

NORTH SOUTH RESEARCH PROGRAMME

ALL ISLAND COLLABORATION IN RESEARCH,
ENGAGEMENT AND IMPACT



**CLÁR TAIGHDE
THUAIDH THEAS
NORTH SOUTH
RESEARCH
PROGRAMME**

HEA | AN tÚDARÁS um ARD-OIDEACHAS
HIGHER EDUCATION AUTHORITY

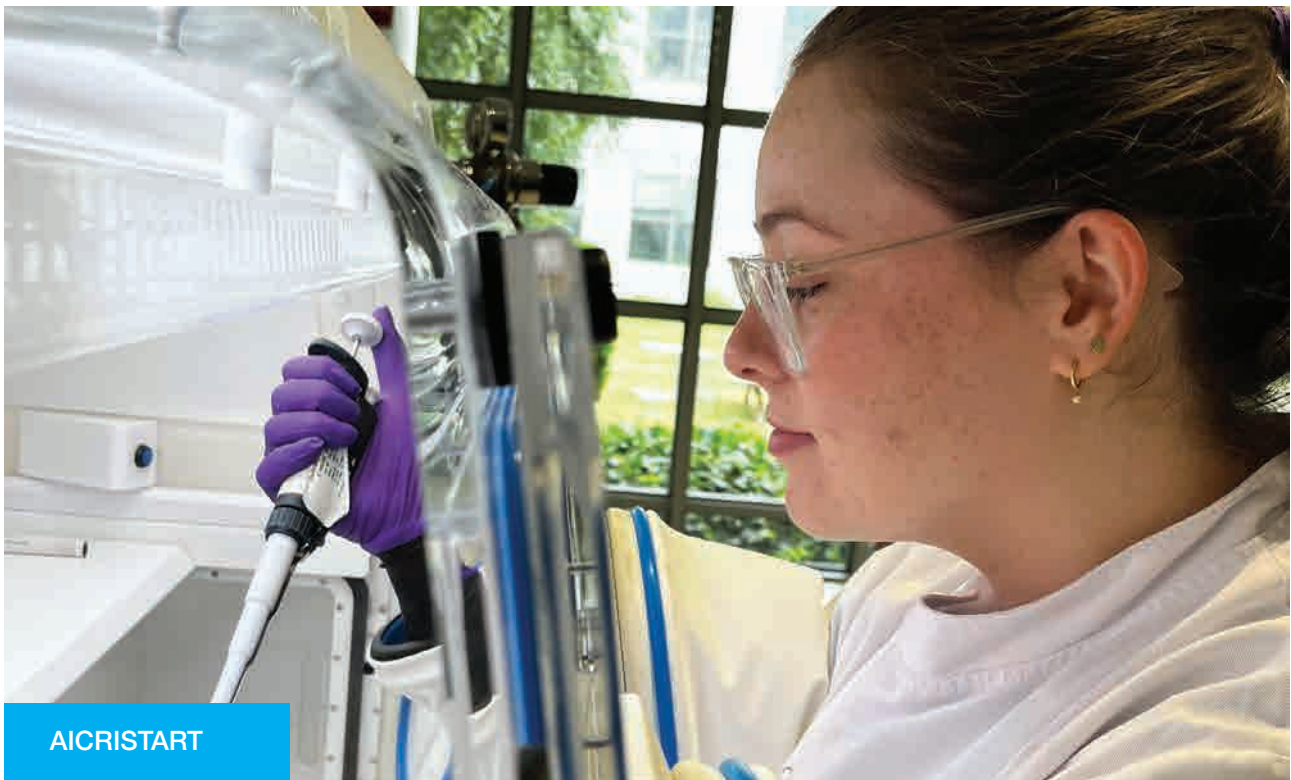


Rialtas na hÉireann
Government of Ireland

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Introduction

This is the first North South Research Programme (NSRP) promotional booklet designed in advance of the 2024 Inaugural Conference. It provides programme insights, a snapshot of some of the projects funded under Call 1 of the programme and their impact up to 31st December 2023.

The NSRP is a collaborative scheme fostering links between researchers and higher education institutions across the island of Ireland and deepening cooperations with community partners, industry and not for profit organisations. Delivered by the Higher Education Authority (HEA) on behalf of the Department of Further and Higher Education, Research Innovation and Science (DFHERIS) and supported by the Government of Ireland funding through the Shared Island Unit, this programme is underpinned by the principles of the Good Friday Agreement.

In 2021, an initial allocation of €40 million was designated for the programme, was supplemented by an additional €5.6 million from the HEA. Building on its successful first funding call, an additional €10 million was announced by the Shared Island Unit in December 2022, bringing the total value of funding dedicated to the programme to €55.6 million. Following completion of the first funding call in 2021, €37.28m was approved for delivery across 62 projects which will engage approximately 500 research team members across a wide range of disciplines over their duration. These projects have been funded under three strands: 'Strand I: Bilateral Researcher to Researcher', 'Strand II: Emerging Hubs of Excellence', and 'Strand III: Partnerships of Scale'.

This significant investment is helping to deepen links between higher education institutions, researchers and research communities on the island of Ireland and is strengthening the delivery of all-island approaches to research and innovation.

The Key Principles of The North South Research Programme

Strengthen

Enhance

Promote

Contribute

Strengthen research, innovation, development and collaboration in and between individuals and higher institutions and community partners by rewarding innovation and excellence, thereby enhancing the higher education sector, in Ireland and Northern Ireland.

Enhance the research, teaching and learning output in higher education institutions.

Promote networks of excellence and partnerships of scale for research, innovation and development.

Contribute to policy development relevant to the Shared Island initiative and benefit enterprise and communities, throughout Ireland. Contribute to capacity building, place-making/innovation districts.

Stories of Impact

Research impact is not just about data—it is about real stories illustrating how research impacts on lives, our environment and economy. NSRP projects span a wide range of disciplines and are having significant impact. Take, for example, the **IYCF-E-Ire** (*Developing an Infant and Young Child Feeding in Emergencies Preparedness Plan for the island of Ireland*) project funded under Strand I of the 2021 call. This project is crafting a preparedness plan for infant and young child feeding in emergencies. By interviewing healthcare professionals, volunteers, and parents, the project aims to address a potential lack of support networks and legal frameworks, ensuring that families are better prepared for crises.

Another example a project generating impact is the **WoBLa** (*Women of the Borderlands: A Walking Biographical Study of Women's Everyday Life on the UK/Irish Border*) project, which sheds light on the experiences of women living near the border. This project uses walking as a biographical method, where women lead the researchers on walks that trace their routine border crossings. This approach allows the project to explore how lives were influenced by living along the Ireland/Northern Ireland border. Through mobile interviews and mapping exercises, researchers have documented how the border impacts women's daily lives, from accessing healthcare to encountering gender-based violence. These insights will contribute to informing policies that will better support women in these communities.



Project WoBLa



Project Bordex

Impacting on Lives and Environments Across the Island

In cancer research, the **AICRIstart** (*A Foundation Stone for the All-Island Cancer Research Institute: Building Critical Mass in Precision Cancer Medicine*) project is establishing an all-island network for precision cancer medicine, bringing together scientists to advance treatment and care.

In the area of mental health, projects such as **I-SWAP** (*Irish Student Wellbeing and ADHD Project*) and **AIM4HEALTH** (*Artificial Intelligence approaches to addressing Mental Health inequalities in Ireland through improved diet and lifestyle*) are supporting mental wellbeing and contributing to healthier communities on the island. **I-SWAP** is addressing the challenges faced by college students with ADHD, enhancing understanding, developing interventions, and identifying biological markers to help to their wellbeing. **AIM4HEALTH** focuses on older adults, identifying risk factors and using data analytics to create targeted interventions.

The NSRP also facilitates research into areas like environmental sustainability, through projects like **CREDA** (*Coupling CRISPR-Cas environmental DNA assays with lateral flow for rapid on-site detection of species of conservation management concern on the island of Ireland*), which uses innovative CRISPR-Cas technology to protect native fish species and manage invasive ones. CREDA is showing how cutting-edge science can address ecological concerns.

Collaborative Progress

NSRP's strength as a programme lies in how it enables a collaborative approach, connecting researchers from partnering institutions and disciplines to tackle common goals and to explore the production of new knowledge together. The *All-Ireland Centre of Excellence in Economics, History, and Policy (AICEEHP)*, for instance, is examining the historical and economic impacts of infrastructure such as railways, informing contemporary policy debates and benefiting enterprises and communities across the island.

These projects, among many others, reflect how the NSRP is fostering sustainable research and innovation. By fostering connections and promoting excellence in research, the programme is contributing to making a tangible difference in people's lives on the island.

The North South Research Programme stands as a testament to the potential of collaboration to drive progress and enhance the shared future of communities throughout Ireland. Through these stories of impact, we see how research can inspire, contribute to change and improve the quality of life for all.



Project AICEEHP team members

Statistical Insights

OVERVIEW OF CALL 1



Launched August

2021

367

applications



62

AWARDS

€37.28m

Strand I

Bilateral researcher

Strand II

Emerging Hubs of Excellence

Strand III

Partnerships of Scale

Max
2
years

Max
4
years

Max
2
years



Max
€0.2m



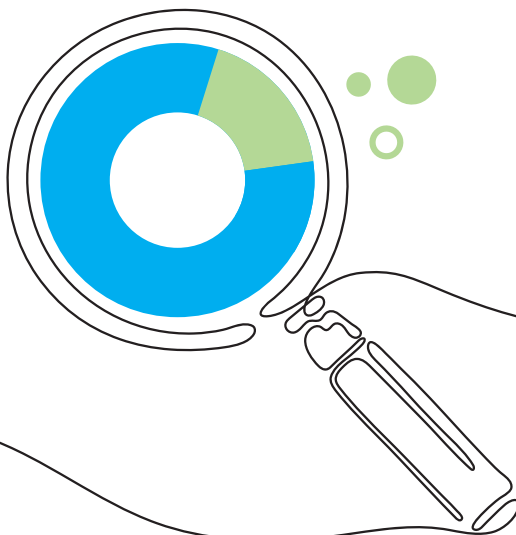
Max
4m



Max
4m

500

500 funded research team members under Call 1

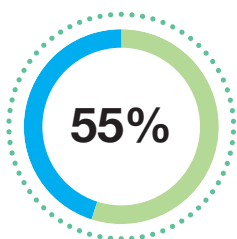


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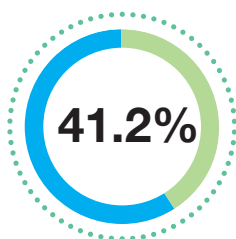
are research students

Figure 2

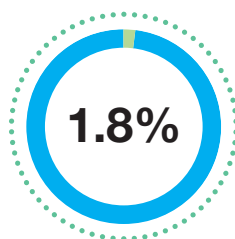
IMPACT



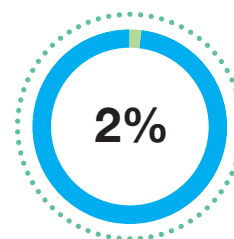
Women



Men



Non-Binary



Not Specified

456 Hired

IRE 59% | NI 41%

Research Team members hired under Call 1 as of 2023/24

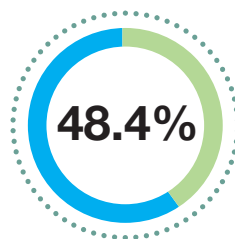
509 Expected

IRE 59.5% | NI 40.5%

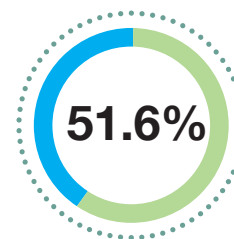
Research Team members expected to have been hired under Call 1 in 2023/24

Figure 3 | statistics reflect percentages of researchers who identify as Woman, Man, Non-Binary or who chose not to specify.

As of December 2023, team composition data, per gender and institution shows: 55% of hired research teams members identify as women, 41.2% as men, 1.8% as non-binary and 2% applicants did not specify how they identify. This split includes Lead Investigators who identify as:



60 Men



64 Women

Nurturing Talent and Early/Mid-Career Researcher Opportunities

Of the 500 research team members expected to be supported by the projects funded by Call 1, nearly half are early to mid-career researchers. This includes, research students, post-doctoral researchers, research fellows and research assistants.

As of the end of December 2023 the NSRP has provided opportunities and pathways for approximately 214 researchers in the early stages of their career with an anticipated hire of an additional 36 early career researchers over the remaining duration of Call I projects.



Figure 4 | Early/Mid-Year career: This category consists of PhD Students, Master's Students, Undergraduate Students, Research Assistants, Research Fellow/Individual Researchers and Post-Doctoral Researchers as of December 2023.

CASE STUDIES



NORTH SOUTH RESEARCH PROJECT THEMES



The North South Research Programme aims to strengthen research and collaboration between Higher Education Institutions and research communities across the island of Ireland. Funded projects support objectives across the Good Friday Agreement, Sustainable Development Goals, the National Development Plan 2040, and the Shared Island Initiative.

The 62 projects that were funded under Call One are diverse and wide-ranging in topics and scope. The projects can be categorised under 11 broad themes. This section discusses each of those themes and presents a project case study under each theme.

1 | CANCER RESEARCH

Multiple projects funded under the NSRP focused on vitally important cancer research. These include NeuVac, VitDoc, RadCol, Tracer, Oxi-Smart, eHealthHub, CLuB and AICRIStart.

These projects addressed areas such as vaccine development, investigative techniques for early cancer detection, enhancement of pre-existing technology, training opportunities, as well as the development of new or innovative treatments and technologies.

The aim is for the results, techniques, and technologies developed through these research projects to support future cancer research and contribute towards the fight against cancer.

AICRIstart

A FOUNDATION STONE FOR THE ALL-ISLAND CANCER RESEARCH INSTITUTE (AICRI): BUILDING CRITICAL MASS IN PRECISION CANCER MEDICINE

Lead Investigators - Professor William Gallagher, University College Dublin and Professor Mark Lawler, Queen's University Belfast

The All-Island Cancer Research Institute (AICRIStart) is testament to the benefits of collaboration and cooperation in cancer research, with actors involved including: UCD, University of Limerick, Ulster University, RCSI, TCD, UCC, QUB, TU Dublin, University of Galway, DCU, NCCP, Cancer Trials Ireland, Irish Cancer Society, NECRET, Trinity St. James's Cancer Institute, St. James's Hospital, Patrick G Johnston Centre for Cancer Research, North East Cancer Research & Education Trust, Cancer Trials Ireland.

AICRIStart's main aim is to provide a framework for cancer research and strengthen connections for cancer researchers across the island of Ireland. By doing so, researchers can pool together their collective knowledge and aid better treatment options, with the institute aiming, in turn, to become a globally recognised leader in cancer research. Since its formation, researchers have formed connections and combined efforts in cancer research across institutions. As well as this, the AICRI has provided researchers with a better understanding of how to get greater funding for their projects.

Included within AICRIstart is the AICRIStart programme which funds and trains 10 doctoral students and 10 post-doctoral fellows. AICRIStart has provided an opportunity to kickstart not only these researchers' careers, but is also contributing to a unique all-island network of collaboration and research, which will assist cancer research development across the island of Ireland.

2 | ENVIRONMENTAL SUSTAINABILITY

As the climate crisis develops, collaborative research provides an opportunity to investigate and provide sustainable solutions. This is reflected in the number of projects that focused on the environment and sustainability such as High-Green, VirtuGraze, CREDA, ÉireHemp, Spectator and Finifor.

These projects focused on a wide range of issues such as animal conservation, reducing air pollution, challenges to reforestation efforts, alternative food sources and the adoption of electric vehicles.

The common thread throughout all these projects is the creation and acceleration of knowledge to support policy, governmental and individual action, as well as assist in the reduction of the climate effects that are currently being felt today.

SPECTATOR

SUSTAINABLE, INTEGRATED, OPTIMISED ELECTRIFICATION AND AUTOMATION OF TRANSPORTATION NETWORKS

Lead Investigators: Associate Professor Bidisha Ghosh, Trinity College Dublin and Dr Salissou Moutari, Queen's University Belfast

Ireland has committed to halve transport-related carbon emissions by 2030 compared to 2018 and the transition to electric-based vehicles has been identified as a key ambition in reducing carbon emissions.

Spearheaded by the collaborating partnership at Trinity College Dublin and Queen's University Belfast, the Spectator project's objective was to create a design tool to facilitate Ireland's transition to an integrated electric transportation system across the island of Ireland. Within the project, researchers created open-source datasets for real-life driving traffic, online simulation tools to visualize mixed traffic, and an interactive map on the optimal locations for electric vehicle (EV) charging stations.

This research will provide insight into a systematic approach to the deployment of electric vehicles and connected and autonomous vehicles (CAVs), as well as bolster policies towards energy, transport, and road infrastructure plans. It aspires to put the island of Ireland at the forefront of transportation innovation, and has the potential to improve journey times, productivity, reliability, and provide safer transport services.

3 | RESOURCES FOR EDUCATION, PRACTICE AND POLICY

As set out in Impact 2030, Ireland's Research and Innovation Strategy, Ireland has an ambition to become a leader in research and innovation on the international stage. Nurturing and developing research talent is a key requirement in delivering this ambition.

These aims are encouraged in the projects Profess-12, COSHARE, SE, DelHPIre, Proper, DTCyber, Atlantic, Co-Decide and FCCC-EoLEd, which are all concerned with training and learning resources across several fields. These projects prioritise knowledge sharing and growth through the development of learning resources, frameworks and through cooperation between higher education institutions on the island. The identified projects designed and delivered summer schools, examined the usefulness of digital resources, and created online based learning tools.

DTCyber

Digital Twins in Cyber Physical Security

Lead Investigators: Dr Brian Lee, Technological University of the Shannon: Midlands Midwest and Dr Kieran McLaughlin, Queen's University Belfast

Our everyday lives are often dependent on computer-controlled hardware and/or equipment, known as cyber-physical systems (CPS). These systems are vulnerable to cyber-attacks, and there is often a question on how to defend these systems. One such solution is a Digital Twin (DT). A DT is a virtual version of a computer system which runs simulations to study cyber-attacks to anticipate the problems that they might have.

As it is an emerging field, key questions remain, such as understanding which CPS subsystem(s) would benefit from a DT. The fact that it is not practical to map a DT to the entire CPS infrastructure due to costs means that there are often gaps in the research which is where DTCyber, run by Technological University of the Shannon and Queen's University Belfast fits in.

This project's goal was to identify what requirements are needed for a DT to support cyber security, the potential cyber-security benefits of mapping a CPS subsystem to a DT, the subsystems which could be mapped to a DT, and which ones would be the most beneficial from a cyber-security perspective.

These emerging DT technologies present opportunities to conceivably improve cyber-attack monitoring and response solutions. For example, the research could help teams identify vulnerable areas before a system or update is even deployed. The research presented by DTCyber may help reduce the number of cyber and ransomware attacks on CPS, as well as boost several sectors in society, including manufacturing, transport infrastructure, healthcare, IT, robotics, and more.

4 | MENTAL HEALTH

The topic of mental health is at the forefront of conversation on the island of Ireland today. These discussions mean that this is a rapidly changing research area, and the research by I-SWAP and Aim4Health is furthering our understanding of the issue.

For example, I-Swap investigated how mental health issues often coincide with other health issues, while Aim4Health aimed to identify the risk factors that potentially increase the likelihood of mental health problems.

I-SWAP

Irish Student Wellbeing and ADHD Project

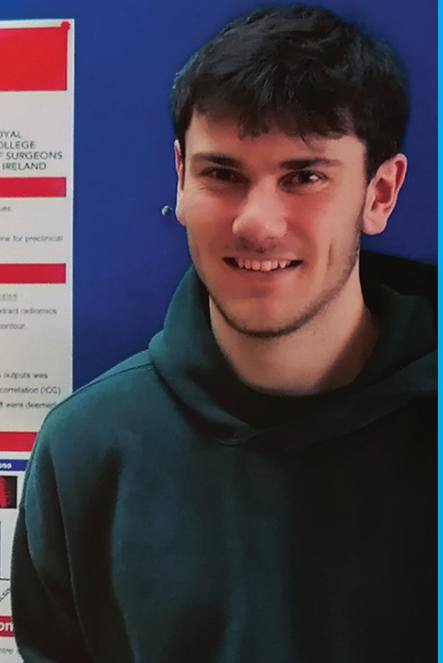
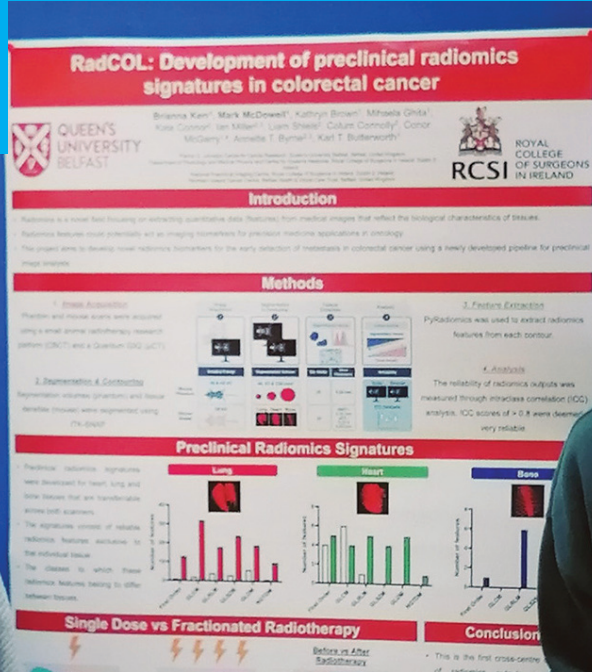
Lead investigators: Dr Louise McBride, Atlantic Technological University Donegal and Dr Elaine Murray, The University of Ulster

Higher Education Institutions are facing a significant challenge of developing strategies to assist college students who are suffering from mental illnesses, including those who also live with ADHD. Previous research has shown that students living with ADHD not only have a higher rate of mental health issues but are also more likely to leave college without completing their course.

The Irish Student Wellbeing and ADHD project (I-SWAP) led by the Atlantic Technological University and the University of Ulster worked to understand the link between ADHD and mental health, as well as developed a targeted, evidence-based programme aimed at improving the psychological wellbeing amongst students living with ADHD.

Testing of the wellbeing programme developed by the project showed that many participants reported that they found it beneficial. As well as this, testing showed that the overall rates of depression amongst participants involved in the programme decreased and help-seeking behaviour and self-esteem increased. This project also helped raise awareness of the issues that can impact students with mental health issues and identified ways students with ADHD can be further supported during the transition from school to college. Furthermore, the methods utilised in this study could potentially be implemented across other groups in a number of settings with a view to improving not only mental health outcomes but also learning outcomes for participants.

RADCOL



TRACER



TJHIA



AIVRT

YOUTHDANCE



SUGARCOAT



eHEALTHHUB

5 | MEDICINE/TREATMENT DEVELOPMENT

One of the main aims of the NSRP is to enhance innovation and excellence through collaborative partnerships. Projects awarded funding under the programme have assembled teams who are working together to pioneer and further novelistic methods, approaches, treatments, theories, and concepts. Project researchers are looking towards the future to how they can establish new methods, or further strengthen the research within their chosen area.

The projects Vit-TB, Cartregen, Snapshot, Mechano-MS, WoundActiv, Deflate, PepDeliver, Sugarcoat and AIVRT are all trying to achieve this goal by attempting to create, enhance or develop innovative ideas and products to explore novel ways of treating people or eradicating illnesses. They varied in topic, from investigating cells for treatments to the development of new medication for illness, injuries, and procedures.

MECHANO-MS

MECHANICAL INDUCTION AND LONG-TERM STABILITY OF REGULATORY T CELLS IN MULTIPLE SCLEROSIS

Lead Investigators - Dr Eoin McEvoy, University of Galway and Prof Denise Fitzgerald, Queen's University Belfast

Thousands of people on the island of Ireland and millions worldwide are living with Multiple Sclerosis. Multiple Sclerosis is an immune-mediated disease in which the myelin sheath that coats nerve cells becomes damaged, leading to symptoms such as loss of vision, muscle weakness, and fatigue. There is currently no cure for MS, though a number of treatments are available to reduce frequency of relapses.

The Mechano-MS research team from University of Galway and Queen's University Belfast investigated ways to control the activity of immune cells that could lead to improvements in MS therapy. The QUB team had recently discovered that depletion of regulatory T (Treg) cells impedes myelin regeneration. In this project the researchers worked to understand how physical forces are sensed by immune cells to drive Treg initiation, and to determine if mechanically-induced Tregs have the capacity to support myelin regeneration. The team also developed simulations and computational models to help predict and understand the various processes that control Treg induction. Further insights in this area will provide a foundation for developing new biomaterials and treatments for MS immunotherapy.

The Mechano-MS project has brought together complementary expertise on the island in neuroimmunology and computational mechanobiology to drive forward research that would not have been achieved independently. The aim of this project was to advance current understanding of MS immunotherapy, which could pave the way for improved treatment outcomes and quality of life of people with MS.

6 | COMMUNITY PARTICIPATION

The North South Research Programme encouraged engagement with communities across the island and the further development of relationships between researchers and research participants.

NSRP projects Enspired, Miste, RID Injury, TOGETHER, Talk4Peace and YouthDance all focused on working with community networks. From dance groups to formal and informal communication networks, these projects aimed to understand the ties that bind participants together, group bonds, group networks and resources, and the effects of these bonds on individuals and their behaviours.

TALK4PEACE

TRANSFORMATIVE MEDIATION AS A MECHANISM FOR INCLUSIVE DIALOGUE AND PEACEBUILDING ON THE ISLAND OF IRELAND

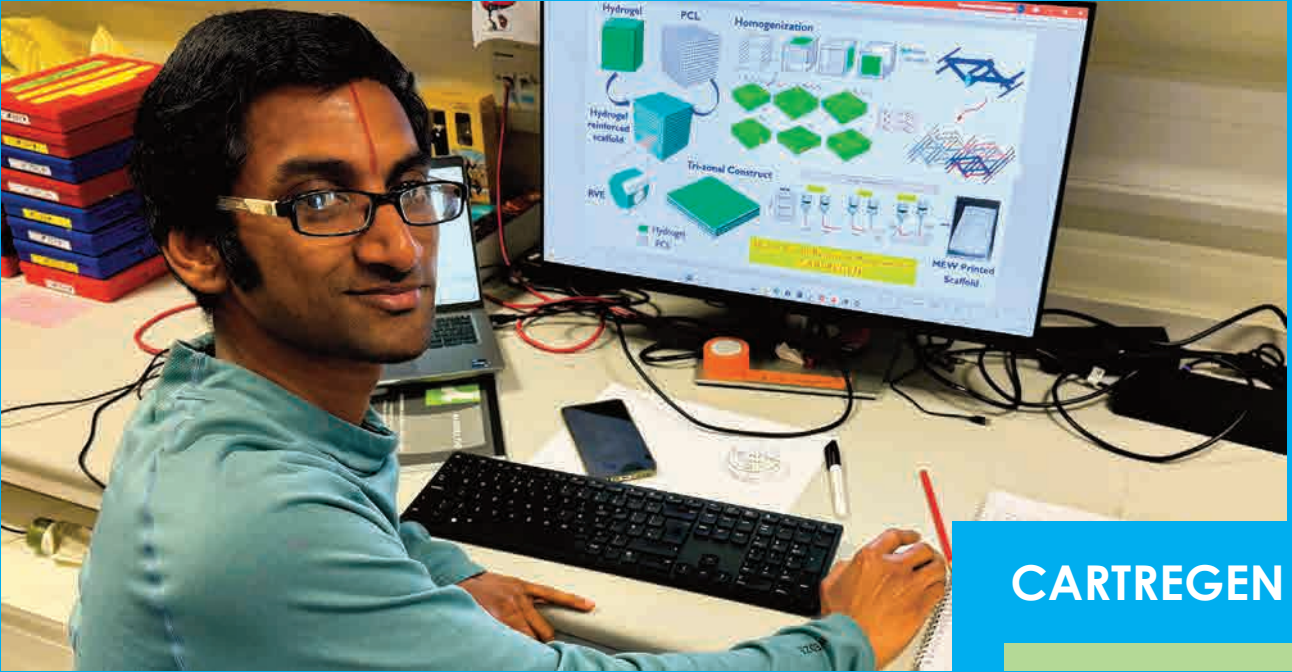
Lead Investigators: Dr Heidi Riley, University College Dublin and Dr Maria Adriana Deiana, Queen's University Belfast

Researchers from University College Dublin and Queen's University Belfast worked together on the interdisciplinary Talk4Peace project to explore the factors and mechanisms that facilitate greater inclusion in mediation. Given that women and minorities have traditionally been excluded in the mediation process, there is a direct focus on mediation through a gendered and intersectional lens within the project.

The researchers aimed to assess how a more inclusive peacebuilding agenda could be constructed, with a collaborative programme based on research and knowledge exchanges between academic and non-academic actors. The team conducted a number of online interviews with international mediators from across the world, and they invited peacebuilders, mediators, and activists from across the island of Ireland to participate in focus groups.

The study has published a briefing paper which has received international attention. The project has been advised that the report had been useful in advocating for better inclusivity in long-dormant peace talks elsewhere. Similarly, Mediation Scotland reached out to invite the team to run a workshop at its annual conference. Talk4Peace aims to continue to foster constructive and inclusive dialogue and help build a shared consensus within future peace processes.

The investigators have engaged with the Department of Foreign Affairs around policy in this area, and the Glenree Centre for Peace and Reconciliation has also based a new transformative mediation programme on the project's briefing paper.



CARTREGEN



ULTONIA



ENSPIRED



CEAB

CLUB



I-SWAP

FCCCEOLED



CO-DECIDE



PROPER



EPIHYPER



REPROCIT

7 | BORDER STUDIES

Following the 'Brexit' vote in 2016, attention turned to the impact that would be felt on the soft border between Northern Ireland and the Republic.

The NSRP funded a number of projects, which through collaborative research, are looking at the impact of the soft border and at the experience of those living in proximity to the border. The work by FoodFraud, MES-AIE, CEAB, WoBLa, and Bordex examined factors that have felt the aftereffects and unintended consequences of the Brexit vote. This included consumers and stakeholders within the food industry, the lived experiences of EU nationals residing on the island of Ireland, and women's experiences since the referendum vote.

WoBLa

WOMEN OF THE BORDERLANDS: A WALKING BIOGRAPHICAL STUDY OF WOMEN'S EVERYDAY LIFE ON THE UK/IRISH BORDER

Lead Investigators: Dr Theresa O'Keefe, University College Cork. The University of Ulster, Dr Niall Gilmartin

WoBLa or Women of the Borderlands is a project undertaken between University College Cork and Ulster University. The project represents the first feminist sociological account of border life on the island of Ireland from the overlooked perspectives of women living in border communities. The team wanted to understand how living near the border has shaped women's lives in relation to their own opinions, work, family life, violence, and freedom of movement, including when and why they crossed the border.

The research captured a diversity of perspectives whose border experiences have potentially been overlooked including Catholic and Protestant women, those religiously unaligned, as well as migrant and women in rural areas. The study has produced a range of findings including some on women's experiences of gender violence in the borderlands, the continued experience by some women of what they consider a hard border and findings that contest what counts as a 'border community'.

The research and research team has had a positive impact as they established strong relationships with several women's organisations. Organisations in the area helped introduce some interviewees to the project and will host several public talks. Furthermore, Ulster University and University College Cork have agreed to collaborate further with the commencement of a Cross-Border Network for Feminist Research, which will help nurture PhD and post-doctoral research, commence cross-border teaching, and encourage knowledge exchange.

8 | POLICY DEVELOPMENT

Projects such as YouGaMSI, SLSSHub, Atlantic, DCT&GAW, AICEEHP and TJHIA were directly concerned with improving or amending policy within their respective research areas. All the projects were interested in addressing what they consider to be a gap in legislative policy, and included such topics as gambling marketing, youth crime, alcohol labels and more.

These research projects may strengthen the ties between researchers and policy makers, and it may also help government officials progress evidence-informed decision making that is underpinned by data.

YOUNGAMS: FAIR PLAY?

ASSESSING THE EXPOSURE OF YOUNG PEOPLE TO GAMBLING MARKETING THROUGH SPORT ON THE ISLAND OF IRELAND

Lead Investigators - Professor Aphra Kerr, Maynooth University, The University of Ulster, Dr Paul Kitchin

The YouGaMSI project was run by researchers from Maynooth University and Ulster University and it examined the exposure, perceptions and attitudes of young people to gambling marketing around live sport on the island of Ireland. International research contends that exposure to gambling and the gambling environment are key factors contributing to a rise in gambling behaviour. It is argued that there are significant levels of gambling and problem gambling in Ireland and in Northern Ireland, with young men in particular affected.

Within the study, focus groups were conducted with young people, aged 14 - 24 from the border regions on the island of Ireland. The team also conducted media content and marketing analysis via recordings of sporting events and the marketing strategies employed by the major gambling operators on Instagram. All young people reported seeing gambling advertisements and could recall adverts from gambling operators with many seeing gambling as a normal part of the sport. They also could not recognise the social impacts of gambling besides monetary loss.

These findings will be used to co-create educational resources with NGO partners, Extern Problem Gambling and Gambling with Lives to help those with gambling problems. The team were also invited to present to the Council for Curriculum, Examinations and Assessment (CCEA) in Northern Ireland, which may inform the council's messaging around gambling harms in schools. Similarly, gambling policy is under review in both jurisdictions. YOUNGAMS will create policy briefs to help inform future legislation and improve public knowledge on the exposure of young people towards gambling marketing and sports.

9 | ARTS, CULTURE & HERITAGE

Several funded projects aimed to understand the rich shared cultural and artistic heritage on the island. Projects such as Cartlann, Bran, OSMBH, Ultonia and IrbordCul mined the depths of the island of Ireland's history, examining archival records, language, poetry, cultural dynamics, border culture, and the events of the Troubles to create interactive maps, digital repositories and a record of the amazing, yet oftentimes niche creative outputs from citizens living on the island of Ireland.

ULTONIA

CULTURAL DYNAMICS IN MEDIEVAL ULSTER AND BEYOND; A SHARED INHERITANCE

Lead investigators: Dr Caitríona Ó Dochartaigh, University College Cork, The University of Ulster, Dr Nioclás Mac Cathmhaoil

The Ultonia project developed by University College Cork and Ulster University grew out of the need to demonstrate the shared links and heritage across the island of Ireland. By doing so, the team aimed to generate high-quality research outputs and foster greater co-operation in educational initiatives.

The researchers worked with history teachers in Banbridge Academy and educational stakeholders and experts who provided input and feedback for several classroom units and educational materials that were produced for the project. Within the project, the team created work units that focused on the island of Ireland's shared history, including the Vikings, folk songs, migrant seasonal labourers, and the legend of Fionn mac Cumhaill.

During the research process, the team discovered the dissonance between the two education models in the North and South, and it is hoped that this project will highlight what education in this field could look like on a shared island. The educational resources provided here will hopefully contribute to the understanding of cultural diversity across the island of Ireland. It is hoped that understanding this shared history will build a sense of a shared inheritance and inspire new areas of activity towards the development of an innovative shared curriculum.

10 | WOMEN'S HEALTH AND REPRODUCTIVE RIGHTS

Historically, across many aspects of research, experiences of those who identify as women and their contributions have tended to be excluded from the narrative or ignored entirely. Since the late 20th century, there has been an increased focus on including their experiences and on conducting research that focuses on women's health and reproductive rights.

This includes projects such as IYCF-E-Ire, COVICAT and ReproCit which encouraged and furthered examinations into women's experiences, such as their experiences of consent and sexual violence, infant feeding support networks, vaccine uptake in pregnancy, and abortion legalisation.

These projects are advancing the field further and are deepening our understanding of gendered experiences on the island of Ireland.

IYCF-E-Ire

DEVELOPING AN INFANT AND YOUNG CHILD FEEDING IN EMERGENCIES PREPAREDNESS PLAN FOR THE ISLAND OF IRELAND

Lead Investigators: Dr Elizabeth O'Sullivan, Technological University Dublin, Queen's University Belfast, Dr Clare Patton Dr Peter Doran

The development of an IYCF-E-Ire plan is necessary, especially in the wake of the COVID-19 pandemic, the US infant formula shortage and post-Brexit impacts. There is currently no IYCF-E plan in place on the island of Ireland. This project will help develop a draft IYCF-E preparedness plan for the island of Ireland, considering inputs from relevant stakeholders, the hazards that threaten safe IYCF, the 'stress testing' of resources, and the sources of professional and lay IYCF support available.

The IYCF-E (Infant and Young Child Feeding in Emergencies) project, which was ran by TU Dublin and Queen's University Belfast was concerned with developing a preparedness plan for the island of Ireland to support the safe feeding of babies and young children during an emergency.

This project is the first of many steps towards recognizing the importance of having an IYCF-E preparedness plan in place for the island of Ireland, but other work outputs also include challenging infant formula marketing in Ireland and the legal argument that breast feeding can be recognized as a human right within the UN system.

11 | MOLECULAR BIOLOGY

ExoBCell, SeeDeepER, Promaric and EpiHyper span the breadth and depth of molecular biology with studies such as furthering our understanding of brain functions, genetic differences, vaccine development, the study of stem cells or finding new cell targets based on individual genetic makeup.

Although extremely varied in subject matter, these projects hope to find new and innovative ways of treating people. Despite studying the minute processes of the body, these projects will hope to make a significant impact within the molecular biology field.

EpiHyper

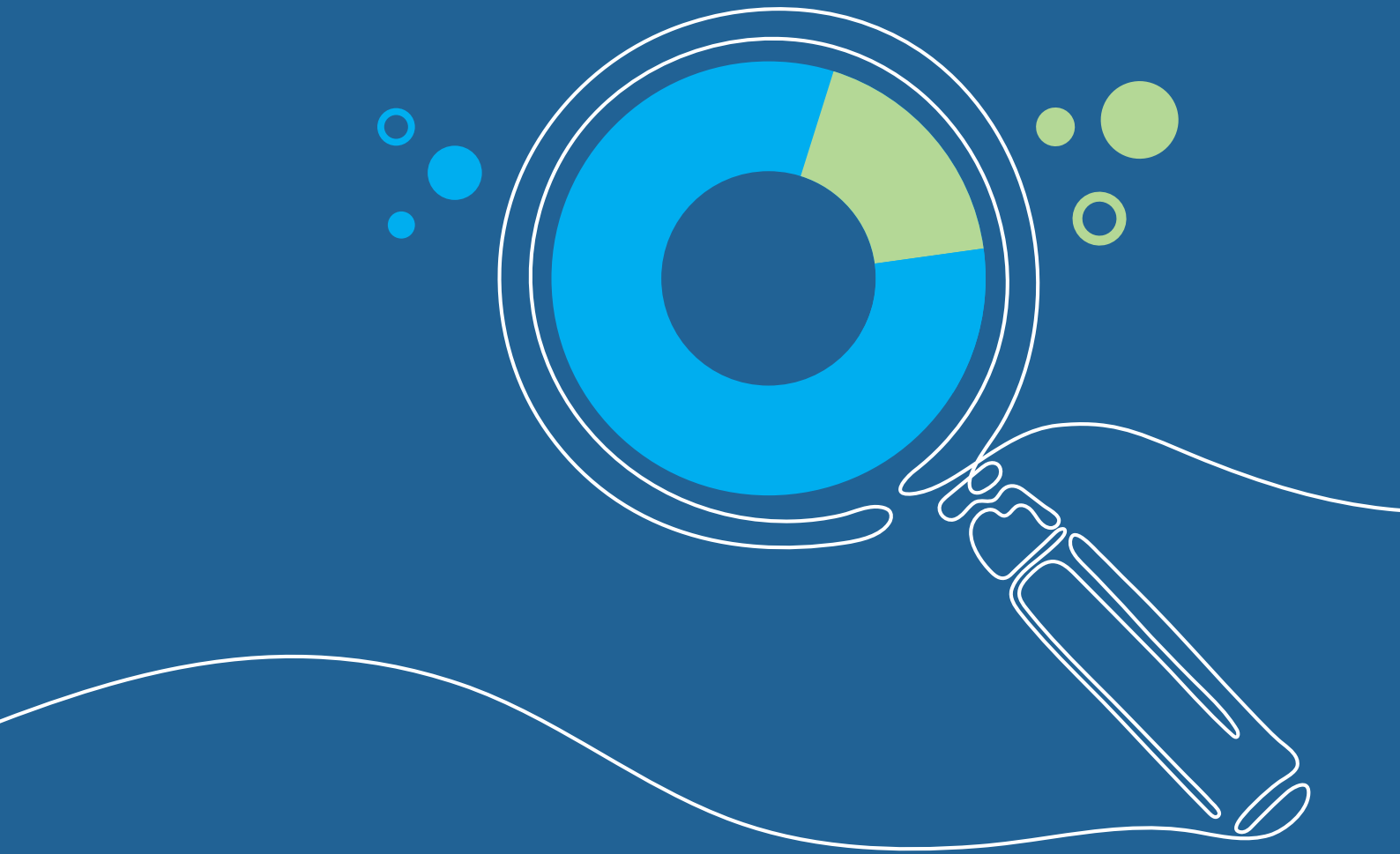
EFFECTS OF MTHFR 677 GENOTYPE AND CO-FACTOR RIBOFLAVIN ON PHENOTYPIC BEHAVIOUR AND EPIGENETIC PROFILE IN ISOGENIC PATIENT-DERIVED INDUCED PLURIPOTENT STEM CELL (IPSC) LINES DURING DIFFERENTIATION TO VASCULAR SMOOTH MUSCLE CELLS.

Lead Investigators - Professor Mary Murphy, University of Galway, The University of Ulster, Dr Diane Lees-Murdock

Hypertension, or high blood pressure is a common diagnosis for people in Ireland. Ireland has some of the highest rates of hypertension internationally, but among the lowest levels of diagnosis, treatment, and control. The University of Galway and Ulster University came together for the EpiHyper project to identify new cell targets that can respond more effectively to blood pressure treatments.

The team has identified that hypertensive patients with a certain genotype (MTHFR 677TT) were helped by riboflavin. The health impact of optimizing riboflavin could be considerable, as a riboflavin supplement could offer a simple non-drug treatment to lower blood pressure. Researchers also established in vitro models to investigate stem cells and vascular smooth muscle cells (the latter being in control of vascular tone - the constriction of blood vessels).

Small breakthroughs in treatment such as this could have a substantial impact on the treatment for hypertension. For example, each 2mmHg decrease in blood pressure can reduce the risk of stroke by 10%. The team are now planning a US-Ireland grant with Thomas Jefferson University to extend this work further, and the collaboration between the University of Galway and Ulster University has allowed for shared learning, as well as training in bioinformatics and genetic analysis, which will help scientists develop better and more effective hypertensive treatments.



FIND OUT MORE

If you would like to learn more about the 62 North South Research Projects in depth, scan the QR code below to visit the Higher Education Authority (HEA) website.

On the website, you will find the lead researchers from each respective Higher Education Institute, a link to a website built by the project, as well as a summary of the research undertaken by the team.



NOTES



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