feelings of safety within those environments. Departing from conventional research methods, which have traditionally relied on self-reported data, INDEEP adopts innovative measurement approaches, such as Ecological Momentary Assessment (EMA) integrated into participants' devices to get real-time insights into environmental behavioural patterns. This is complemented by a novel wearable leg sensor for continuous monitoring of a range of physical activity behaviours.

Dr Kieran Dowd, INDEEP study lead, lecturer in the Department of Sport and Health Sciences and researcher in the SHE Research Group at TUS Athlone Campus, said the wide array of factors under investigation and the study's novel data collection techniques should deliver highly accurate results. "We know from longitudinal studies that a broad range of factors influence physical activity participation in youth. However, much of the time, these factors are looked at in isolation. Even though some of these factors are not modifiable, we need to take them all into consideration collectively to better understand which factors are most important and are worth targeting to improve physical activity in youth," he said.

"We expect our approach, grounded in device-based measurement and scalable measures, to give us a big picture view of why some young people are active and some are not, and we're going to use that information to inform interventions to improve activity behaviours in young people." He continued, "We're not just looking at how much time is being spent walking and running, or time spent in sport. It is important that we measure all behaviours well, such as sitting time or light intensity activity, as we spend the majority of our time in these behaviours."

Central to the INDEEP project's mission is the development of a comprehensive toolbox comprising interventions accessible to practitioners across Europe, spanning public health, sports coaching and education domains.

"We want to empower practitioners with evidence-based strategies tailored to address individual needs and challenges that will facilitate positive behaviour change," Dr Dowd explained. "The idea is that they will say 'Ok, I've got a person here that is developing unhealthy physical activity behaviours, such as lots of screen use or withdrawing from sport participation, which, in time, will negatively impact their health. They don't feel confident enough to go out for a run, so we're going to look to the toolbox to try to modify some other behaviours to help them," he continued. "They will be able to use the toolbox to identify the



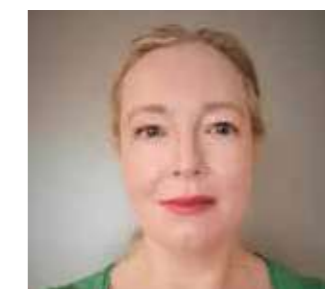
Pictured: Dr Kieran Dowd, INDEEP study lead, lecturer in the Department of Sport and Health Sciences and researcher in the SHE Research Group at TUS Athlone Campus.

key factors to target to give the young person the best possible chance of increasing participation in physical activity."

The collaborative effort involves a multidisciplinary team of eight academic institutions with nine associated partners spanning nine countries in areas such as public health, private industry and education. Leveraging the Marie Curie doctoral network, an EU research and training programme, the study will recruit and nurture a cohort of 10 PhD candidates from across the EU to address the contemporary challenges in physical activity research and policy formation.

VP of Research, Development and Innovation at TUS Dr Liam Brown underscored the project's significance in advancing knowledge and fostering collaboration across Europe. "This is about enhancing collective understanding to drive policy improvements for physical health across Ireland and the EU. With TUS's SHE (Sport, Health and Exercise) group at the helm, INDEEP heralds a significant stride towards addressing these challenges and is poised to shape policies and practices that will benefit generations to come. We are delighted to work closely with partners across the EU to drive this impactful research," he remarked.

Echoing this sentiment, Dean of the TUS Graduate School Dr Lisa Moran expressed pride in TUS's selection to lead this pivotal EU project. "This is the first time TUS will coordinate a Marie Curie doctoral network, and it is an achievement that we're extremely proud of," she said. "We are dedicated to nurturing talent capable of driving positive change and through INDEEP, these 10 PhD candidates will become foremost experts in this discipline."



Dr Margaret Brennan Fournet, LIFE Research Institute Director



Dr Aoife Lane, SHE Research Centre Lead, Head of Department of Sport & Health Sciences

CONFERENCE FOCUSED ON UNDERSTANDING THE ROLE OF SEX AND GENDER IN NUTRITION RESEARCH HOSTED BY THE SHE RESEARCH GROUP

The SHE (Sport, Health and Exercise science) group prioritizes research on women and girls with the primary mission to work to bridge the gender data gap and for this conference, the local organising team led by Dr Patricia Heavey developed a programme to focus on improving our understanding of how to identify and interpret sex and gender differences in nutrition research and explore how these differences might affect or influence nutrition interventions and outcomes. In June 2023, the SHE Research Group organised and hosted for the first time, the Irish Section Nutrition Society Conference. We were thrilled to welcome over 140 delegates from Ireland, England and further afield and over the course of three days, twelve keynote speakers shared their expertise, knowledge and perspectives on sex and gender considerations in nutrition research. The conference presented plenty of informative, enjoyable and stimulating conversations and discussions across a broad range of themes from policy context and tools available to researchers to apply a sex and gender approach to analysis and innovation, food and nutrition considerations for transgender populations and the need for sex and gender considerations when investigating the diet related burden of non-communicable disease. In addition to the three symposia, there were several Original Communication sessions and included fifty-four oral and poster presentations which provided an opportunity to hear about the latest nutrition research.

Of course, it was also an ideal opportunity to meet up with colleagues and friends as well as network. After a busy first day, it was lovely to have some food in the evening sun by the Shannon in Sean's Bar and on Thursday evening over 100 people attended the Gala dinner at the Sheraton Hotel where the dance floor was never empty! To top it all off, TUS PhD candidates, Omid Eslami and Ciara Goland won awards for their oral presentations. Overall, the conference was a resounding success, and it was a privilege to host the conference for the first time in Athlone.

EMULATE IN VITRO MODEL SYSTEM

The Emulate system provides unprecedented biological insight at TUS. The advance in vitro models recreate the microenvironment cells experience inside the human body allowing a faithful recreation of cellular response compared to other model systems. Based in the Cell and Molecular Bio-Immunology Laboratory, the investment in this technology through an Enterprise Ireland award to Dr Emma Murphy will improve our understanding of diseases and streamline the development of innovative therapeutics in an inline cellular based technology system. The Emulate technology, is designed to replicate the complex biological functions of human organs on microchips, offering an insight into the cellular responses to diseases and treatments. Beyond its immediate implications for healthcare, this technology extends its benefits to environmental and food safety research. By mimicking human organ functions, it allows for precise analysis of the impact of environmental toxins and the safety of food additives, thereby contributing to the safeguarding of public health. This versatile application underscores the system's potential to influence a broad spectrum of industries, from pharmaceuticals to cosmetics, ensuring safer products and practices.

The Emulate system is the premier "one-stop-shop" for a comprehensive analysis. The multifaceted technology furnishes our industry partners with novel insights; the system allows access to innovative capabilities, specifically benefiting smaller companies that may lack the means to engage with such advanced services. Through contract research and initiatives like the Enterprise Ireland innovation voucher schemes, these enterprises can gain access to our state-of-the-art equipment. Consequently, small, and medium-sized businesses have an enhanced value proposition characterized by high-quality research conducted within shortened timeframes and elevated quality standards.

Dr Emma Murphy said "Exploring diseases involves efforts to predict, treat, and diagnose. This technology holds promise in enhancing our comprehension of diseases, aiding in better treatment and prediction strategies. I am thrilled that TUS leads Ireland in adopting the Emulate technology and am eager to see the future projects it will support".



TUS LED €2.8 MILLION PROJECT TO REVOLUTIONISE IRELAND'S FOOD PROCESSING INDUSTRY

Ireland's food processing industry is set for a revolutionary transformation as a result of the €2.776 million *CirCoVal project, led by Technological University of the Shannon (TUS) researchers Dr Patrick Murray and Dr Lena Madden. Building on groundwork laid by researchers in Meat Technology Ireland, the project aims to develop under-utilised products in red meat production and thereby create circular processes, add value and promote sustainability throughout the Irish agri-food sector.

This strategic initiative, tailored specifically for Irish primary producers, secured the substantial funding from the Department of Agriculture, Food and the Marine (DAFM), and aims to deliver unparalleled sustainability practices for the country's meat and horticulture sectors. Launched by Minister for Agriculture, Food and the Marine, Charlie McConalogue TD, and Minister of State with special responsibility for research and development, Martin Heydon TD, CirCoVal is positioned as a pivotal player in reshaping the Irish meat and horticulture processing landscape.

Dr Patrick Murray, Head of Research and Technology Transfer at TUS and project co-lead said, "This evidence-based project will demonstrate the capacity to transform, scale, and progress meat processing and associated technologies from lower to higher technology readiness levels. It aims to facilitate Irish primary meat producers and processing industries to transition through circularity and sustainability models, addressing sustainability challenges and contributing to our Climate Action Plan."

Shannon ABC Senior Business Development Scientist and CirCoVal Co-Lead, Dr Lena Madden added "By strategically aligning with regional policy, CirCoVal through collaboration with industry partners, aims to build national capacity and contribute to a sustainable economy. These circular facilities not only generate employment but also position Ireland as a bio-economy leader, attracting regional, national and foreign direct investment. The project will also foster spin-off activities, enhancing infrastructure, and improving the quality of life in the regional community, recognising growth potential in key sectors like agri-food and information and communications technology."

According to Dr Liam Brown, Vice President of Research, Development and Innovation at TUS, "Not only is this project so important to the circular bio-economy and sustainability agendas, it is also a key demonstrator of how TUS partners with leading industry players in the agri-food sector including Meat Technology Ireland and all of its member companies. This is aligned to our RDI objective of increasing knowledge transfer, supporting increased innovation diffusion and strengthening innovation ecosystems regionally, nationally and internationally."



Dr John Colreavy (Meat Technology Ireland), Dr Patrick Murray (TUS), Minister Martin Heydon, Dr Lena Madden (TUS)

The CirCoVal project represents a significant stride towards a more sustainable and technologically advanced circular future for Ireland's agri-food processing industry, showcasing the impact of strategic collaboration and innovative research. Key features of the project include digital controls which focus on the processed outputs which will enhance precision and efficiency in meat processing operations. In addition to horticulture integration, which allows resulting products to be utilised throughout the sector, fostering cross-industry collaboration and sustainability.

The collaborative process of the project includes a strong working partnership with Meat Technology Ireland, Teagasc, University College Dublin, and the Tyndall Institute, University College Cork. CirCoVal distinguishes itself as a pilot project and the only project directly engaged with Irish *industries. TUS, as the leading university, is the sole technological university to receive funding under this strategic call.



Pictured: (L to R) Stephen Mulligan, Enterprise Technology Consultant, Three Ireland; Karl McDermot, Head of ICT and 3IOT, Three Ireland; TUS President Professor Vincent Cunnane; Robert Stack, Key Account Manager, Ericsson Ireland; Dr Enda Fallon, Head of Department, Computer and Software Engineering at TUS.

TUS ATHLONE TO BECOME IRELAND'S MOST CONNECTED CAMPUS THROUGH 5G STANDALONE TRIAL

Technological University Shannon (TUS), Athlone Campus, is set to become the nation's most connected campus thanks to a new partnership with Three Ireland which will see it used as a testbed for 5G Standalone (5G SA).

The initiative marks a crucial milestone in Ireland's journey towards embracing 5G SA connectivity, transforming communication and accelerating the use of big data, the internet of things (IoT) and artificial intelligence (AI).

TUS Athlone researchers are now poised to explore use cases for 5G SA, leveraging its next generation capabilities, such as its improved speed, ultra-low latency and increased connectivity.

"5G Standalone is an immensely powerful technology in search of problems to solve; we have barely scratched the surface on use cases for its capabilities," Dr Enda Fallon, Head of the Department of Computer and Software Engineering at TUS Athlone, explains. "We're going to be looking at user scenarios – how can 5G SA be used in people's everyday lives, using the campus as a testbed for this technology, and from that design and evaluate solutions to problems that have yet to be conceptualised."

Initial ideas for how the technology might be applied across campus include the creation of immersive collaboration spaces for students, staff and researchers, 5G-enabled polymer labs and sports facilities, connected health sciences, and even remote real-time music collaborations with sound engineering students. The use of 5G-enabled drones for real-time performance feedback in high-performance sports, enhancing runner safety through object detection and risk analysis, and remote surgery are just some of the use cases under consideration.

According to TUS President Professor Vincent Cunnane, TUS's unparalleled technical expertise in the field of software engineering set it apart and make it the ideal partner for the pioneering trial: "TUS is a leader in the field, bringing a deep knowledge base and a proven track record of excellence. Our focus on near-to-market research and knowledge transfer ensures that our endeavours have immediate benefits for both industry and our students," Professor Cunnane says. "This expertise and commitment make us the ideal partner for pioneering the trial of 5G Standalone technology and exploring its exciting possibilities. Through our engagement in applied projects like these, we not only shape the future of technology but also enrich the learning experiences of our students."

Karl McDermot, Head of Connected Solutions at Three Ireland, comments, "5G Standalone is the next evolution in 5G technology, as we move fully away from a reliance on 4G and into 5G core technology. We are delighted to partner with TUS, working alongside them to advance these use cases and explore the possibilities for powering advanced technologies, supporting greater connectivity for all kinds of devices and user experiences."

Rob Stack, Key Account Manager, Ericsson Ireland, says, "As a global leader in 5G and with a world-class R&D development centre in Athlone we are excited to be collaborating with TUS and Three Ireland to drive forward innovation in the midlands region. 5G standalone technology offers a seamless and secure connectivity foundation to help unlock advanced applications and services that can power digital transformation, enhance productivity, streamline efficiencies and deliver benefits for a wide variety of different organisations."

The Three Ireland 5G SA trial, powered by Ericsson and tested using the Samsung flagship device – the Galaxy S23 Ultra, will include 5G SA being deployed across the entire campus with additional 5G hardware for indoor coverage being installed in TUS Athlone's Engineering Building and Applied Polymer Technology Lab in 2024, with hopes of extending the technology outwards across the campus thereafter.

TUS RESILMESH PROJECT RECEIVES €7M EU INVESTMENT TO IMPROVE CYBER SECURITY

ResilMesh, a new collaborative EU project coordinated by the Technological University of the Shannon's (TUS) Software Research Institute (SRI) has received a €7 million investment from the European Union under the Horizon Europe programme.

Over the next 36 months, the project will focus on developing cyber situational awareness based on a Security Orchestration and Analytics Platform Architecture (SOAPA) toolset, to improve digital infrastructure resilience.

Director of the Software Research Institute (SRI) and lead coordinator Dr Brian Lee said, "The increasing complexity of critical infrastructures makes it impossible for security teams to defend every entry point. ResilMesh aims to enable critical infrastructure to become more cyber resilient by providing tools and mechanisms to counter sophisticated attacks"

VP for Research, Development and Innovation at TUS Dr Liam Brown said, "Cybersecurity is a key challenge that society faces today. Led by Brian Lee and his team at the TUS Software Research Institute, supported by a number of leading European practitioners, the ResilMesh Horizon Europe project is a testament to the TUS Strategic RDI priority of applied research making a meaningful societal impact."

"The focus will be on a number of real-world pilots to ensure that the platform is evaluated across a wide range of critical infrastructures. It will also provide a suite of best practices to build cyber capacity to improve resilience preparation."

14 organisations across nine European countries, which encompass higher education, research institutions, industry and end users, will



Dr Brian Lee, director of the Software Research Institute at TUS Athlone Campus, and ResilMesh consortium partners during the inaugural project meeting in Westmeath.

atim (ADVANCED TECHNOLOGIES IN MANUFACTURING) CLUSTER UPDATE



Empowering Polymer Partnerships

atim is the lead partner in InterTrade Ireland supported project, PolymerConnect. This project will Leverage a data-driven approach; PolymerConnect will systematically map, categorise, and profile 350 companies, academic partners, and key stakeholders within the polymer industry across the island of Ireland. By providing comprehensive insights into the ecosystem, the PolymerConnect partners will facilitates collaborative opportunities among stakeholders, fostering innovation, resilience, and competitiveness on a national scale.

atim is partnering with Northern Ireland Polymer Association (NIPA), Manufacturing Northern Ireland, First Polymer Training Skillnet, Ibec, Irish Polymer Group, Technological University of the Shannon, Atlantic Technological University and Irish Manufacturing Research to deliver this 16-month project, which will commence from June.



We are thrilled to announce atim cluster as a partner in ResC4EU, a three-year EU funded initiative aimed at bolstering the resilience and sustainability of EU businesses, particularly small and medium-sized enterprises (SMEs), in the face of supply chain disruptions like those witnessed during the COVID-19 crisis and ongoing conflicts or disasters such as the Suez Channel closure, Ukraine war, and floodings.

ResC4EU will serve as a collaborative platform, offering cutting-edge models and tools to help companies anticipate and detect disruptions in their supply chains. Our focus on SMEs includes tailored support and training programs through the ResC4EU Net-Zero Industry Academies. The project is dedicated to fostering alliances between manufacturing SMEs and technological solution providers to drive resilience and sustainability in industrial processes.

The consortium, led by Composites United e.V., comprises of six industry clusters, an intercluster and innovation management expert, and two research organisations. Together, we will directly engage with up to 1000 SMEs across Europe, covering 14 critical industrial ecosystems. Join us in this transformative journey to strengthen European supply chains and pave the way for a more resilient future!

SOCIAL SCIENCES CONNEXIONS RESEARCH INSTITUTE

The Social Sciences ConneXions research institute has been hosting Spring and Autumn Series research talks since February 2014. These free lunchtime talks highlight the research conducted by postgrads, staff and collaborators with the six research groups in SSC:

- HEaLR
- TAG (Tobacco, Alcohol and Gambling)
- EDGE (Equality, Diversity and Gender)
- ASCEND (Applied Social Care Education)
- ENGAGE (Youth and Community Work) and Loss and Grief.

Spring Series 2024 kicked off on February 20 this year with presentations from postgrad students Aoife Ryan, Michaela Cooley and Liz Gleeson of the Loss and Grief and HEaLR groups.

They described the roads they have each travelled towards developing their research methodologies, and included the pitstops and potholes along the way in their attempts to grapple with their positioning and qualitative approaches.

SSC is celebrating a decade of Spring and Autumn series with over 60 talks from 100+ LIT/TUS staff members, postgrads and collaborators talking about all aspects of research within the social sciences and beyond. Lots of knowledge, lots of discovery, lots of conversation, curiosity and encouragement from these little lunchtime talks - long may it continue!

To learn more about Social Sciences ConneXions contact institute director Dr. Frank Houghton at frank.houghton@tus.ie.

SIX NATION STUDY ON ALCOHOL MARKETING TO YOUTH VIA SOCIAL MEDIA

Dr Frank Houghton and Ms Jennifer Moran Stritch are part of a new funded six nation study, involving colleagues in France, Switzerland, Italy, Finland, Lithuania and Ireland, being led by the French Observatoire Francais des drogues et des tendances addictives (French Monitoring Centre on Drugs and Addiction [OFDT]). This mixed methods study, called the CIPPAL-ADAM study, aims to explore youth and young adult s' exposure to alcohol advertising via online social media. The project aims to explore the relevant literature as well and involves interviews and an online survey.

IDEAM (DESIGN ENGINEERING, ARTIFICIAL INTELLIGENCE AND ADVANCED MANUFACTURING) RESEARCH INSTITUTE

TUS and IDEAM (Mid-West) contributed an inspiring article to the 'Future of Manufacturing' print and media campaign via MediaPlanet. The article emphasised how IDEAM and TUS will help to

- Empower Industry through Collaboration.
- Foster Ground Breaking Research.
- Nurture innovation in SME's and Startups.

TUS is a beacon of collaborative development at the centre of innovation, where academia and industry intersect. A new pioneering effort, the Smarter Factory Technology Gateway, is paving the way for disruptive change in manufacturing. TUS is creating a centre of excellence for Industry 4.0/5.0, data-driven intelligence, and flexible, adaptable, and digital production processes to help innovative and ambitious businesses transition through digital and green initiatives, thereby shaping the future of manufacturing.

The Smarter Factory Technology Gateway (<https://www.technologygateway.ie/>) is co-funded by the Government of Ireland and the European Union through the Southern, Eastern & Midland Regional Programme 2021-2027. Working in close collaboration with Enterprise Ireland, the Gateway will partner with all of industry in the manufacturing value chain, in collaborative research projects leading to impactful and breakthrough innovation. Jim O'Hagan TUS (Gateway Manager), will lead this innovative initiative



NEW SMARTER FACTORY TECHNOLOGY GATEWAY TO PROPEL IRISH COMPANIES INTO A DIGITAL FUTURE

The new Smarter Factory Technology Gateway (SFT) launched on April 4, 2024 at the Technological University of the Shannon (TUS) Moylish Campus, is already providing an investment of €1.8 million in the Mid West and paving the way for enhanced enterprise and business security.

The SFT is poised to support Irish companies in navigating and embracing the challenges faced by the digital landscape.

Serving as a vital conduit between industry and academia, namely TUS, the SFT will forge collaborative ties with cutting-edge research institutions, bridging the gap between students, academia and enterprise. The data furnished by the gateway will empower businesses, fortifying them against digital threats and challenges in real-time, fostering smarter and more integrated operations.

As technology continues to advance and digitalisation takes centre stage, the gateway aims to capitalise on the region's smart specialisations, particularly in advanced manufacturing, ICT, digital transformation, artificial intelligence, and virtual reality. These efforts will lead to tangible improvements in real-time systems, energy efficiency, and operational efficacy.

Smarter Factory Technology Gateway Manager at TUS, Jim O'Hagan, remarked, "Our gateway will enhance the products, operations, efficiencies, and digital transformation of Irish manufacturing businesses through innovative research projects, funded by Enterprise Ireland grants. Through our advanced approach, we are poised as a catalyst for innovation and will be pivotal in meeting the evolving demands of customers, positioning companies for sustained growth and competitiveness." Explaining that the SFT will accelerate the development of future talent and innovation the region Marina Donohoe, Head of Research and Innovation at Enterprise Ireland said, "New insights from smarter data will deliver many benefits for Irish businesses, such as improved quality, increased capacity, cost reductions and more sustainable operations. This important initiative will also lead to impactful innovation and will support businesses on their sustainable and digital journeys, to support innovative enterprises as they navigate the increasingly diverse and evolving digital landscape, and shape the future of manufacturing."

Businesses can readily engage with the gateway through initiatives such as the Enterprise Ireland Innovation Voucher schemes or funded research programmes.

The SFT stands as a beacon of excellence in the realm of Industry 4.0 and 5.0, spearheading digital and sustainable transformations to bolster innovative enterprises and shape the future landscape of manufacturing.

The Smarter Factory Technology Gateway is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midlands Regional Programme 2021-27



Mark Whelan, Technology Gateway Programme Manager, Enterprise Ireland; Jim O'Hagan, Smarter Factory Technology Manager, Technological University of the Shannon; Karen Coughlan, Manager, Southern Regional Assembly and Dr Liam Brown, Vice President for Research, Development and Innovation, Technological University of the Shannon pictured at the TUS Smarter Factory Technology Gateway.



SUPPORT TO THE RENOVATION WAVE

Deep Energy Renovation of Historic Buildings in Ireland funded by DG Reform is a 26 month Irish project with beneficiaries from Office of Public Works (OPW) and Limerick City County Council. TUS, Trinomics, Shaffrey Architects and Passivate to deliver Practical Guidelines for the deep renovation of 5 historical buildings.

The first steps is to develop four exemplars or case studies for the energy upgrade of different types of traditionally built historic buildings in the public sector (including 'protected structures'). Following on from the Guidelines developed by the OPW and in line with IS EN 16883:2017 Conservation of cultural heritage - guidelines for improving the energy performance of historic buildings, these case studies will provide energy data from a number of in-situ material tests supported by pre and post monitoring of the energy performance of same.

TUS, along with Trinomics will initially assess the case study in Limerick which is a typical residential Georgian brick building, to demonstrate value for money of energy efficiency renovation investments based on a holistic life cycle cost analysis and cost benefit analysis considering societal benefits. The OPW case studies will then also be assessed, to provide practical Guidelines for the deep energy renovation of similar building types in Ireland.

To support and inform the Guidelines for Ireland, investigation of funding mechanisms of exemplars in Europe will be researched to establish a sustainable investment mechanism for the renovation of historic buildings at local and regional level in Ireland. To share this detailed information and guidelines, in January 2025, TUS will deliver a 3 day hybrid training event at the prestigious Dublin Castle with participation from members of the construction sector and conservation field on 17th January, 25th January, and 7th February 2025. 01 Jan 2023 – 28 Feb 2025

Digital Academy for Sustainable Built Environment (DASBE)

HEA Human Capital Initiative HCI Pillar 3 funded project. So much has happened within DASBE since it started in June 2021, with the rapid design development and deployment of over 39 new flexible programmes for the construction industry at NQF levels 6-9, whether these are short micro-credentials, certificates or Diplomas and Masters. TUS and ATU have pushed the boundaries for the construction industry addressing the skills gaps, but also acknowledging the emerging technologies which are changing the direction of learning and currently 16 more short courses are being developed to futureproof the industry. It should be recognised that DASBE have provided the first programme in Ireland for the Higher Diploma in Residential Energy Retrofit Management, Certificate in Energy Renovation of Traditional Buildings and Drones in Construction upskilling over 80 students from the construction industry over the last 18 months. overall

1,076 students have upskilled on the DASBE courses over the last 36 months. TUS also flies the flag to be the first registered educational body in Ireland to deliver unmanned aircraft (drones) training, thanks to the dedicated efforts of Jonathan Blackmore and Lis O'Brien. The University now has a Specific Operations Policy in place for same. After a lot of discussions with an Industry consultant Mark Pendergast owner of Safe Drones, we are now able to fly in the A2 Category which fits the university quite well in terms of our anticipated use of Drones and the first TUS Pilots have just passed their IAA exam.

Following on from the successful development of the detection of building defects Virtual Reality (VR) educational tool, other VR tools directed at construction have been developed, with direction on installing and understanding heat pumps and photovoltaics. These have been piloted with students and staff across all campuses. The testing of digital tools continues, with the collection of data using drones and Lidar scanners developing a virtual model of Thurles campus establishing a digital twin for the future management, maintenance and education of the building. This Living Lab, we hope, will establish a template for the other TUS campuses. Living labs are used to provide essential data for facilities and estates, provide research data and information for students and lecturers and ensure sustainability of all our campuses. The living Lab is moving into phase 2 in the coming months.

The final, but possibly one of the most important outputs from DASBE is the creation of the DASBE Digital Training Platform which will hold all accredited programmes and trainings in one place - a ONE STOP SHOP. The DASBE platform will be a resource for the construction industry to find relevant accredited training courses in both academia and industry. It will enable learners to undertake a range of programmes ranging from micro-accreditation (including digital badges), Special Purpose Awards (Certificates), and Minor and Major awards focusing on specific topics, needs and requirements in the construction sector.

The DASBE Project's primary objective is to reduce the education and training skills gap that has arisen in the construction sector. As part of this primary objective, and in collaboration with the DASBE consortium, the Digital Platform will centralise, support, and deliver many of the educational requirements needed to address the gap. The official launch of this digital training platform will be held at the DASBE final conference on 9th May 2024 with Minister Harris attending.



Green Hive is a Cooperation Partnership in Vocational Education and Training (VET), co-funded by the Erasmus+ Programme of the EU. The project, implemented by the Technological University of the Shannon: Midlands Midwest (Ireland), Lascò (Italy), KEAN (Greece), Femxa (Spain) and Team 4 Excellence (Romania), aims to increase the capacity of VET providers to prepare learners for the green transition by developing a European platform-based ecosystem for sustainability education called the "Green Hive".

The Green Hive will consist of localised hubs for sustainability education, namely the "Green Combs", established within VET providers. While the Hive will be an open and cross-sectoral long-term cooperation network dedicated to innovation, continuous improvement and co-creation in sustainability education, the Combs will make VET providers the managing centre of networks of local stakeholders (i.e., companies, representatives of universities, civil society organisations and professional associations) for learning, networking and cooperating on sustainability challenges.

Phase 1 of the Green Hive project has concluded! This phase consisted of research and development of the Methodological Framework for creating a European sustainability education ecosystem. The Comparative Report on Sustainable Education in Vocational Education and Training (VET) in Europe outlines the key findings and conclusions of the research, undertaken in the 5 partner countries, regarding the current strengths and weaknesses in Sustainable Education in VET and assessing

the current status and best practices in the development of the knowledge, skills and attitudes defined by GreenComp. Outcomes from the Comparative Report include that educators from all regions emphasised their interest in developing sustainability competencies in VET, calling for individual leadership within educational institutions and integration into curricula. The rise of digital learning and climate awareness greatly fuels the growing interest in sustainable practices. Challenges include educators' dedication in an already busy environment, inadequacies in current practices, and institutional barriers. Furthermore, limited resources, resistance to change, and the need for robust monitoring tools are also identified as obstacles.

Benefits of sustainable competencies include contributions to sustainable economies and shaping a greener future. Staff training, dedicated resources, and practical methodologies are crucial, while collaboration with external partners is highlighted for success. Aligning education with Sustainable Development Goals is deemed essential for societal well-being and addressing global challenges.

You can read the full Comparative Report and view the Methodological Framework, as well as the National Reports from Ireland, Italy, Greece, Spain and Romania on the project website <https://www.greenhiveproject.eu/en/>. Researchers gathered 50 best practices from the partner countries. These can also be found on the project website.

€1.1M ERASMUS ALLIANCE FOR EDUCATION AND ENTERPRISE GRANT AWARDED TO TUS

SDRI is delighted to announce the successful granting of a €1.1m Erasmus Alliance for Education and Enterprise project on Regenerative Sustainable Food Chains through Market Gardening called Agretain. It has 11 partners from 5 countries including Slí Eile Support Services, a residential mental health charity which operates several social enterprises, namely a social farm, organic producer, farmers market and an artisan bakery. It is based in North Cork. It is the only service of its kind in Ireland and has developed a successful market gardening model using volunteers, community, local farmers, and service users. TUS will be coordinating and managing this three-year project and leading in the Work Package focused on designing an e-learning platform and gamification resources. The project is targeted at HEs, VETs and enterprises. The main aim of AGRETAIN is to combine the efforts of universities and enterprises, VET providers, farmer consultants, research institutes and social actors to develop new teaching methods and learning material in the field of market gardening focusing to open up new learning opportunities for the embedding of more resilient, sustainable/ environmentally friendly, soil regenerative practices in small scale farming.

Learning Units will be developed at EQF level 5 with the potential for micro-credentials accreditation and will be piloted among farmer recruits. An interactive map will be developed for the partner regions identifying soil, water, humidity, and temperature. Market Gardening hubs will also be established. The training will not only concentrate on technical aspects and farming practices related to market gardening but will also focus on the development of knowledge related to the socio-economic impact of market gardening as well as essential skills which are crucial for the adoption of sustainable and resilient strategies in small scale farming.

For more information on this project please contact marie.taylor@tus.ie



TUS LSAD (Limerick School of Art and Design) in conjunction with CONFIRM (SFI's Smart Manufacturing research centre) are working with designers, creators, and garment producers; through talks, panel discussions and workshops, developing insights and actions into the sustainable garment manufacturing practices.

Various investigations show how the garment manufacturing industry is facing considerable obstacles in terms of fast fashion, sustainability, green washing and consumer confusion. In addition, local manufacturers must navigate a number of issues relating to the processing of raw materials, cost of utilities, efficiencies in the supply chain and international manufacturing of widely varying standards.

The objective was to begin dialogue between participants, academics and policy makers to better understand how to address the challenges faced by the garment industry. Explorations focused on entrepreneurship, talent and skill development, connectivity and networking, digitalising manufacturing, and sustainability & circularity.

Ongoing activities continue to address challenges, obstacles, and opportunities for the industry, exploring the development of industry supports, industry research, skills development, innovation processes, prototyping and technological developments that advance garment manufacturing towards a more sustainable and circular future

FORGE Design Factory and LEO (Local Enterprise Office) Limerick, partnered on a unique programme for designers and creatives, resident in Limerick, who were committed to growing their business. Participants in this pilot programme work in fashion, textiles, TV and Film, architecture and publishing.

That design is core to successful innovation is well established, and seen as a strong trait among Europe's leading innovation regions. When implemented throughout the innovation process, design accelerates the commercialisation of science and technology research; leads to greater insights to develop more desirable and efficient products and services; and increases the productivity, turnover and longevity of businesses.

The Design Futures Cultivator programme saw participants develop a more thorough grounding of their research, creative and development processes. The immense support of LEO Limerick afforded participants guidance and advice to challenge their concepts to ensure their ideas were technically feasible and financially viable. Meeting with other LEO Limerick alumni, offered insights to the supports available within the local enterprise network.

The next iteration of Design Futures Cultivator is currently in development, and interested parties are encouraged to make contact through forgedesignfactory.ie



SUSTAINABLE FOOTWEAR FUTURES

This programme invited participants from Design, Fine Art and Engineering degrees to engage in research, iterative design techniques, textile development and prototyping for future footwear through online lectures, face-to-face workshops, project work, active learning, industry day, peer learning and presentations. The process follows the reality of the footwear industry, creating outcomes that align with the footwear industry needs. Participants analysed the properties, behaviours and performance of materials appropriate to footwear; the movement and mechanics of the foot; and gained a deeper understanding of the principles of a circular economy—how we might eliminate waste and pollution, circulate products and materials and replenish and regenerate nature.

The multidisciplinary teams explored creative applications for regenerative fibres and digital fabrication techniques for textiles, pattern drafting, technical footwear production techniques, and innovative digital design processes including scanning and 3D modelling, virtual reality, augmented reality and 3D virtual showroom. The 'Sustainable Footwear Futures' Short Advanced Programme was organised by TUS (Ireland) IPCA (Portugal) and HAMK (Finland)— each with a strong background in Fashion, Textile and Footwear Design. RUN-EU Short Advanced Programmes (SAPs) are one to eight week programmes that combine on-campus activities with equally meaningful online sessions.

TUS LSAD CONFERENCE TOLD COMMUNITY HAS KEY ROLE TO PLAY IN SUSTAINABLE TOURISM

The key role of community in sustainable tourism, and in particular the role of "Renew Bunratty" in the future development of the county Clare village and its tourism amenities, was central to the sustainable tourism conference organised by TUS Limerick School of Art and Design (LSAD) and Bunratty Local Development Association (BLDA) this Tuesday on February 6, 2024.

The world-renowned art and design school has partnered with the community response group to create "Renew Bunratty", a project that has received €50,000 from Creative Ireland's Creative Climate Action Fund II.

This project is a community-led, hands-on collaboration between the university and Bunratty in a process that has been designed to nurture a sense of caring for the environment in and around Bunratty Castle, one of the biggest tourist attractions in Ireland.

On Tuesday, leaders in tourism and local government attended a daylong conference organised by LSAD and BLDA that discussed the important insight communities can bring to the redevelopment of their villages and the associated tourism offering.

President of TUS Professor Vincent Cunnane assured delegates of the Technological University of the Shannon's (TUS) support for the project though the work of the staff and students at LSAD and the ability of the university to reach out to regions across Europe facing similar tourism challenges through RUN-EU – the European university alliance which is currently led by TUS.

"TUS plays a pivotal role in supporting and developing the region's economy. This conference allows us to bring together some of the leading experts in the area of tourism and sustainability, including our own researchers and lecturers to share their experience and ideas. Through LSAD we are also proud to work with BLDA and the local community to develop a sustainable approach to tourism and local development, something which deepens our established role as a major provider of education in business, hospitality and tourism."

Addressing the conference also, Chief Executive of Clare County Council Pat Dowling told delegates, "Bunratty is an iconic, internationally renowned brand that could benefit from a new lease of life" adding that the local authority was committed to developing the local tourism attractions and is currently in discussions with tourism bodies about the recreation and reinvigoration of Bunratty.

Highlighting some of the tourism projects the council is currently supporting he pointed to the importance of the conservation of Bunratty Castle. "We have a duty of care to protect the castle, and don't be surprised if you see work beginning on that in the future," he said.

Mike Fitzpatrick Dean Limerick School of Art and Design and Director of Cultural Engagement, TUS said that "through a series of projects, LSAD with BLDA and the local community will develop a sustainable approach to tourism and local development through intergenerational collaboration and skills exchange, repurposing materials and exploring ways of subtly shifting behaviours to enrich rather the local ecosystems that first made Bunratty attractive. This project also aims to investigate how a fairer and more sustainable model of tourism might be achieved, benefiting the economy and livelihoods of those who depend on tourism for their income.



KEY INITIATIVES



TUS HOSTS LEADERSHIP FORUM FOR EURASHE

Regional leaders, the TUS Senior Leadership Team and the Board of EURASHE (European Association of Institutions in Higher Education) engaged in a regionally-focused leadership forum at the TUS Moylish campus on Friday, March 8.

During its meeting, the Board reviewed the identity of EURASHE in light of changes to higher education systems, including the creation of Technological Universities in Ireland and the emergence of applied European University Alliances, including RUN-EU, co-ordinated by TUS. The board agreed to make proposals on how EURASHE brands itself in this new context, with proposals to be presented to the General Assembly in May prior to its Annual Conference to be held at St. Pölten University of Applied Science (Austria). St. Pölten, like TUS, also coordinates one of the European University Alliances.

The forum was opened by TUS President, Prof. Vincent Cunnane who focused on some exemplars of successful regional engagement, before a keynote address on Leadership in Regional Engagement from Prof. Eamonn Murphy, Midwest Regional Enterprise Plan Steering Group Chair and Managing Director Irish Centre for Business Excellence.



GO GREEN! RESEARCH PROJECT : TRANSDISCIPLINARY APPROACHES TO TEACHING ENVIRONMENTAL SUSTAINABILITY AT SCHOOL

Dr Rita Scully is heading TUS's work in the Go Green! Project. The Go Green! project aims at redefining disciplinary programs and educational methods through cooperation between the different institutions of education. Schools have a duty to educate new generations to an integrated and sustainable vision of development through inputs that can stimulate a reflection on the objectives of the Agenda 2030. Their duty is also to make new generations understand the impact of their behaviours and to make them aware of the consequences that their actions have on the future.

This project is funded by the European Commission through the Italian National Agency for the Erasmus+ Programme, Cooperation partnerships in School Education and will be coordinated by the project applicant IIS Galileo Galilei (Italy) in cooperation with Pixel (Florence).

The Go Green team have developed resources throughout the project development. The E-learning training packages included imbedded resources and videos. These learning packages are supported by 30 developed lesson plans. Following the project teams final meeting in Bilbao the open access resources are now available on the project website <https://go-green.pixel-online.org/e-learning.php>



EU-FUNDED TUS-LED PROJECT TO SUPPORT REFUGEE TOURISM ENTREPRENEURSHIP

In a significant move towards fostering refugee entrepreneurship in the tourism sector, the Technological University of the Shannon (TUS) has signed a memorandum of understanding (MoU) with Khmelnytskyi National University (KHMNU) in Ukraine, alongside collaborative efforts with partners in Turkey, Croatia, and Belgium. The joint initiative aims to identify both successful practices and obstacles, drawing insights from case studies applicable across EU countries grappling with the refugee crises stemming from the invasion of Ukraine.

Over a two-year period, the EU-funded project, named Inspire, intends to develop valuable resources to support refugee populations. Such resources include the creation of a good practice user guide for refugee tourism entrepreneurs which will be supported by course materials, a website and mobile application.

The Inspire project also seeks to establish a searchable databank encompassing various supports for refugee tourism entrepreneurs, including educational and training aids, financial options, networking opportunities, and business support services.

TUS Inspire project leads Dr Anthony Johnston and Dr Noëlle O'Connor say this is about supporting refugees' social integration and broadening access to higher education while also acknowledging the tangible economic value refugees add to their host country's economy.

"Refugees are sometimes viewed as a strain on their host country's economy, despite growing evidence proving their substantial economic contributions and a higher likelihood of job creation compared to other migrant groups or native-born citizens," they explained.

"The Inspire project recognises this value and is specifically focussed on offering support to refugee-led tourism entrepreneurship which has the capacity to add significantly to Ireland's economy." Ireland's hospitality and tourism industry contributes over €7 billion to the economy and stands to benefit from the Inspire project.

The sector, one of the country's largest employers, offers regionally dispersed economic opportunities, potentially creating new tourism jobs across Ireland. TUS President Prof. Vincent Cunnane welcomed the inaugural delegation of the Inspire project to TUS's Athlone campus this week, where he reaffirmed TUS's commitment to the welcome, inclusion and support of refugees. "As a designated University of Sanctuary, we've nurtured a campus-wide atmosphere where everyone can feel safe and welcome, and pursue an education. The Inspire project extends our ongoing efforts, acknowledging the pressing crisis in Ukraine and proactively empowering refugees who find themselves displaced through no fault of their own," Prof. Cunnane said. "While hosting refugees may be perceived as a cost, it is, in reality, an investment — not only in enhancing the social fabric of our communities but also in recognising and benefiting from their potential substantial economic contributions," he added.

The Inspire project, set to run from November 2023 to November 2025, receives funding from Erasmus Key Action 2. The collaborative effort includes TUS (Ireland), Businet, KHMNU, and DVA (Ukraine), DEU (Turkey), PAR (Croatia), and PXL (Belgium).

The project's next meeting is scheduled in Izmir, Turkey, May 2024.

TOURISM INNOVATION RESEARCH GROUP

We were delighted to launch the Tourism Innovation Research Group in November 2023 in the Moylish Campus. The group is directed by Dr Tony Johnston (Athlone) and Dr Caitriona Murphy, Deputy Director (Limerick). The TIRG's mission is to support the sustainable development of the Irish tourism industry, with a particular focus on issues in the Midlands and Midwest regions.

Our goals in the group are:

- To position Technological University of the Shannon: Midlands Midwest as a recognised leading centre of expertise for the Irish tourism industry, tourism innovators, policy makers, educators, and other stakeholders;
- To inform and drive the contribution of tourism to achieving the SDGs and addressing the challenges facing local communities and marginalised groups;
- To strengthen the capacity of TUS to attract external research funding, collaborative projects and post-graduate students;
- To raise the quality of tourism-related applied research at TUS and elevate the status of tourism as a significant field of study in the university;
- To inspire, inform and drive tourism-related under-graduate and post-graduate course development at TUS.

At the launch event we presented the projects we are working on, which include leading the Work Package 5 Tourism Group in RUN-EU which has resulted in successful European funded projects, supervision of over 10 PHD students in tourism across our campuses, successful completion of a project on Dark Sky Ecotourism, ESD and SATLE projects and new projects launched on food waste reduction and on integration of refugees.



Wassim Derguech, Co-founder and Chief Operating Officer of FMCI and President of TUS Professor Vincent Cunnane driving the future.

TUS AND FUTURE MOBILITY CAMPUS IRELAND PARTNERSHIP TO ENSURE FUTURE OF AUTONOMOUS VEHICLE INDUSTRY IN THE REGION

Technological University of the Shannon (TUS) has partnered with Future Mobility Campus Ireland to develop and deliver a post graduate programme in Autonomous Vehicles, thereby securing the Mid West's position as a global leader in this emerging sector. The programme will up-skill those already working in this cutting-edge sector, ensuring a skilled workforce for the future and using the most sophisticated infrastructure and autonomous vehicles available in Ireland as part of the training process.

Speaking at the launch of the new programme, President of TUS Professor Vincent Cunnane said, "For the last number of years the Mid-West region has become a global player in the development and testing of autonomous vehicles, be they vehicles on the road, robotics on land, or drones in the air. Global innovators and market leaders such as Jaguar Land Rover, General Motors, Analog Devices, Cisco, Mergon, Provisio and Valeo among others all have operations and employment bases in Ireland.

"This cutting-edge emerging sector delivers boundless opportunities which will ultimately change the way we live. TUS is proud to have partnered with Ireland's leading test-bed and development centre at Future Mobility Campus Ireland in developing and delivering this new Postgraduate Diploma in Autonomous Vehicles."

CEO and Co-founder of Future Mobility Campus Ireland, Russell Vickers said, "This strategic collaboration with TUS aligns with our vision of shaping the future of advanced mobility by preparing individuals to excel in the dynamic field of autonomous vehicles. It is imperative to cultivate a pool of talent equipped with highly sought-after skills. Our collaboration with TUS is an important enabler for providing students with a comprehensive curriculum and hands-on experience. We are not only contributing to the academic landscape but also fostering the growth of an advanced mobility ecosystem in Ireland and internationally."

The Autonomous Vehicles Postgraduate Diploma is funded by the Higher Education Authority through the Human Capital initiative, enabling eligible students avail of 90% funding support (students pay €875). The programme, developed and informed by industry, runs for 18 months and will be delivered online in the evening time with monthly weekend workshops in FMCI. At the end of the 18 months, students have the opportunity to continue their studies and progress to a Masters Degree.

INNOVATION AND ENTERPRISE

For this RDI Newsletter, we're highlighting the expansive Innovation & Enterprise support systems available through TUS, including our four campus incubation centres – Hartnett, MIRC, Questum and Thurles CEC – and entrepreneurial programmes like New Frontiers, Student Inc, TUS Works and ESA Space Solutions Ireland. We shine a light on some of the inspirational entrepreneurs and growing businesses that are based in our centres and are engaged in our programmes.

And the priority of TUS's Knowledge Transfer and Commercialisation Office to support knowledge transfer and commercialise IP arising from research at TUS.

LATEST CLIENT NEWS

SKANSTEC ENGINEERING - DRIVING INNOVATION AND EXPANSION

Skanstec Engineering, based in Questum, Clonmel, continues to solidify its position as a leader in the engineering sector, focusing on key infrastructure projects within the energy and telecommunications industries. Since its establishment in 2021 by Declan Wynne, the company has demonstrated exceptional growth, with revenues hitting €20 million in 2022 and employing 130 people.

Recent strategic projects include the design and construction of multiple 60-kilovolt substations for a major Danish electricity network operator to support the integration of renewable energy into the grid, and the development of a 50-megawatt heat production facility.

In February 2024, H&MV Engineering ("H&MV"), a leading mission-critical specialist in high voltage electrical engineering and design, announced the acquisition of Skanstec. The Skanstec shareholders and management team are remaining in the business and will be reinvesting a material portion of their proceeds into the enlarged H&MV / Skanstec group (the "Group"). The combination of H&MV and Skanstec creates a leading global provider of specialist design, engineering and construction services with revenues of c. €400m and close to 1,000 employees.

SHORLA ONCOLOGY TRANSFORM CANCER TREATMENT

In December, Questum based Shorla Oncology announced the commercial launch of JYLAMVO (methotrexate) oral solution, the first and only oral methotrexate solution approved in the US for use in adults. This is Shorla Oncology's second commercial product on the market in the US.

In January, Shorla Oncology announced the FDA filing acceptance of the new drug application for the novel formulation to treat breast and ovarian cancer. This innovative drug is a ready-to-dilute form of treatment for adenocarcinoma of the breast or ovary and will offer hospital pharmacies and patients access to a differentiated, ready to administer, injectable product.

Picture: Sharon Cunningham CEO and Co-Founder and Orlaith Ryan, CTO and Co-Founder of Shorla Oncology.





MAVARICK

Mavarick, a technology company that helps manufacturers balance productivity and sustainability, clinched the prestigious Overall Winner title at the Intertrade Ireland Seedcorn competition held at Clontarf Castle in November. Founded by alumni from New Frontiers 2023, Mavarick also secured the Sustainability/Low Carbon award, setting a record as the biggest prize winner in the competition's history.

The company has since expanded its reach by entering the German market, securing a multi-site agreement with a leading German automotive OEM. Mavarick is currently hiring for a number of positions in Limerick. If you are passionate about helping manufacturers become more sustainable then check out the current open roles at <https://mavarick.ai/career/>.



SIDERO ACQUIRED BY HITACHI SUBSIDIARY

Sidero, a software and cloud service company founded in TUS's MIRC in 2013 by Oliver Heaney, John Mee, Kevin Rice and Santanu Mazumdar, reported turnover of €16.2m in 2022 and in 2023 employed c. 150 people in Athlone and at another base in Newry. It is a testament to the quality of Sidero's offering that many international companies in financial services, telecoms and utilities trust it with their mission-critical systems and software development. In July 2023, Sidero, having grown to become the largest privately-owned indigenous software business in Ireland, was acquired by American digital engineering group GlobalLogic. Sidero will continue to operate with its existing leadership and staff as a wholly owned subsidiary of GlobalLogic.



PARK LIFE ENTREPRENEUR TELLS DRAGONS: 'I'M OUT'

In February, Richard Marles, a participant entrepreneur on New Frontiers 2020 whose Athlone-based healthy dog treats company Park Life turns over more than €1m in annual revenue, appeared on BBC One's Dragon's Den alongside Labrador Penny, asking for €150,000 for a 5% stake in the business. Park Life has recently signed a deal with Disney for a European licence to make dog and cat treats with the Disney branding. Following an intense session in the Den, Richard received offers from both Peter Jones and Touker Suleyman – but ultimately decided to turn them down as he felt the stake they wanted in the company was too big given the strength of his brand.

In March, Richard shared his entrepreneurial journey with the current New Frontiers cohort.

PROGRAMME UPDATES

ESA SPACE SOLUTIONS IRELAND

Led by Tyndall National Institute, TUS is a partner in ESA Space Solutions Ireland along with Maynooth University, UCD and DCU. ESA SSI supports entrepreneurs and companies with innovative ideas that are either developing or using space technology and data – in partnership with the European Space Agency and Enterprise Ireland.

ESA SSI supports:

- Entrepreneurs, start-ups and early stage companies that are developing upstream (developing technologies for use in space) or downstream (using space-related technology or data to develop new or enhance existing terrestrial products/services/applications) space-related technology sectors. Such companies are supported through the ESA BIC Ireland initiative.
- Established companies that have either developed or have access to existing space technology and now want to conduct product development with a view to launching a new market application. Such companies are supported through the ESA Spark Funding initiative.

ESA Space Solutions Ireland operates Open Calls – so we're always open for applications. Contact Siobhan.Lee@TUS.ie



NEW FRONTIERS

New Frontiers is Enterprise Ireland's national entrepreneurial development programme for ambitious early-stage founders with innovative business ideas which have the potential to scale and provide employment. It provides the skills, support, and confidence needed to make the leap to starting a successful business.

TUS delivers New Frontiers in the Midlands in partnership with Maynooth University and in the Midwest in partnership with University of Limerick.

The programme has 3-phases:

Phase 1 – Supports individuals to test the feasibility of their business idea to arrive at a go/no decision. TUS's programmes offer this phase as a combined 5-6 week evening programme and 1-2 day bootcamp.

Phase 2 – Supports founders as they develop their business idea offering, wrapping around supports which include a tax-free education stipend of €15,000, training, mentoring, office space and a peer network.

Phase 3 - Those that complete phase 2 can compete for a place on the phase 3 programme that offers an additional €7,500 funding plus supports to help founders implement their business idea.

Finishing Phase 2 - Paul Byrnes of Mavarick shared that: "At the beginning of New Frontiers, I was the sole member of Mavarick. We now have three full-time and one part-time employees. New Frontiers has been instrumental in highlighting the areas that required additional skillsets to ensure the company could capitalize on early traction".

Don't choose to go it alone when there is a network available to support you. If you have an innovative business idea compete for your place on TUS's New Frontiers Programmes to avail of an array of supports from funding to training, mentoring, & peer support. With the support of New Frontiers, you will become aware of the grants, funding, competitions, other programmes & networks that are available to support you to succeed. For more information visit: <https://tus.ie/rdi/innovation-enterprise/public/>

STUDENT INC

The Student Inc. programme at TUS, in collaboration with its partners Munster Technological University (MTU), University of Limerick (UL), University College Cork (UCC), Atlantic Technological University (ATU), and Mary Immaculate College (MIC), had another successful year fostering student entrepreneurship in 2023. Funded by the Higher Education Authority (HEA) and supported by the local Enterprise Offices, Student Inc. provided students with a comprehensive package to develop their business ideas.

Participants received a €4,000 stipend, access to workshops, mentoring, and workspace in the TUS incubation centres, aligning with strategic educational and economic goals outlined in strategies such as the National Skills Strategy 2025 and the Enterprise White Paper 2022-2030.

The programme aims to enhance the entrepreneurial skills of students, preparing them to contribute innovatively to Ireland's economy and aligning with the HEA's emphasis on integrating educational experiences with enterprise opportunities. This initiative reflects TUS's commitment to practical, hands-on learning, which is crucial for nurturing future business leaders and innovators.

For anyone interested in the Student Inc. programme for 2024 or looking to engage further with this initiative, please contact Maria. OBrien@TUS.ie



EMPOWER

TUS and Mary Immaculate College (MIC) are excited to announce that applications are now open for the 2024 Empower Summer Camps in Limerick, Clare and Clonmel, Tipperary. These camps are designed to inspire and cultivate a culture of innovation, creativity, and entrepreneurship among secondary level students from diverse backgrounds in the Midwest region.

Since its inception in 2017, the Empower programme has engaged nearly 350 students, helping them develop critical skills in innovation, entrepreneurship, and STEM disciplines. The camps offer a hands-on learning environment where students can explore scientific and entrepreneurial thinking, problem-solving, and consider the implications of technologies such as AI.

The Empower Limerick & Clare camp will be held from June 18th to 21st, and the Empower Clonmel Tipperary camp from June 26th to 29th. Both camps promise four days of immersive activities, including workshops on project management, teamwork, and sustainable technology, all designed to prepare young people for a future where adaptability and innovation are key.

If you're a student, parent, or educator interested in this unique opportunity to develop the skills needed for tomorrow's world, please don't hesitate to apply. For more information and to apply, contact Maria.O'Brien@TUS.ie

KNOWLEDGE TRANSFER AND COMMERCIALISATION OFFICE

KT BOOST FUNDING FOR TUS'S KTCO

TUS has been awarded funding under Knowledge Transfer Ireland's €33.4m national KT Boost programme to fund our knowledge transfer activities over the next four years. The funding will ensure that TUS's Knowledge Transfer and Commercialisation Office has the staff, skills and resources to boost research commercialisation at TUS - supporting activities such as IP management, prospective licensing and the creation of TUS spin-outs.

POLYBO WINS AT THE PLOUGHING

PolyBo, a Commercialisation Fund Project at TUS's PRISM led by Dr Luke Geever and Dr Declan Colbert, which is developing a unique mineral bolus system for improved animal health, won the Best Research Emerging from 3rd Level at the Enterprise Ireland Innovation Arena Awards at the Ploughing Championships 2023.

Similar to a large tablet or capsule, a bolus is a device containing active agent(s), which when introduced into the stomach (specifically into the rumen) of an animal slowly releases (from a few hours to several months) the active ingredient. They are mainly used to treat ruminants (cattle, sheep, goats, etc.). PolyBo is developing an Innovative multi-purpose Controlled Release technology platform for Animal Health with multiple satellite applications and unique patentable formulations / processes.

TUS WORKS SEEKS RESEARCH INNOVATORS

TUS's KTCO is excited to announce a call for applications for this year's TUS Works Pre-Accelerator Programme which is funded as part of TUS-RISE with the HEA. Designed to nurture research-based innovation, TUS Works aims to empower researchers to transform their groundbreaking ideas into commercially viable products and businesses.

This programme is specially tailored for up to 10 ambitious researchers looking to leverage TUS's dynamic ecosystem of support, which includes mentorship from industry experts, access to state-of-the-art facilities, and a network of academic and commercial partners. By participating in TUS Works, researchers will receive the tools and guidance necessary to take their projects from the lab to the market, exploring the commercial potential of their innovations, learning how to navigate the complexities of business development and commercialisation processes.

TUS Works represents a unique opportunity for researchers to step into the role of entrepreneur. Researchers interested in applying for the TUS Works Pre-Accelerator Programme are encouraged to reach out for more details and register their interest. Please contact Maria.O'Brien@TUS.ie. Join us in driving innovation and transforming research into impactful business solutions at TUS!



TU RISE is co-financed by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27 and the Northern & Western Regional Programme 2021-27

TUS LEADS SUCCESSFUL ENTREPRENEURSHIP AND INNOVATION SKILLS DEVELOPMENT TRAINING FOR RUN-EU ALLIANCE

The Innovation and Enterprise Team recently spearheaded an impactful Entrepreneurship and Innovation Skills Development Training programme offering a Digital Badge award. Conducted in March and April 2024, the programme which was held online attracted over 60 participants from across the alliance, underscoring the growing interest and commitment to fostering entrepreneurial skills within the European academic community.

The programme focused on equipping researchers, students, and faculty members with essential skills to innovate and commercialise their research outcomes. The curriculum covered a range of topics from idea validation and market analysis to intellectual property rights and business model development. These sessions were designed not only to impart knowledge but also to stimulate practical, hands-on learning experiences through workshops and interactive discussions.

Feedback has been overwhelmingly positive, with many highlighting the clarity and relevance of the content presented, as well as the expertise of the TUS-led team in delivering complex concepts in an accessible manner. The success of this training programme exemplifies TUS's leadership in driving innovation education across Europe and its commitment to contributing valuable skills that support economic and social growth within the region.

For more information about future initiatives and to get involved in upcoming programme visit <https://run-eu.eu/>

NEW FRONTIERS MIDWEST END OF YEAR AWARDS 2023/2024

TUS 2024 Startup Awards Highlight Breakthrough AI Tech Tackling Cost of Living Through Innovative Bill Management

TUS was proud to announce the winners of the prestigious New Frontiers Midwest Startup Awards 2024, celebrating the spirit of innovation and entrepreneurship within the Irish startup ecosystem at a prestigious event in Limerick City Centre at the Engine on the 26th of March. The awards ceremony recognised outstanding achievements in the startup community, showcasing eleven of the brightest and most promising enterprises of the year.

While the innovations span various sectors, OneBill.ie by Adem Ergen, focusing on AI-powered bill management, clinched the overall winner title, spotlighting a significant advancement in easing financial burdens. This fintech innovation is set to redefine consumer experiences with bill payments and subscriptions, offering a seamless, automated solution to maximise financial efficiency.

The New Frontiers programme, supported by Enterprise Ireland, and run in the Midwest by TUS at the Hartnett Enterprise Acceleration Centre in collaboration with UL Nexus is a beacon for entrepreneurial development, providing a nurturing environment for startups. The programme facilitates a journey from idea incubation to market-ready innovation, emphasising the diverse potential of technology to impact various facets of life and industry.

OneBill Utilities stands out for its direct approach to mitigating financial stress, the awards also celebrated the ingenuity of Margaret Power's SiBark, named 'Best Innovation' for their pet security products and services, and highlighted Lindsay Moynagh of Wendor as 'One to Watch' reflecting its significant potential for growth and success. These recognitions demonstrate the diverse range of innovations among the award participants.

Paula Carroll, Enterprise Ireland New Frontiers National Programme Manager said, "The New Frontiers programme is a critically important element of Enterprise Ireland's Regional Strategy. It was launched in 2012 with the aim of accelerating the development of sustainable new businesses that have strong employment and growth potential, particularly in regional locations. Within the Midwest region (Limerick programme) over 600 budding entrepreneurs have received intensive support to develop and grow their businesses. This year's array of innovations reflects the dynamic, multifaceted and impactful nature of our entrepreneurial landscape."



Front Row Left to right: New Frontiers Award Winners Margret Power, Founder of SiBark, Adem Ergen founder of Onebill.ie, Lindsay Moynagh Founder of Wendor. Back Row left to right: Dan Murphy, Axis BIC, Gillian Barry TUS, Declan Fox Axis BIC, Paula Carroll Enterprise Ireland, Dr Liam Brown, TUS.

Professor Vincent Cunnane, President of TUS, echoed this sentiment, "The diversity and calibre of this year's entrepreneurs underscore the vital role of innovation in driving both economic and societal progress. Congratulations to all the entrepreneurs on the New Frontiers programme and to the winner this year, OneBill Utilities for its targeted approach to the pressing issue of cost management."

Supported by an array of sponsors and supporters, including Holmes, Bridgewater, LEO Limerick, Clare and Tipperary, Limerick Chamber Skillnet, Innovate Limerick, AxisBIC, entrepreneurs-in-residence Dick Meaney and John McNamara and patron John Hartnett and many guest speakers throughout the year, the awards underscore the collaborative effort in fostering an environment where technological solutions can thrive.

The TUS New Frontiers Midwest Startup Awards are more than a competition; it's a testament to the dynamic entrepreneurial spirit thriving within Ireland. "These awards highlight the creativity, determination, and innovation that define our startup community," said Professor Vincent Cunnane, President of TUS. "We're excited to celebrate the achievements of all these innovative participants who represent the future of Irish entrepreneurship."

TUS AND MTU FOSTER INNOVATION THROUGH COLLABORATIVE NEW FRONTIERS EVENT



On November 30, 2023, TUS and Munster Technological University (MTU) hosted a joint event under the New Frontiers programme, designed to foster innovation and entrepreneurship across Ireland. The event successfully brought together four cohorts of programme participants, introducing them to a broad spectrum of support services provided by Enterprise Ireland, including access to the Technology Gateway Managers and Cluster Managers who play crucial roles in guiding innovation and business growth.

The event highlighted the extensive network of Enterprise Ireland's Technology Gateway Network, which comprises 17 centres of research and development excellence. These centres are instrumental in connecting industry with the expertise of over 300 dedicated researchers equipped with specialised facilities and equipment. This initiative supports a diverse range of projects and businesses, from startups and SMEs to large multinationals, aiding more than 4,900 Irish companies since 2013 and facilitating over 7,700 innovation projects.

Three notable gateways were showcased during the day: Shannon ABC, the Applied Polymer Technologies Gateway (APT), and the Centre for Advanced Photonics and Process Analysis Gateway (CAPPA). Testimonials from business founders such as Edel Breslin of Oir Tonics and Mark Lyons of Hook Bio illustrated the practical benefits and the impactful assistance they received through service contracts, innovation vouchers, and other funding mechanisms facilitated by these gateways.

Additionally, Paul Byrnes, a New Frontiers alumni and co-founder of Mavarick, shared his experience with the New Frontiers programme. He highlighted how the programme helped him expand his network significantly, tapping into resources from the Local Enterprise Office, Axis BIC, Limerick Chamber of Commerce, and Accelerate Green, as well as how collaboration with the IDEAM Cluster led to substantial achievements including securing grants, winning the Startup Boost competition, and expanding his business activities into Germany.

This collaborative event underscored TUS and MTU's commitment to nurturing innovation and entrepreneurship, demonstrating the substantial support ecosystem available to Irish startups and entrepreneurs aiming to scale and succeed on the global stage.

OPPORTUNITIES AND CALLS TO ACTION

New Frontiers Midwest: Phase 2

Phase 1 "Test the Idea" Bootcamp Programme 28th & 29th June '24

Phase 2 "Develop the Business" 24th September '24 – 1st April '25

Details via www.HartnettCentre.ie

New Frontiers Midlands: Phase 2

Phase 1 "Test the Idea" Bootcamp Programme 11th June – 17th July 2024

Phase 2 "Develop the Business" 1st October 2024 – 26th March 2025

Details via www.tus.ie/rdi/innovation-enterprise/public/

TUS Works

Register your interest with Maria.Obrien@TUS.ie

Call details will be online soon via

<https://tus.ie/rdi/innovation-enterprise/researchers/>

Empower

Open call for registration for Empower

Contact Maria.Obrien@TUS.ie with any queries

Details via <https://tus.ie/rdi/innovation-enterprise/public/>

ESA Space Solutions Ireland

Always open calls: www.esaspacesolutions.ie

Contact Siobhan.Lee@TUS.ie

LEADERS@TUS SCHOLARSHIPS



LEADERS@TUS SCHOLARSHIPS CELEBRATE A DECADE OF PROVIDING SUPPORTS TO STUDENTS TO STAY IN EDUCATION.

Self-belief, hard work, and the right support structure is key to achieving your goals. That was the message from retired Rugby World Cup official, former Referee of the Year and Grand Slam winning captain Joy Neville to this year's Leaders@TUS Scholarship recipients.

"At some points in our lives when someone tells you, you can't achieve something, even if it comes from the best place in their heart, you have a choice. You can be one of two people – the person who takes that opinion and follows it, or the person who has self-belief, puts a good plan in place, and with a bit of luck achieves whatever they put their mind to. It hasn't always been easy, and it won't always be easy but that is life," said the former TUS employee and student Neville, who made history when named by World Rugby to officiate as a TMO at the Men's Rugby World Cup in France.

Joy Neville was special guest at the Leaders@TUS Scholarship 10th anniversary celebration this week, as 11 students were presented with their scholarships for the 2023 -2024 academic year at a special ceremony in the Millennium Theatre, Technological University of the Shannon, Moylish Campus on Monday (April 22, 2024).

A total of 150 students have been assisted with access to higher education at TUS through these scholarships since 2014, thanks to an investment of more than €1.4 million by companies from the regions and private individuals.

This year, the Leaders@TUS scholarship was expanded to the Athlone campus ensuring students at all TUS campuses could benefit from this unique support.

The objective of this academic scholarships is to support access to higher education, and help students overcome challenges to remaining in education.

During the ceremony students shared stories of resilience and determination as they continued their education with the support of these scholarships.

Congratulating the scholarship recipients and expressing pride in their achievements to date, Professor Vincent Cunnane, President of TUS, highlighted how these scholarships go beyond supporting the individual recipient.

"Leaders@TUS is a supportive partnership between TUS, businesses and the wider community that makes a huge difference to the lives of these determined, hardworking and talented

scholarship recipients and their families. The impact of these scholarships also reaches beyond the individual, with the long-term benefit of the Leaders@TUS scholarships also positively impacting the supporting companies, the community and indeed the local economy with highly employable, work ready graduates, who have already proven their determination to succeed," he said.

Dr Liam Brown, Vice President Research, Development, Innovation TUS, thanked the donors for their continuous support. "These scholarships make a meaningful difference to the lives of students, allowing them to focus on their studies, giving them the greatest chance of success. We are particularly thankful to the donors whose financial contributions make this programme possible. I would also like to thank the TUS staff and all involved including the schools that help to make this programme so successful."

Speaking at the Leaders@TUS presentation ceremony and 10 year celebration, scholarship recipient, Medical Technology student Farah Osman said, "This award really meant a lot to me; it gave me the opportunity to maximise class attendance and the energy to raise my grades by getting the motivation to focus on my study. This semester I have achieved higher grades than the previous semester which is all thanks to the Leaders@TUS scholarship and my sponsor. The scholarship also gave me a confidence and assurance about my future career opportunities."

Medical Technology student Caoimhe Hackett spoke about her positive experience of the Leaders@TUS scholarship programme.

"My overall sense from the beginning was that everybody wanted me to succeed and really wanted to get to know me as a person," she said, paying tribute to the sponsors, TUS, her fellow recipients and her supportive family.

Aaron Davern who is studying Business Studies thanked the donors to the Leaders@TUS scholarship programme and TUS staff for their continuous support and mentoring. "This scholarship has helped to cut my four hour a day commute to a 10 minute walk, and helped me to perform the way that I knew I could as I have more energy to work and study."

Five new sponsors joined the Leaders@TUS programme this year, bringing to 48 the number of businesses and individuals who have supported these scholarships since 2014.



REGIONAL UNIVERSITY NETWORK EUROPEAN UNIVERSITY 2.0

TUS becomes the first Irish University to lead a European University Alliance funded under the EACEA Erasmus call. The RUN-EU 2.0 project, spanning four years has secured €14.4 million from the European Commission's ERASMUS programme. The primary objective of RUN-EU is to revolutionise the competitiveness of Irish and European education, by creating a seamless pathway of mobility for staff and students fostering a culture of collaboration, as well as enhanced training, study and research opportunities. Through strategic collaborations with local government, industry and institutions such as local authorities, IDA Ireland, Fáilte Ireland and the Irish Bioeconomy Foundation, RUN-EU is poised to create, facilitate and strengthen regional development with a European-oriented focus. Currently, 12 Irish Universities are actively contributing to the broader EU Commission's ambitions of developing over 60 European universities by 2025. TUS is currently the only Irish university to lead an alliance.

For TUS, a regionally-focussed university located at Europe's Western Edge, this is a singular moment. RUN EU is a hugely significant achievement for the regions of Europe and a vote of confidence in the potential of our regions to lead and prosper. The expansion of RUN-EU is ultimately a reflection of this potential and a demonstration of regional strengths. RUN-EU Cycle 2 will build on the success of the first phase and represents a new direction for Ireland's leadership in European higher education as well as recognising the importance of balanced regional development in the EU's future. Internationalisation continues to be at the heart of our educational approach, as it provides opportunities for growth and learning and gives our student body a well-rounded, holistic educational experience. The addition of two strong European partner Universities – Howest from Belgium and the University of Burgos from Spain will bring further expertise to our European University, particularly in collaborative Research, Development and Innovation (RDI).

The inaugural meeting of the Regional University Network – European University (RUN-EU) 2.0 was held in TUS Moylish Campus, Limerick in January 2024 where TUS played host to the presidents of partner higher education institutions (HEI) from seven countries, including new members from Belgium and Spain. The presidents, led by Ireland's first president of a European University, TUS President Professor Vincent Cunnane, also met with Limerick City and County Council and other regional stakeholders, highlighting the importance and opportunity of the TUS leadership to the regions it serves. Drawing on the expertise of the alliance which is now in excess of 100,000 students and staff, RUN-EU will make a significant impact across the key societal challenges of the digital and green transitions along with social inclusion. The launch of RUN EU signifies a pivotal moment in the alliance's evolution as it transitions to its next phase.

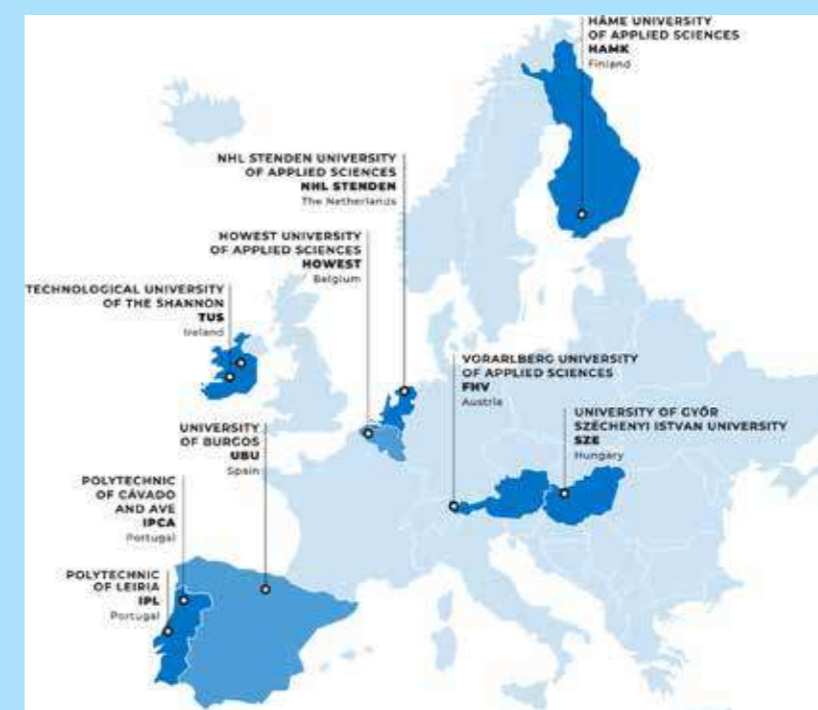
Established in 2020 under the European Universities Alliance and funded by ERASMUS, RUN-EU is a transnational alliance of higher education institutions working together to create a regional development-oriented European University that embodies the values of sustainability, multiculturalism, and inclusiveness in all its work. It also promotes European values and identity, as well as revolutionising the quality and competitiveness of European higher education. The education landscape across Europe is changing. As a flagship initiative, the European Universities Programme is central to the EU's ambitions to build a European Education and Research Area. RUN-EU will continue to be transformative for our students and our regions. We will promote and develop joint student-centred, challenge and work-based flexible learning activities, including Short Advanced Programmes, European Degrees up to PhD level and advance the European Research Area through collaborative and innovative inter-university and interregional approaches to higher education, research, development, innovation and engagement.

RUN EU MEMBERS

The participating HEIs in RUN-EU represent a broad range of different types of higher education institutions including Universities and Technological Universities, Polytechnic Institutes, and Universities of Applied Sciences, sharing a common background in successful collaboration with industry and regional stakeholders in applied education and research projects, inducing societal impact and transformation. The alliance members have a regional as opposed to a capital city focus and have a proven track record in the delivery of future and advanced skills activities in teaching, learning, research, innovation, engagement, and service to society relevant to global societal challenges including the digital and green transition agendas along with socio-economic challenges including sustainable development, ageing population, and social inclusion.

Member Universities:

- **Technological University of the Shannon, Ireland (Co-Ordinator)**
- **Polytechnic of Leiria, Portugal (Co Co-Ordinator)**
- **Polytechnic of Cávado and Ave, Portugal**
- **NHL Stenden University of Applied Sciences, The Netherlands**
- **Vorarlberg University of Applied Sciences, Austria**
- **University of Burgos, Spain (new to RUN-EU 2.0)**
- **Howest University of Applied Sciences, Belgium (new to RUN-EU 2.0)**
- **Häme University of Applied Sciences, Finland**



RUN-EU PLUS

TUS is also leading in the Horizon 2020 RUN-EU PLUS (Professional Research Programmes for Business and Society): RUN-EU PLUS is developing professional practice-based research master's and doctoral programmes for business and society and participation has facilitated the collaborative transnational research degree provision and enabled the development of collaborative programmes involving TUS and other RUN-EU partners. OUR RUN-EU PLUS overall strategic objectives align strongly with the TUS overall strategy to provide a 'leading student-centred higher education that is research-informed, regionally relevant and accessible to all'.

RUN-EU PLUS Strategic Objectives

- Implementation of a common R&I agenda and associated collaborative action plan focussed on the strengthening of academic-business partnerships in R&I.
- Delivery of joint and collaborative accredited professional practice-based research degree programmes at both master's and Doctoral level in association with industry, business and societal stakeholders.
- Development and implementation strategies which strengthen the capacity of the human capital through the development of a collective and collaborative cloud of knowledge portal, to equip researchers with a combination of pedagogical and research skills and a research career evaluation system to reward researchers and research excellence at all career development stages.
- Mainstream Open Science practices and skills within the RUN-EU R&I platforms, through the delivery and adoption of new and innovative programmes and initiatives across the alliance aimed at further strengthening RUN-EU commitment to open science principles.
- Reinforcement of cooperation in R&I activities across and between alliance members and their associated industry, business and societal stakeholders and partners.
- Contribution to the development of the ERA Hubs by fostering joint R&I activities across the RUN-EU alliance.

TUS HOSTS LEADING GLOBAL EUROPEAN INNOVATION HUB FORUM

The Technological University of the Shannon (TUS) hosted the second 'Regional Economy and Society Forum on Circular Economy' this week in partnership with Westmeath County Council and the Regional University Network European University (RUN-EU). The two-day collaborative event was the final conference of the wider 'Science Meets Regions – Circular Economy Forum Series' that has been replicated across three European higher education locations, including the University of Gyor – Széchenyi István University, Hungary and the Polytechnic of Cávado and Ave, Portugal. The series interlinks with the global forum and builds upon the primary focus areas of the RUN-EU European Innovation Hubs: Future and Sustainable Industries, Bioeconomy and Social Innovation.

The core aim of the conference was to influence change on a regional, national and European level by informing policymakers, attracting, retaining, and promoting top talent while developing solid relationships within enterprise, society and government.

President of TUS, Professor Vincent Cunnane, who launched the forum, said, "The RUN-EU European Innovation Hubs are key interregional networks, which harness academic expertise and infrastructure. Building on the priorities of the TUS strategic plan, we will drive the sustainable development of our region while supporting the circular economy and leading the next generation in innovative research."

Minister of State for Land Use and Biodiversity, Senator Pippa Hackett, emphasised the potential of the collaboration, saying, "You are all, in your regions, solving real-world problems to help people. By working together, you are playing to each region's strengths, complementing each other and integrating your approaches. You are decreasing risk and increasing opportunities. While the reach widens to include each RUN-EU region, you are doing something simultaneously contradictory; you are ensuring local impact."

As regional development is at the heart of the forum, Chief Executive Officer of Westmeath County Council, Dr Pat Gallagher, continued, "Westmeath County Council is delighted to partner with TUS Athlone and RUN-EU in hosting this important conference in Athlone with support from the EU's 'Science Meets Regions' programme. Athlone, in the centre of Ireland, is ideally placed to showcase a wide range of initiatives underway in the Midlands region to promote the Circular Economy, Sustainability, Innovation and Digitalisation. We welcomed all participants to the conference for the interesting programme and an enjoyable visit."

Her Excellency Raili Lahnalampi, Ambassador of Finland to Ireland, reinforced the need for widespread dynamic collaboration by noting, "Circular economy is better for the planet and an economic opportunity for our societies. Cities and regions can be catalysts for the circular economy transition. Finland is not only the happiest country in the world but also a forerunner in the circular economy, digital solutions and social innovations. We look forward to working with our European partners and at a global level in making science work."

The forum's key speakers represented leading industry, government and non-government agencies, including Enterprise Ireland, the Department of Agriculture, Food and the Marine, TUS Innovation and Enterprise, Limerick City and County, Cycling without Age and the Irish Bioeconomy Foundation. The RUN-EU Regional Economy and Society Forum on Circular Economy concluded by reinforcing the need to build resilience within the region, further leveraging the support and infrastructure of local amenities to develop an innovative and engaged ecosystem.

For more information on the RUN-EU programme and the Circular Economy Series, please visit: www.RUN-EU.eu



L-R: President of the Technological University of the Shannon, Professor Vincent Cunnane, Her Excellency Raili Lahnalampi, Ambassador of Finland to Ireland, Minister of State for Land Use and Biodiversity, Senator Pippa Hackett and Chief Executive Officer of Westmeath County Council, Dr Pat Gallagher.

STUDENTS SPARK CHANGE: TUS LEADING THE WAY IN SUSTAINABLE GLOBAL MARKETING

This week, the Technological University of the Shannon (TUS) hosted a unique international collaborative programme aimed at enhancing students' understanding and awareness of sustainable marketing in global digital marketing practices. Developed in partnership with Dutch university NHL Stenden, the initiative drew participants from 14 different nationalities representing eight leading European universities. It was motivated by the imperative to instill in students an appreciation for ethical and sustainable approaches to marketing that positively impact the planet, society and economic prosperity.

Under the guidance of Louise Murray and Sinéad O'Connell from the Faculty of Business & Hospitality, students honed their skills to enhance regional competitiveness and address existing disparities within local development across Ireland and the EU. Louise Murray, course leader and senior lecturer expressed pride in the success of the initiative stating, "Creating this new and exciting programme that blazes a trail for cross-country delivery of active learning in the areas of marketing strategy and sustainable marketing compliments the development of the live digital marketing projects that have been a cornerstone of our work at both undergrad and master's level in the Faculty of Business & Hospitality at TUS for the last six years."

A standout feature of the programme was the development of a sustainable digital marketing campaign for Offaly-based global brand Choose Plastic Free Wipes.

Founder Tom Doyle said, "It is such a great opportunity for me, as an entrepreneur based in the Midlands, to have access to the expertise in TUS and more importantly, to have access to an extended European network of Universities through RUN-EU. We are really excited to work on this applied, sustainable project with students, whose marketing strategy insight and skills we are hoping will help grow our baby wipes brand Choose Plastic Free Wipes in our main markets of Canada, the Middle East and Australia."

The programme's development team recognised the pivotal role marketing plays in fostering social change towards sustainability and sought to delve deeper into this with students across the RUN-EU network.

The demand for graduates with not only digital proficiency but also a commitment to social responsibility and sustainability is on the rise across Ireland and Europe.

This programme aims to meet that demand by nurturing students who are not only skilled professionals but also conscientious members of their communities, dedicated to making a positive impact on both people and the planet.



TUS OPENS UP TRANS-EUROPEAN RESEARCH OPPORTUNITIES FOR IRISH BUSINESSES

The Technological University of the Shannon (TUS) is to provide Irish companies with the opportunity to work with trans-European research teams in the area of Engineering Digitalisation. The President of TUS Professor Vincent Cunnane signed a Joint Doctoral Programme in Digitalisation Engineering Memorandum of Agreement (MOA) in Portugal this week with Polytechnic of Leiria (IPL) and Polytechnic Institute of Cávado and Ave (IPCA), two of TUS's partner universities in RUN European University (RUN EU)*, at the RUN-EU President's meeting in IP Leiria Portugal this week.

This joint doctoral programme was developed as part of the RUN EU PLUS Horizon 2020 . RUN EU PLUS Horizon 2020 project and provides companies in the Midlands and Mid West regions the opportunity to work with trans-European research teams in the area of digitalisation.

Professor Cunnane, who will become the first ever Irish President of a European University when the next phase of RUN EU commences in January, told colleagues during a panel discussion on "Transits: Crossing Regions – Fostering Interregional Cooperation" that the "European University Alliance, RUN-EU, embodies the values of sustainability, multiculturalism and inclusiveness in all its work. The expansion of RUN-EU is ultimately a reflection of this potential and a demonstration of regional strengths."

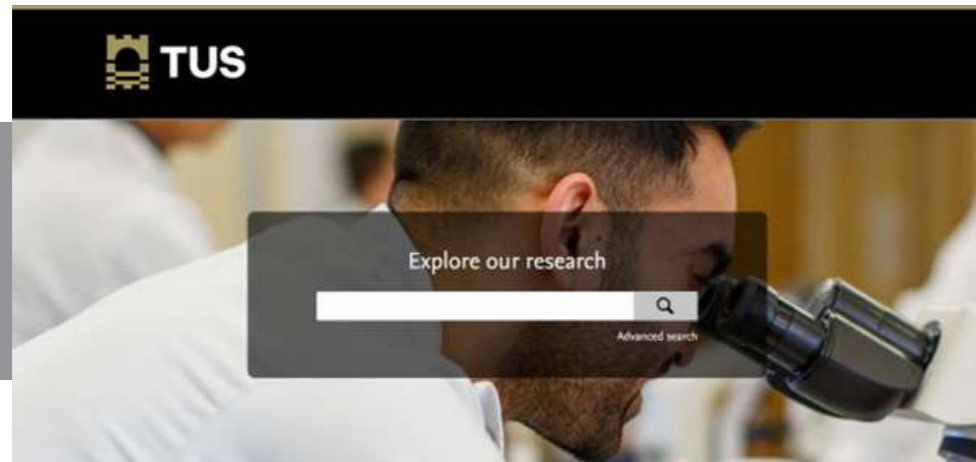
Vice President Research, Development & Innovation Dr Liam Brown congratulated the team that developed the joint doctoral programme said, "This programme promotes European values and identity as well as revolutionising the quality and competitiveness of European higher education, research, development and innovation"

RUN-EU PLUS Project Manager & Co-ordinator Dr Siobhán Moane explained, "This programme was developed as part of the RUN EU PLUS Horizon 2020 swafs project by the RUN European University and provides companies with the opportunity to work with trans-European research teams in the area of Digitalisation"

TUS Head of Research and RUN-EU Co-ordinator Dr Paudie Murray added, "Collaborative RDI projects across the RUN-EU alliance, are making a significant societal impact to the digital and green transformation agendas along with social inclusion"



RESEARCH SUPPORT SERVICES



Upon designation as a Technological University, a strategic management decision was made to make the Implementation of a Current Research Information Management System (CRIS/RIMS) a priority. Funding was sought and awarded for the purchase of a suitable system under the Technological University Transformation Fund, and Elsevier's PURE solution was selected from the national tender framework. The implementation of PURE in TUS will allow the collection and storage of quality metadata on research activities, researchers, and outputs such as; publications, artefacts, datasets, and patents; grants and projects; academic service and honours; and media reports in a single integrated IT research ecosystem. The public facing aspect of PURE (the portal), will increase visibility of all research activity within TUS. PURE will support the key reporting metrics as established by the Technological Universities Act (2018) as well as enabling reporting on an extended range of research outputs. The project will play a key role in enabling TUS to achieve the national goal of 100% open access to research publications by 2030, as outlined in the National Action Plan for Open Research 2022 – 2030. It will also facilitate the capturing and reporting of additional research activity, such as editorial work, conference hosting, peer-reviewing to name but a few. Noted in several places in Impact 2030 is the need for capturing outputs, impact and metrics that fall outside of the traditional publication and citation data used for evaluation, PURE will facilitate this need.

Work commenced on this project in 2023 and we are pleased to announce that phase one of the project, the TUS PURE portal and Researcher Profiles went live on April 25th, 2024 and can be viewed at <https://research.tus.ie>. Integration with the HR system allowed for creation of research active staff profiles in PURE. Staff profiles were linked to external sources where available (e.g. Scopus, SciVal, ORCID) allowing for a centralised, interoperable researcher profile. A series of user guides are available to assist with further expanding your TUS profile, and workshops/guidance can be requested at any stage. Similarly, integration with the Student Record System will result in research student profiles, also linked with the external sources listed above and establishing the staff/student supervisory relationship(s) in PURE. This phase of the project is expected to start shortly with student research profiles in place for Semester one 2024/2025. Integration capabilities was key to choosing PURE as TUS's Research information system, creating, and populating both staff and student records from reliable systems and reducing re-entry of data, minimising the possibility of errors, and ensuring data reliability. PURE also allows for cataloguing of equipment, we will work with our researchers to source data on all TUS equipment you would like made available on the portal. Having your equipment catalogued in PURE, not only allows for a web presence on the portal, but you can link equipment to outputs and awards, highlighting their impact.

Over the coming months the library will transition from using Research@THEA as the TUS Institutional Repository to PURE. Again, allowing a single point of entry for all research related activity, with the added benefit of both statistical information and reporting capabilities. The final phase of the PURE project rollout plan is Award/Grant Management. It is expected this phase will commence in Semester one 2024/25, and more information on this phase will follow in due course. To find out more about PURE, please contact Tania.Marsh@tus.ie

SPRINGER NATURE LATEST PUBLISHER ADDED TO IREL TRANSFORMATIVE AGREEMENTS

In 2023 TUS Library announced that, as part of a phased onboarding to membership of Irel (purchasing consortium of Irish research libraries), TUS academics and researchers can access a range of new Open Access Publishing routes through APCs (Article Processing Charges). These deals are called Transformative Agreements as the Library subscriptions are used, not just for accessing the journal content, but also for publishing. This means that TUS researchers can publish 'Open Access' without additional costs by using these APCs.

In January 2024 Springer Nature was the latest to be added to the list of publishers of which APCs are available to publish Gold Open Access. APCs are also available for Oxford University Press, SAGE Journals, Taylor & Francis, Wiley and Cambridge University Press, as well as ScienceDirect. Funding for 2023 and 2024 Irel resources comes from the national NTUTORR scheme under Stream 3: Digital Ecosystems. Journal subscription (full read text) for eight new databases were also added in 2023 and are now available to all staff and students. This provides the TUS community with access to millions of additional journal articles and resources. You can access the databases via the Library Websites (Midlands and Midwest).

If you have any queries, please contact maeve.hynes@tus.ie or have a look at this libguide. If you would like a dedicated session for your research centre, team or group or a 1:1 on considering your publication strategy and open access options for you, please also get in touch. These sessions can also include other options for Open Access publications through the institutional repository - Green Open Access.

TUS LIBRARY INFORMATION SERIES FOR POSTGRADUATES & RESEARCHERS

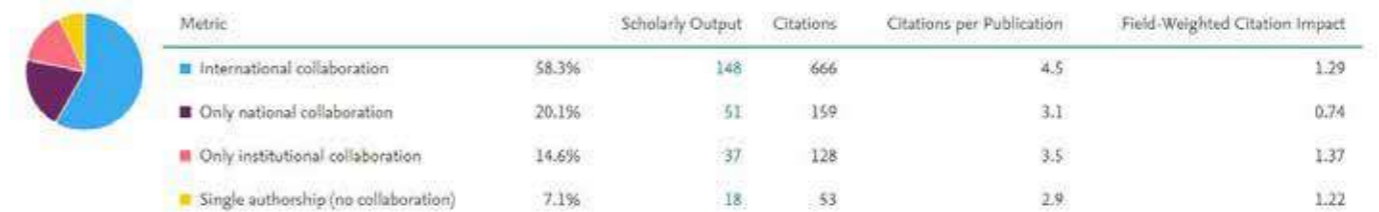
Semester 1 2023/2024 saw the Library hosting a series of information webinars specifically aimed at postgraduate students and researchers. Topics covered included ORCID IDs, conducting a literature review, open access publishing, navigating journal selection and more. The sessions were held online and recordings of them can be found here.

A further round of information sessions is planned for March 2024 – details can be found on the Library websites. If you are new to research or have any areas you would like covered or explained in a bit more detail, please contact the maeve.hynes@tus.ie to organise a dedicated session for your research centre, team or group or a 1:1.

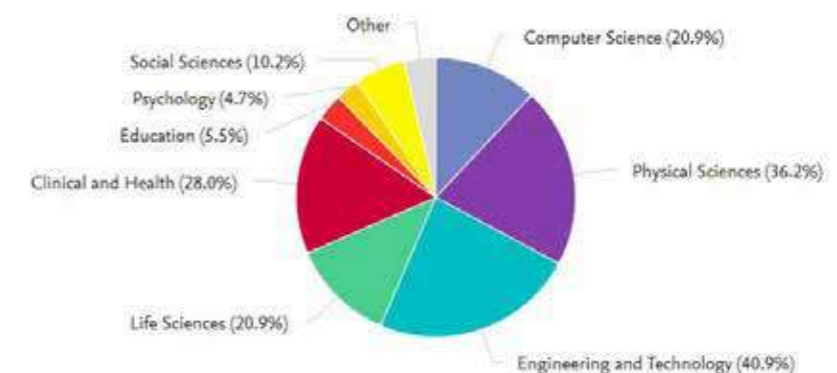
In data obtained from SciVal, for the academic year 2022/2023, TUS reported 254 peer-reviewed publications, an increase of 14.4% on the previous year.



These publications involved 962 authors, from 296 institutions, with over 58% of those international collaborative partners. The TUS Strategic Plan emphasises the importance of international partnerships and collaborations and our research profile indicates a strong foundation to build on.



The piechart below illustrates publication share per Subject Area (Times Higher Education subject classification scheme), with our five key areas of strength reflective of our research activity in each subject area.





BREAKING BOUNDARIES: TUS RESEARCH WEEK HIGHLIGHTS COMMUNITY IMPACT AND ACADEMIC EXCELLENCE

In an era marked by rapid technological advancements, the Technological University of the Shannon reaffirmed its commitment to driving positive change, by spotlighting the significant impact of its research and innovation projects both regionally and beyond

Now in its second year, the ethos of TUS Research Week is to highlight the A-Z of research activities taking place across its six campuses in Moylish, Clare St, Athlone, Clonmel, Thurles and Ennis. Vice President for Research, Development and Innovation Dr Liam Brown said, "Research Week serves as a cornerstone of the academic calendar at TUS. It provides an unparalleled opportunity for staff, students and the public to delve into the impact of TUS research. The events serve as a gateway to engage with the ground breaking contributions shaping our collective future. If you are interested in the digital or green transitions, social inclusion or a myriad of other important societal topics with free and open access for all, we invite everyone to take part in this yearly dynamic exploration of knowledge and innovation."

With an unwavering focus on excellence, TUS staff and students have continually pioneered ground breaking solutions that address pressing challenges through sustainable projects such as 'DigiWind', which aims to revolutionise renewable energy education. In addition to student-led research focusing on the sustainability and durability of materials produced in the harsh conditions of space, which recently saw success during the Irish Research Council awards. Last year, TUS received over €20 million in research funding.

Throughout the week, events focused on green and digital transitions, how to begin your research journey, student research perspectives and beyond. Growing year on year, almost 2500 attendees took part in 49 events, an increase of 115% in comparison to 2023.

Award winners included 'Professor Neil Rowan for his 'Outstanding Contribution to Research in TUS', PhD student Jeovan Araujo for 'Best Overall Research Impact' and 'Thesis in 3' winner Katie Shiels.

Through collaborative partnerships and a relentless pursuit of excellence, TUS is poised to lead the way in addressing the complex challenges of the 21st century.



Dr Michael Jnr Hopkins (Ross Polymer Services) Dr Romina Pezzoli, Dr Liam Brown and Prof. Vincent Cunnane speaking about their journey navigating the research landscape.



PhD student, Henrique Da Silva Pereira presenting his research during the Postgraduate Student Research Impact Event



Dr Johanna Archbold presenting the 'Best Design Impact Award' to PhD student Sheila Plunkett



Dr Liam Brown presenting the 'Best Overall Impact Award' to PhD student Jeovan Araujo



Captivated by an engaging presentation Research Week attendees beaming with smiles.



Winner of the inaugural Research Week, Outstanding Contribution to Research in TUS, Prof. Neil Rowan

RESEARCH WEEK IN NUMBERS

2465 ATTENDEES • 48 EVENTS
INCLUDING 14 POSTGRADUATE LED SESSIONS
53 POSTGRADUATE RESEARCH SUBMISSIONS
9 AWARDS • 4 RESEARCH THEMES

1 TECHNOLOGICAL UNIVERSITY



RESEARCH IMAGE COMPETITION

WINNERS 2024



Undergraduate Winner - Aoife O' Shea (First year art and design) **Yoga Mat**

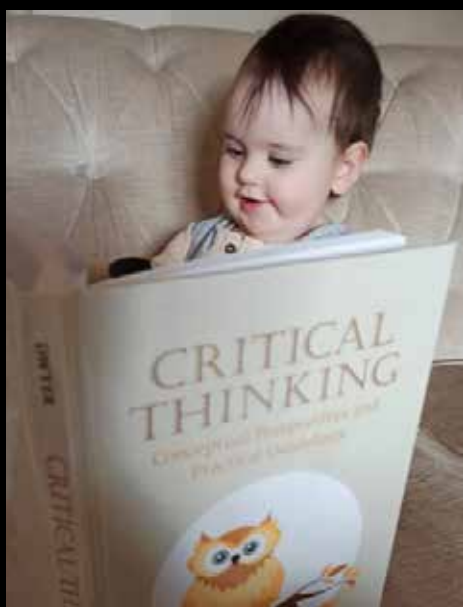
My image is a depiction of my yoga mat. For a project, I am exploring the movement of yoga and I decided to recreate my mat through a tool making workshop.

The original mat is covered in a pattern of triangles but I wanted to change the pattern to circles to portray the natural flow of moving in yoga. I took a picture of the finished work and edited the picture, to create multiples of it in one image. It creates a great sense of movement in the work, due to so much going on in it. It has helped me to explore my project well, as I have recreated it physically, as a yoga mat for a sculpture piece.



Postgraduate Research Winner - Jeovan Araujo **Planetary Milled Gems**

These stupendous, rustic pearl-like spheres covered with corroded steel added a sprinkle of magnificence to Jeovan Araujo's attempt to break down plastic waste, creating a highly unique and rather unexpected results. As part of his PhD research at TUS, Jeovan works with a planetary ball mill, a powerful mechanochemical tool that has emerged to enable the development of approaches to solvent-free reactions, which not only can be simpler, but faster and cleaner than conventional routes. In his work, Jeovan is trying to degrade synthetic polymer polyester—one of the most widely used plastics in the world, especially in clothing and packaging. In one of these attempts, he used a planetary ball mill at a high rotational speed which helps to break down the polymer chains of the polyester plastic. Typically, mechanochemical degradation results in monomers or small-molecule building blocks to achieve chemical recycling of such synthetic plastics, but in this case, Jeovan also observed the formation of a metallic sludge, possibly due to the chemical corrosion of the steel balls during the grinding operation—which gave the resulting product a distinctive metallic effect covering the surface of the planetary milled spheres.



Staff Winner - Christopher Dwyer **The Importance of Learning to Think Critically**

Here we see Mara Dwyer engaging critical thinking (CT) – doing so early in life! CT has long been a desired outcome of education, given its association with better understanding, decision-making and academic achievement. Research indicates that CT can be enhanced through explicit instruction – transcending educational settings into real-world scenarios where good decision-making and problem-solving are needed on a daily basis. However, a lack of CT is a concern, not just for students, but across populations in light of growing political, economic, social, and health-related concerns (e.g. 'fake news'; increasing gaps between political views of the general population; the COVID-19 pandemic). Indeed, there are many barriers to CT that require consideration, such as epistemological misunderstanding, over-reliance on experience and intuitive judgment, as well as the negative impacts of bias and emotion. Access to CT education, like Mara has here, is vital for overcoming such barriers to good thinking and decision-making.