



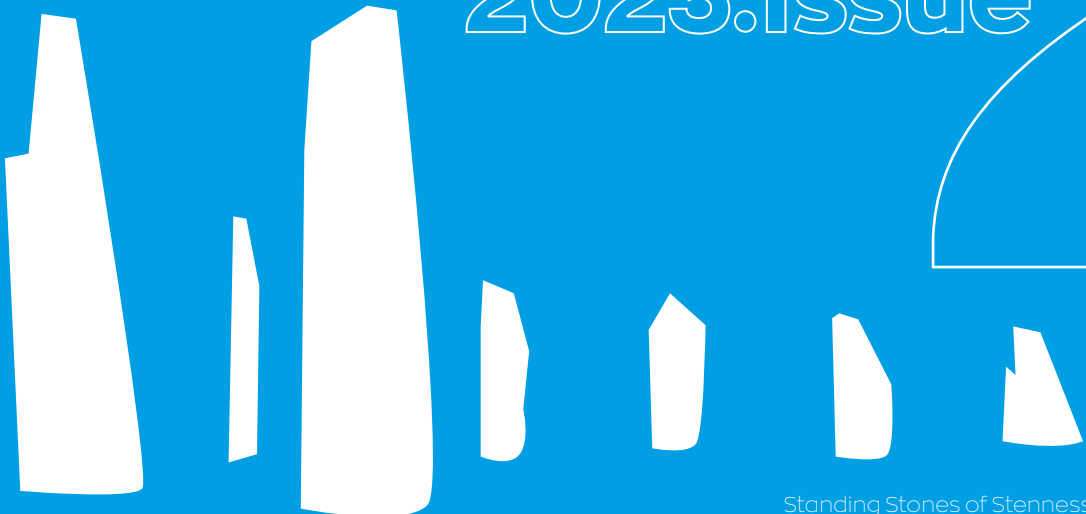
**ROBERT GORDON
UNIVERSITY ABERDEEN**



RGU RESEARCH MAGAZINE

2023: Issue

ORKNEY



Standing Stones of Stenness

4

Welcome and introduction
from Elsa Cox

6. Meet the team in Orkney

12

- 12. Our part in the digital heritage journey
- 16. Orkney in the Master of Architecture course: A fertile microcosm
- 18. RGU Orkney and the 2025 Island Games
- 20. A PhD student's exploration of sustainable tourism in Orkney

RGU in Orkney

8

Looking North
RGU and the University of the Arctic

Spotlight Feature

24

- 24. Video spotlight: Dr. Julie Jones Revolutionises Parkinson's Care with Exercise
- 26. Flow loop system helps with oil-water separation
- 28. Thought leadership. AI: Navigating amidst fear and opportunities
- 30. From Florida to Scotland: My RGU journey into PhD Physiotherapy

Features

34

- 34. News, funding, events and more
- 36. Research Revealed

Research in Focus

CONTENTS





Orkney is a unique archipelago of islands, regularly ranked as one of the best places to live in the UK. But its appeal is much greater than this. Orkney has an entrepreneurial and innovative culture which lends itself to testing new and varied ideas.



RGU ORKNEY
2023-2028

WELCOME

As an island group, it offers variety through its mix of towns, rural mainland areas and outer islands, each with differing demographics, service requirements and landscape. Orkney is large enough for projects to lend scale to research proposals yet small enough for those projects to be truly transformational.

RGU plays a significant role in the historic connections between Aberdeen, Orkney, and the far North. The University has a long-standing relationship with Orcadian students who choose to enrol at RGU, contributing to the development of extensive alumni and research networks in the islands.

RGU Orkney is an innovative satellite initiative based at the **Orkney Research and Innovation Campus** to enhance RGU's reach and reputation and ultimately create transformational projects. Within this island landscape, community

engagement has been at the heart of RGU's approach, embedding the University's activities and ethos within local networks.

In April, RGU Principal and Vice-Chancellor Professor Steve Olivier and the University Executive visited Orkney to launch **RGU Orkney 2023-2028**, a new five-year plan. The plan focuses on three main objectives:

- 1. Conducting research and knowledge exchange that utilises RGU expertise to tackle local challenges.**
- 2. Supporting the development of skills, education, and entrepreneurship opportunities in Orkney.**
- 3. Creating an evidence base to influence policy and practice in other remote rural regions through innovative research and teaching programmes.**

The plan aims to help the local community in Orkney while also contributing to the development of remote rural regions.

As part of RGU's strategic priority to grow the quality and impact of its research, the University is committed to engaging in research and knowledge exchange that supports Orkney's social, economic and environmental ambitions. It will be relevant to remote, rural and island regions like the Highlands and Islands. RGU also joined the University of the Arctic in 2021, a network of more than 200 higher education and research institutions across northern regions that address global challenges of Arctic people and societies by providing unique educational, research and innovation opportunities. Since then, we have built on historic links with Orkney and the Arctic, supporting the islands to play a pivotal role in Scotland's ambition for enhanced Arctic cooperation.

Our second issue of the RGU Research Magazine is dedicated to the various projects related to Orkney and our activities across the North. We invite you to look at the diverse range of ongoing initiatives presented in this edition, and we hope it inspires you to participate, whether you are an academic, student, or professional staff member. We are eager to receive your feedback and delve into your ideas. Please do not hesitate to reach out to us.

Elsa Cox

RGU Orkney Development Manager



MEET THE TEAM

RGU IN ORKNEY

Professor Nick Fyfe

Vice Principal Research and Community Engagement

Professor Nick Fyfe is Vice Principal for Research and Community Engagement and a member of the University Executive with responsibility for RGU Orkney.

An internationally recognised researcher in the field of policing and criminal justice, Nick has held positions at universities in the UK, Europe and New Zealand and is currently a Visiting Professor at the Norwegian Police University College. He is passionate about promoting interdisciplinarity, the place agenda and the public value of research, all of which have informed his approach to championing the development of RGU Orkney and wider engagement with the University of the Arctic.



Grant Davidson

Head of Research Strategy, Culture and Performance

Grant Davidson is the Head of Research Strategy, Culture and Performance and heads the Research Office team supporting RGU's ambitious strategy focused on growing high-quality, impactful and interdisciplinary research. Grant is responsible for taking forward the University's research priorities, strengthening the institution's research culture, and supporting the impact and knowledge exchange agenda.

With a background in agricultural development across Asia and Africa, Grant brings a wealth of experience in participatory community engagement, working with a wide range of research funders and research management and administration to support the University's new strategy for RGU Orkney.



Professor David Gray

Academic Lead Orkney and the North

Professor David Gray is the Academic Lead for RGU Orkney and the North. David has expertise in remote, rural and island transport and has been researching the topic for over 25 years. David has advised several public bodies, including the Scottish Government, where he was an expert advisor in the development of Scotland's first National Transport Strategy. He also served on the Board of the Highlands and Island Regional Transport Strategy for 13 years. Since joining RGU, he has been Principal Investigator on 46 research projects and has led Horizon, Interreg North Sea Region and Northern Periphery and Arctic programme project consortia. David was born and grew up in Shetland and has an Orcadian mother, so he is well placed to lead on activity for RGU in Orkney and the North.



Elsa Cox

RGU Orkney Development Manager

Elsa Cox is RGU Orkney Development Manager based at the Orkney Research and Innovation Campus (ORIC) in Stromness. Focussing on remote, rural and island practice, Elsa works across the University to promote place-based approaches to research, teaching and learning, student activity and skills and entrepreneurship with an emphasis on local stakeholder engagement. Elsa acts as an RGU representative of UArctic and sits on the Board of the Scottish Arctic Network (ScAN), leading related initiatives and building on historic links with Orkney and the Arctic, supporting the island to play a pivotal role in Scotland's ambition for enhanced cooperation. Prior to joining RGU, Elsa worked in the Museum sector, latterly as Senior Curator of Science and Technology at the National Museum of Scotland. A keen sea swimmer, she has always been attracted to colder climes, previously working in South Georgia in the sub-Antarctic and Iceland in the North.



Andy Golightly

Project Manager

Andy has 20 years of experience in project management, developing, and delivering physical, heritage, community and economic development projects. He has managed and delivered projects through a variety of grant-funded bodies, including the National Heritage Lottery, Historic Environment Scotland and European funders, including the European Regional Development Fund INTERREG and LEADER. While working in Orkney for the past nine years, he worked on the Kirkwall Townscape Heritage Initiative and managed the North Isles Landscape Partnership Scheme across Orkney's North Isles. In his current role with RGU, Andy has been responsible for the management and delivery of several EU-funded projects led by the University, and he's currently looking at developing projects, proposals and collaborations in Orkney in areas of data management (energy, health, business), data analytics and digital marketing.



LOOKING NORTH

In 2021, Robert Gordon University (RGU) joined the University of the Arctic (UArctic), a network of over 200 higher education and research institutions in the Northern regions. This move reflects RGU's commitment to addressing global challenges that Arctic communities face through education, research, and innovation opportunities.

SPOTLIGHT FEATURE

By joining the **UArctic network**, RGU has strengthened its historical ties with Orkney and the Arctic. This contribution has also helped Scotland's goal of improving Arctic cooperation.

The Arctic region faces a range of global challenges, including climate change, which has far-reaching implications for the region's ecology, economy, and people's lives. RGU's research and innovation initiatives will aim to address these challenges and make a significant contribution to the wellbeing of the Arctic communities.

RGU is playing an important role in the Arctic engagement field and lead initiatives that unite people and encourage collaboration, regardless of location. The University is committed to the Arctic region and has a growing presence from Scotland to the northernmost areas.

A key player in the Scottish Arctic Network

At the heart of RGU's Arctic engagement lies its active participation in the **Scottish Arctic Network (ScAN)**. Within ScAN, RGU is key in facilitating discussions, sharing valuable advice, and establishing crucial contacts related to Scotland's

Arctic relationships. This dedication did not go unnoticed. ScAN recently received the prestigious designation of a UArctic regional centre, a testament to the collaborative spirit and meaningful contributions made by RGU. This was formally recognised during a visit by UArctic President Lars Kullerud and Vice President Outi Snellman to Aberdeen in March 2023.

RGU's expanding Arctic footprint

RGU's involvement in Arctic matters has steadily expanded over the years. In 2022, the University made its mark at the Arctic Circle Assembly, a significant event where experts and stakeholders gather to discuss pressing Arctic-related issues. RGU also secured

a Scottish Government Arctic Connections grant in collaboration with the University of the Faroe Islands. This joint project focused on

rural youth outmigration, highlighting shared concerns between Scotland and the Arctic.

Professor Chris Yuill from the School of Applied Social Studies, who co-led this project with Graeme Baxter from the School of Creative and Cultural Business, said: "The reasons for youth migration are complex and operate on many levels. To retain and attract young people in **rural communities** we need to begin thinking differently.

"It is more than providing jobs and housing - vital as they are - it is about reimagining the rural as a location that is creative, positive and that adds to life offering opportunities that urban locations cannot provide. Something that is missing in many narratives."

Fostering collaboration was at the core of RGU's initiatives. For instance, the **North2North student exchange programme** saw RGU hosting representatives from The Arctic University in Norway based in Narvik in April 2023, facilitating enriching discussions spanning various disciplines. This exchange is a two-way street, with RGU's Vice Principal of Research Nick Fyfe and colleagues from Engineering and Computing visiting Narvik in October, exploring potential research and teaching collaborations.



Making an Impact from Greenland to Norway

RGU's Douglas Pritchard, Associate Professor from the Scott Sutherland School of Architecture & Built Environment attended the UNESCO Sustainability Conference in Greenland. The event provided the managers of UNESCO Natural and World Heritage sites an opportunity to discuss best practices and how the management and monitoring of UNESCO sites can contribute to sustainable development in the surrounding local communities. The event was a unique opportunity to bring together representatives from Greenland, Iceland, the Faroe Islands, Sweden, Norway, Denmark and Canada to review the challenges of climate change and the pressures of increased tourism - but from a Northern perspective.

UArctic thematic networks and beyond

RGU is involved in UArctic Thematic Networks including Arctic Sustainable Arts and Design and Northern and Arctic Island Studies Research. The University also prioritises skills development and entrepreneurship, aligning with the Islands Growth Deal programme. Izzy Crawford, from RGU's School of Creative and Cultural Business, successfully led the approval of a new UArctic Thematic Network in May that centres on Collaborative Online International Learning (COIL).

Izzy said: "The COIL@UArctic thematic network is a future-focused, globally connected, virtual learning strategy for UArctic members and non-members with a focus on Biodiversity Education. COIL is designed to enhance graduate employability by promoting interdisciplinary, intercultural, and digital transversal skill development. It is hoped that participation in the network will help to support the Islands Growth deal programme."

A promising Arctic future for RGU

RGU is fully committed to participating in discussions and initiatives related to the Arctic. University participated in the Arctic Circle Assembly in October 2023 and the **Arctic Science Summit Week** in Edinburgh in March 2024. Additionally, plans are underway to host the Scottish Model Arctic Council (SCOTMAC) in Orkney in 2024. These actions demonstrate RGU's dedication to Arctic engagement.

Elsa Cox, RGU's Orkney Development Manager, said: "We look forward to further developing our UArctic partnerships, fostering research and teaching collaborations alongside student exchanges, to explore solutions to shared challenges across Scotland and the Arctic. There is huge potential in this space to positively impact the world, and we would be delighted to hear from anyone across the University who is keen to engage in our Arctic activity."

As RGU ventures deeper into the Arctic, the University's dedication to collaboration, research, and addressing shared challenges solidifies its place as a pivotal player in exploring and engaging with the Arctic.

To stay updated with RGU's Arctic projects and activities, can join the RGU Arctic mailing list by emailing rguorkney@rgu.ac.uk. Additionally, individuals interested in ScAN's initiatives can sign up for their own **mailing list**.



We look forward to further developing our UArctic partnerships, fostering research and teaching collaborations alongside student exchanges

OUR PART IN THE DIGITAL HERITAGE JOURNEY

Storytelling is a powerful tool for building connections, preserving history, and safeguarding our cultural heritage in today's information-driven world. RGU Orkney has partnered with local creative businesses in managing three digital heritage research initiatives. These projects aim to expand market opportunities and enable access to immersive digital technologies, promoting a deep connection between narratives, landscapes, and origins.

Shaping a digital future for the north of Scotland

Robert Gordon University (RGU) led on an effort to revolutionise digital innovation in Northern Scotland. The University partnered with institutions in Northern Ireland, Ireland, and Iceland to help small and medium-sized enterprises (SMEs) and organisations to adapt and excel in the digital landscape.

The initiative, called 'Capitalising on Digital Innovations for Heritage and Capacity' (CADI SHAC), was funded by the Interreg Northern Periphery and Arctic Programme, and aimed to improve online presence and uniqueness and help SMEs develop the skills they need to take advantage of digital marketing and data analytics. The project showcased the potential of immersive technologies such as augmented and virtual reality to engage audiences.

Professor David Gray, who leads this project, said: "CADI SHAC is a cluster project, which builds on the work carried out across four Northern Periphery and Arctic projects: Story Tagging, which RGU also leads, Digi2Market, CINE and STRATUS. It is a really exciting project that is enhancing the digital skills of small and medium-sized enterprises across the Highlands and Islands."

The pandemic has highlighted the importance of embracing digital innovation, and a unique digital presence has become crucial for success in an increasingly crowded online space. CADI SHAC recognises the value of heritage and folklore in achieving this goal, offering a culturally sensitive approach. The project aims to immerse audiences in captivating digital experiences by harnessing immersive technology.

Andy Golightly, Project Manager at RGU Orkney, emphasised the project's commitment to widening SMEs' access to essential digital marketing and analytics training materials. He said: "Covid has emphasised the need for small and medium enterprises (SMEs) and other organisations to embrace digital innovation to create a unique presence in an increasingly congested online space. Harnessing heritage and folklore sensitively can help them do this, as can using immersive technology.

"IT IS A REALLY EXCITING PROJECT THAT IS ENHANCING THE DIGITAL SKILLS OF SMALL AND MEDIUM-SIZED ENTERPRISES ACROSS THE HIGHLANDS AND ISLANDS."



"Through CADI SHAC, we are also aiming to widen SMEs' access to training materials in digital marketing and analytics training, which will help them to enhance their online reach."

At RGU, we're on a mission to light the path to digital innovation, helping organisations shine brightly in the ever-evolving digital landscape. How do we do it? By tapping into the rich tapestry of our region's heritage and folklore, we empower organisations to tell their stories like never before. We ensure these businesses can thrive in a digital landscape by introducing immersive technologies such as augmented and virtual reality and arming small and medium sized businesses with digital marketing and data analytics skills.



WATCH THE CADI SHAC PROJECT TRAILER



What is StoryTagging?

The **StoryTagging project** offers a solution to economic hardships faced by creative professionals in remote northern European regions. The project blends storytelling with digital tools to help local businesses thrive and preserve the cultural heritage of these areas. Scotland, Northern Ireland, Sweden, and Finland are part of this project to empower creative individuals and businesses by providing them with a **digital platform** to showcase their talents globally. Participants can also access training resources to improve their digital marketing skills.

These regions face economic challenges, including high production costs, a dwindling local customer base, and a vast distance from international markets. This has led to many creative practitioners leaving their home communities for better opportunities.

The StoryTagging project provided an economic lifeline and celebrates these regions' unique cultural heritage. The project collects and shares stories in multimedia formats, inviting creative practitioners to apply for modest grants and collaborate on projects inspired by these narratives.



**WATCH THIS
SHORT FILM**

Institutions in the Scottish Highlands and Islands, Northern Ireland, Sweden, and Finland have collaboratively addressed shared issues. Participants attended transnational events, engaged in cross-border marketing initiatives, and learned from their peers in similar businesses elsewhere.

StoryTagging is not just a project; it represents the incredible transformation of digital innovation and the timeless appeal of culture. It demonstrates that even the most remote corners of our planet can captivate the global audience in this ever-evolving digital age.

Augmented fashion – Opening up a digital world

The Augmented Fashion project is an initiative that aims to change the way people view traditional fashion and textiles. It brings together research teams, Scottish academics, and industry partners in Shanghai to educate consumers about the value of these products.

The project uses immersive interactions to emphasize the sustainability, craftsmanship, heritage, and intrinsic value of artisanal fashion and textiles. By focusing on culture, provenance, heritage, and sustainable clothing consumption, the initiative strives to reshape the fashion landscape.

Fashion, as we know it, has embraced the digital realm, with online sales surging and fashion films becoming powerful marketing tools for creative designs. Immersive technology presents a unique opportunity to create a sustainable future for traditional textile design, production, and consumption. The Augmented Fashion project aims to explore the potential of immersive technologies to redefine consumer perceptions, placing a premium on craftsmanship and encouraging individuals to view clothing as a valuable investment. By utilizing immersive technology, consumers can engage with textiles in a new and innovative way, ultimately creating a more sustainable and conscientious approach to fashion.

Dr Karen Cross from the School of Creative and Cultural Business, who co-leads this project, said: "This project is an exciting opportunity to support the traditional Scottish quality textile economy by highlighting the heritage, craftsmanship, and sustainable ethos of small-scale, artisan production. Immersive technologies can help to capture and share the rich detail and value of these products in an engaging and exciting way, bringing them to new audiences and markets across the globe."

This project involves a group of experts from RGU, along with partners including **Kirsteen Stewart**, a Fashion Designer from Orkney, **nielanell** from Shetland, and **Harris Tweed Hebrides** from the Western Isles. They are working together to

understand how people in the textile industry use immersive technology in China. The team is looking at what consumers want and how they respond to new technology. This partnership is breaking down barriers in computing science and fashion and textile industries and identifying areas where new skills are needed.

An immersive experience, born from the collective efforts of project partners and developed in collaboration with **Lateral North**, is set to launch in October 2023, promising to captivate and enlighten.

Josie Steed, Associate Dean for Research at Gray's School of Art said: "There is only a handful of remaining traditional working mills in Scotland. However, there is an international resurgence of interest in Scottish-made textiles. It is exciting to see heritage brands such as Johnstons of Elgin, Montrose Rope and Sail, and Harris Tweed Hebrides, together with more recent business ventures such as Prickly Thistle, doing well within the global marketplace. It is, therefore, vital that we continue to work together with the industry in Scotland to support their aspirations for innovation and sustainable working practices.

"The pandemic and the alarming climate change have refocused attention on the need to make the textile sector more sustainable, and there are huge opportunities in the North East to harness new technologies. Immersive Technologies are increasingly being used as powerful digital tools to create interactive consumer experiences, and it is vital that we reflect on their potential and the opportunities they offer to the sustainable global fashion and textile industry."

Our journey through the Augmented Fashion project shows how tradition and technology can work together to create a more sustainable future for fashion and textiles. By combining these elements, we can make a positive impact on our world.



Orkney in the Master of Architecture course: A fertile microcosm

By David Vila Domini, Lecturer, The Scott Sutherland School of Architecture and Built Environment

For six years now and starting in September 2017 the **Master of Architecture course** at the Scott Sutherland School of Architecture and Built Environment has featured a design studio unit focusing on the islands of Orkney. This is one of three units which are offered at this level of the course, each with a specific focus such as the urban Aberdeen, or the rural Cairngorms National Park, amongst others. Over the period in which the Orkney Unit has been run by Visiting Professor Neil Gillespie and myself, with substantial input for Tim Bayman, the Masters students have studied and been led to explore specific conditions that affect the lives of Orcadians.

In many ways, since our initial involvement we have considered Orkney as a complete microcosm in which social and architectural ideas can be explored within the defined geographical and cultural context of the Islands. Those issues and ideas do not exclusively apply or arise in the Orcadian context, however. In fact, they are often examples of problems that affect many locations and communities worldwide. Issues such as the impact of mass tourism on small communities, or those related to aging populations, or insufficient housing provision; the relationship between living and working; or the problems resulting from outdated building stock. And so on. But in Orkney they are characterised by the particular context in which they manifest, and they are held by the limits arising from its geography.

Our initial explorations related to tourism and its impact on the islands. The rich cultural heritage, from the spectacular neolithic remains of Skara Brae, Maeshowe or the Ring of Brogdar; the Iron Age Brochs, the Scandinavian presence, the exploits of John Rae, Scapa Flow, the Italian Chapel or the living literary and craft traditions -not forgetting Margaret Gardiner's excellent collection of Modern British Art housed in the exceptional Pier Arts Centre building- all combine to make of Orkney an attractive destination for thousands of holidaymakers. This constitutes a valuable economic resource yet brings with it its own well-known challenges. In summer, on the day that the cruise ship carrying close to 5,000 passengers' docks at Kirkwall, the inhabitants of Stromness or other settlements know not to attempt shopping in the capital - it is overrun. It is a seasonal condition.

With the students we proposed that the image of the ancient caravanserai might serve as inspiration through which to interpret the relationship between the visitors and the local communities. A locus of trade and cultural exchange both contemporary and local.

In the summer of 2019, the students put together an exhibition showcasing their work in Stromness. It contained a range of imaginative proposals. Rachel McLean's market and community facility on the Stromness dock engaged with craft and making, whilst a proposal for an offshore Virtual Orkney



captured the tension between the delicate archaeological remains and the increasing numbers of visitors; somewhat like at Lascaux or Altamira, careful replicas of Orkney's sites would be able to accommodate the cruise crowds, perhaps without even setting foot on the Islands. A new home for the Stromness Museum added its brooding silhouette over the town, serving as a link between the main street and the parking area by the harbour.

At a later date, we explored the issues of housing, living and working. How the main settlements of Kirkwall and Stromness may be developed to offer a larger, perhaps newly Orcadian population a dwelling place in keeping with the human, hand-made scale of these towns. Where to live, and how; and what to do for a living. We proposed housing in walkable environments with nearby leisure and water sports, the sea, the rising sea. We

considered renewable energy sources, the natural environment, the politics of the Arctic, humble local shops and the essential fire station.

The unique environment of Orkney continues to inspire our students, as we aim to engage communities and develop new ways of building, in such a way as to foster sustainability and reach net zero carbon. Here the abundance of wind-generated electricity deserves to aid the development of greener ways of living and constructing. Already we have students exploring the possibilities of stone as a main building material with a substantial pedigree on the islands; or the use of lambswool, or heather and oat straw thatch for insulation or weather proofing. These islands continue to offer up challenges and possibilities that encourage us to think about better ways of balancing human needs and those of the planet as a whole.

The unique environment of Orkney continues to inspire our students, as we aim to engage communities and develop new ways of building, in such a way as to foster sustainability and reach net zero carbon.



David Vila Domini

RGU IN ORKNEY

In an exciting collaboration with the Orkney 2025 Island Games Committee, RGU Orkney is offering a funded PhD studentship to support the Games. Orkney will host the International Island Games in 2025 with an expected 2500-3000 visitors for the week-long event. Bringing together people from across the world, competitors will take part in 13 exciting sports, with visitors, volunteers, local communities and businesses all having a key role in creating a celebration of sports and island communities.

RGU ORKNEY AND THE 2025 ISLAND GAMES



Christina McKelvie, the Scottish Government Minister of Culture Europe and International Development, emphasised the broader impact of events like the Island Games: "Orkney 2025 is a wonderful opportunity to showcase the best of Orkney internationally: its people, produce, and stunning scenery. The Scottish Government is proud to support what will undoubtedly be the major sporting event of the 2025 summer. I know the islands will deliver an exciting event with community involvement."

Athletes from across the globe will come together for an international event, showcasing their skills in 13 exciting sports. Visitors, volunteers, local communities, and businesses will all play essential roles in creating a celebration of sports and island communities. RGU's collaborative approach in Orkney, deeply rooted in community engagement and creative problem-solving, has shaped this initiative. In partnership with the Orkney Games Committee, the university identified where it could best support local aspirations. As the Games are expected to be the biggest event ever hosted in Orkney, a studentship has been initiated to investigate the impact of Mega Sporting Events (MSEs) like this on local communities, businesses, visitors, participants, volunteers, and the environment.

Reflecting on this initiative, RGU's Orkney Development Manager, Elsa Cox, shared her excitement: "We are delighted to be able to offer this funded PhD studentship in partnership with the Orkney 2025 Island Games. Working with the Games Committee, we identified where the university could bring the most value to support local aspirations and jointly developed a PhD proposal that will, in part, create a legacy for the Games. This will be our first RGU Orkney PhD Studentship, and we look forward to welcoming a new team member at ORIC."

Based at the Orkney Innovation and Research Campus (ORIC) in Stromness, the studentship aims to construct a comprehensive profile of individuals participating in the Games. The research will evaluate the advantages of holding the Games in Orkney. It will specifically focus on analysing visitor spending and length

of stay, the participants' sentiments towards the event and its amenities, social media engagement, and the environmental impact, with a particular emphasis on transportation and venues. To obtain this valuable data, a range of methods such as interviews, focus groups, and surveys will be utilised, all presented in a simple and accessible manner.

As part of the PhD Studentship, RGU academics will collaborate with the Committee to create a Games App. This app will be a valuable tool that will help locals, visitors, and competitors navigate Orkney, understand the Games and its schedule, and introduce them to the numerous attractions of

the islands. This way, the Orkney 2025 Island Games are set to become an intelligent and well-organised event.

Kirsty Talbot, **Games Director of the Orkney 2025 International Island Games**, underscored the significance of this partnership: "Partnering with key education partners such as Robert Gordon University is a brilliant opportunity to make sure that key outcomes of the Orkney 2025 International Island Games are managed, monitored, and the impact of the event understood for years to come. This is a chance to revolutionise the legacy reporting of international multi-sport events and provide a blueprint for Island Games for years to come."



A PHD STUDENT'S EXPLORATION OF SUSTAINABLE TOURISM IN ORKNEY

“

Alona Roitershtein, an RGU PhD student from the School of Creative and Cultural Business, explores sustainable tourism in Orkney, including the destination's challenges and opportunities. She discusses aligning the Orkney Tourism Strategy with the community's values and aspirations, emphasising the importance of balancing diverse needs and values within sustainable tourism.

I have always been fascinated by the north – cold sea, endless sky, relentless wind, dramatic cliffs and thousands of birds. But also, the people who live there, their past, present and future, their communities and their relationship with the demanding nature, and these remarkable places they call home.

Due to their enigmatic natural setting and the need for small rural communities to diversify their economies to sustain themselves

in the fast-changing world, some of these places have become major tourist attractions, which created many opportunities and challenges. With my academic background in tourism and project management, I decided to see how I could contribute to helping these communities to overcome the challenges and develop tourism in their destinations sustainably and strategically.

Therefore, Orkney became the focus of my interest due to its outstanding tourism offer, fast industry growth and desire to become a sustainable destination to support its 'green' brand. However, I also understood that my contribution can only be valuable if I make the voices of Orkney communities heard in my research since only those who live there can decide what is sustainable for their destination and their society and how they want to use tourism as a tool for their sustainability.





In my PhD research, I am examining the alignment of the Orkney Tourism Strategy with the values, needs, and success definitions of Orkney residents. To understand these, I held numerous conversations with members of Orkney communities – from Orkney Mainland and islands to its south and north, people from different backgrounds and with different attitudes towards tourism in Orkney, and what the strategy for its sustainable development should be.

I was also fortunate to spend time in Orkney and visit its many places of interest and mesmerising islands to deepen my understanding of the issues discussed in the interviews. While many different opinions were heard in these fascinating conversations, they all unite in one – extraordinary passion for Orkney as a place and Orkney as its people and communities. It is, therefore, the task of the strategic planners in Orkney to ensure the tourism strategy recognises the needs and values of Orkney people and does not advance development that is misaligned with these values and needs.

However, as my study will show, it is a complex task since the diversity of needs and values is great, and each community and each island will have unique sustainability requirements. Those with power and agency often determine the needs and values of Orkney communities, leading to conflicting development efforts with community members. By conducting this research, I hope to unravel this complexity by presenting a framework for sustainable tourism strategy evaluation that will help develop strategies that are aligned with the needs and values of its place and its communities in Orkney and beyond to ensure that those incredible places and people that live there reap the benefits from the incredible industry tourism can be.

Video spotlight:

THE POWER OF EXERCISE IN TACKLING PARKINSON'S

Meet Dr. Julie Jones, a Senior Lecturer from the School of Health Sciences who is committed to improving the lives of Parkinson's patients through exercise. In this video, we delve into her pioneering research and how it aims to revolutionise the treatment of Parkinson's disease.



WATCH JULIE'S
LECTURE AT
THE EDINBURGH
PARKINSON'S
LECTURE IN 2022

@julie_physio on twitter/X

25

FLOW LOOP SYSTEM HELPS WITH OIL-WATER SEPARATION



Researchers at the School of Engineering are working on a transformative new method to separate oil from water.

Thanks to funding from NetZero Technology Centre (NZTC) and in collaboration with BSC Technology Ltd, a new oil-water flow loop has been installed at the Sir Ian Wood Building.

The flow loop will be used to test the performance characteristics of a patented water oil-water separator designed and developed by BSC Technology Ltd. The flow loop is also equipped with a standard hydro cyclone separator in parallel, providing a direct comparison of the performance of the newly developed produced water separator.

Offshore production requires water so it can improve the production process, but the water cannot have any oil left in it so needs to be extracted. Professor Mamdud Hossain, from RGU's School of Engineering, said the project will use the new flow loop set up in the hope of it proving the system designed by BSC Technology Ltd can be used offshore.

He said: "We have to clean up the water, which can be recycled back into the reservoir to increase the pressure and enhance oil production. So, our job is to develop a very efficient separator separating oil from water. In the industry, the traditional way of doing that is using a hydro cyclone. We came up with a design which is patented, and we are working in collaboration with the company funded by NZTC to prove the concept."

"The main goal of this collaboration is to build up a flow loop here at RGU. That flow loop can pump a mixture of oil and water into the separator. And then, we can test the performance of the separator that BSC has designed, developed, and given to us to find its performance. So, our job was to build up this multi-feed flow loop and then incorporate their separator into the flow loop and test their performance."

The flow loop is designed to operate at a maximum water flow rate of 10m³/hr, an oil flow rate of 50ml/hr and a maximum pressure of seven bar. A range of oil droplet sizes can be introduced in the flow loop. After completion of the project, the flow loop will be used to support several PhD research.

Professor Hossain said the separator has the potential to transform the way the energy industry currently deals removing oil from water as it is smaller and has a higher flow rate. He added: "It will have a massive impact on the industry in terms of separating oil from water because their traditional system takes a lot of space, and our system will take less space. Another advantage of our approach is that we have a high flow rate compared to the traditional system."

"Our system also takes up less pressure drop to give you the same performance. So, it's better suited for, say, a life field, a matured field where we have in the North Sea where we cannot continue production because the natural pressure is low. Our system will allow us to extract as much oil and gas as possible before reaching the net zero target. Afterwards, we will switch to alternative products."

THOUGHT LEADERSHIP

AI: NAVIGATING AMIDST FEAR AND OPPORTUNITIES

by Professor Eyad Elyan



Back in 2018, I had the opportunity to deliver a presentation at a major company to demonstrate how Artificial Intelligence (AI) could assist in automating one of

their challenging and demanding tasks. At the end of my talk, I remember a gentleman who posed a question to me: “With 25 years of experience in this job, with all due respect, I can rely more on my gut-feeling than on AI”. I acknowledged that this is due to his extensive professional experience. I also pointed out that not everyone possesses such an experience and well-developed intuition. Intuitions and gut-feelings developed over long years of experience are great.

However, they can lead to flawed decision-making. AI is not a recent phenomenon, its origins can be traced back to the early 1950s. At its core, AI involves the extraction and generation of knowledge from vast amounts of data. It encompasses the creation of methods and models that enable computers to analyse and comprehend such data, learn from it, and make predictions or

forecasts. An example of AI in daily use is the ability of your mobile device to be unlocked using fingerprint or facial recognition. These applications rely on algorithms that have been exposed to a large number of images of human fingerprints or faces, allowing the devices to differentiate between individuals and their unique characteristics.

In a recent business trip to Houston, I had an interesting exchange with a border control officer at the airport who asked what I am doing for living. Upon learning that I work in AI, he exhibited both enthusiasm and apprehension regarding the potential risks AI might present to humanity. With a smile, he remarked, “Oh... you’re one of those guys!”.

It is fascinating to see how people’s interest in AI developed in the past few years. Five years ago, when I delivered a presentation showcasing the benefits of AI, I struggled to capture the interest of those in the room. Nowadays, merely mentioning the term AI is enough to spark engaging conversations with individuals from various backgrounds, be it a taxi driver, a border control officer, or a waitress at a restaurant. As a person working in the field, I see this is a positive sign rather than worrying one.

AI is not a recent phenomenon, its origins can be traced back to the early 1950s. At its core, AI involves the extraction and generation of knowledge from vast amounts of data.



The growing public awareness surrounding AI indicates an active involvement in discussions about its potential consequences. I see such public awareness and involvement as a positive sign, people will recognise the benefits of AI and data-driven applications in advancing various fields. Throughout history, humanity has consistently displayed impressive resilience and adaptability. Concerns about job losses, AI misuse, and monopolisation of AI research by powerful entities have been raised, much like in previous industries. However, just as in the past, we will likely overcome these obstacles and embrace the transformative potential of AI.

I frequently encounter inquiries about the potential eradication of humanity by AI and Robots, and my simple and short answer is no. It is essential to bear in mind that we label it as Artificial Intelligence and not Intelligence. Hence, while it is natural to worry and have concerns, panicking, banning, and overregulating is not justified really. Instead, our focus

should be on how to adapt our practices to leverage this progress effectively. For example, in education, we must reconsider how we teach, engage, assess, and prepare our students for future job opportunities.

In this era of exponential AI progress, with large language models and other generative AI applications, continuing to educate our students in the same traditional way is no longer acceptable. AI can now handle tasks like essay writing, solving math equations, generating voice-based videos, preparing presentations, and more. This remarkable ability of AI to undertake tasks that were once done by humans necessitates an urgent reassessment of our practices in education, health, and other industries. We should seize this opportunity to embrace AI’s potential and reimagine how we approach various sectors to make the most of these advancements.

FROM FLORIDA TO SCOTLAND: MY RGU JOURNEY INTO PHD PHYSIOTHERAPY

By Casey Farrell

“When I was preparing to apply for Doctor of Physiotherapy (DPT) programmes in the US, I remember opening the directory of US-accredited programmes and was surprised to see an option for “Programmes outside of the US.” When I clicked it, a single option appeared: Robert Gordon University. Born and raised within a 5-mile radius in Florida, I now found myself packing for Aberdeen in Scotland!

I knew I wanted to be a physiotherapist since I was sixteen. I liked the challenge of getting people moving in ways they never thought possible. My intrigue with research grew during my time at the University of South Florida (USF), where I did my undergraduate degree in Health Sciences. As a member of the USF Honors College, I was encouraged daily to be curious and drive for change through research and innovation. The Honors College also taught me the value of engaging as a global citizen, encouraging me to reach across borders whenever possible.

This combined interest in clinical work, academia, and global engagement drove me straight to RGU. **RGU's DPT programme** is a unique degree. It is an academic doctorate with a larger emphasis on research than the typical clinical doctorate programme in the US. I have formed several paths by joining this programme: I can work in the UK or the US and choose to work clinically, academically, or both.



My research involves heart surgery patients. There are a lot of risks involved with heart surgery, one of which is the potential for lung complications. Some of these lung complications can have fatal consequences that could end someone's life in a matter of days if left unnoticed. Physiotherapists are in a prime position to catch these complications early since we are the ones to assess and treat the lungs on day one after heart surgery. Unfortunately, the assessment techniques we currently use aren't overly reliable. Lung ultrasound (LUS) is a non-invasive, radiation-free diagnostic tool that provides live images right at the bedside.

Research shows LUS is as reliable as computerised tomography (CT), the gold standard for lung complications. I conducted a scoping review exploring the literature surrounding the use of LUS within the cardiac surgery population. Out of 90 reports, only five mentioned physiotherapists.

A cardiothoracic physiotherapy department in the UK uses LUS regularly in their intensive therapy unit (ITU). I conducted a mixed methods study, observing these physiotherapists and how they use LUS, quantifying its impact on their current practice. I then interviewed these physiotherapists to gauge their perceptions and experiences of LUS to understand its role in their practice better.

After my first two years, I qualified as a UK physiotherapist. Since then, I have worked part-time in the clinical settings of stroke rehabilitation, neurorehabilitation, ICU, and surgery as I continued my research full-time. Through my research, I got the opportunity to become accredited in LUS myself. I am also a practice-based lecturer for RGU's Peer Exercise and Community Activity Placement (PECAP), supervising Master of Physiotherapy students, and have helped with several research projects across RGU.

To top it off, I have been living in a foreign country on my own during a global pandemic and energy crisis. I won't lie; my time in this programme has been intense, requiring significant determination, passion, and drive, but I hope this programme's uniqueness and experience serve me well. Raised in one healthcare system and country and taught in another - it's a unique position to be in.

In the next year, I will return to the US with a new set of skills that will differ from those of my peers. I will leave with life-long friends and memories of the beautiful North East and coastal beaches. I hope to continue travelling globally, staying curious, and collaborating on ways we can push healthcare and physiotherapy forward internationally, using research and innovation.



I won't lie; my time in this programme has been intense, requiring significant determination, passion, and drive, but I hope this programme's uniqueness and experience serve me well.

School of Pharmacy and Life Sciences

Leading RGU researcher retires

Professor Cherry Wainwright, highly esteemed scientist and much-valued colleague of the School of Pharmacy and Life Sciences, has retired after 20 years leading cutting edge research at RGU.

Professor Wainwright featured in Stanford University's lifelong list of top 2% scientists worldwide for two consecutive years.



[▶ READ MORE](#)

School of Pharmacy and Life Sciences

A busy summer at PALS

[▶ READ MORE](#)

In mid-June, PALS hosted the second UK Harmful Algae (UKHA) meeting – a two-day event led by RGU Professors Linda Lawton and Christine Edwards and consisting of an organising committee from Centre for Environment, Fisheries and Aquaculture Science (Cefas), UHI Shetland, Scottish Association for Marine Science (SAMS), as well as RGU.

The UKHA group consists of scientists, industry and policy makers who look at advancing strategies and understanding on the science and impacts of marine and freshwater harmful algae/bacteria in the UK. Due to the pandemic, it had been four years since the previous meeting and therefore four years' worth of developments and opportunities to discuss. The collaborative conference saw two full days of activity, guest speakers, knowledge sharing, and networking with guest speakers including Dr Philipp Hess of Ifremer in France, and Dr Janina Costa of Sustainable Aquaculture, UK.

Research community boosted by the appointment of Chancellor's Fellows

As part of RGU's significant investment in research, 10 Chancellor's Fellows are being recruited to advance innovative research that responds to real-world challenges. The Chancellor's Fellows are part of RGU's ambitious **new research strategy** and will be focussing on interdisciplinary research and will be based across RGU's academic schools. As leading experts in their chosen fields, Fellows will develop a programme of research and knowledge exchange activities, producing high quality research materials and applying for external funding to support their work.

The current list of Fellows are: Laura Leuzzi, Gray's School of Art; Gael Morrow, School of Pharmacy and Life Sciences; Joanna Shim, School of Health Sciences; William Ball, School of Nursing, Midwifery and Paramedic Practice; Anne-Marie Foster, School of Creative and Cultural Business; Ruby Roberts, Aberdeen Business School; Ikechukwu Nkisi-Orji, School of Computing; Wei Zhang, National Subsea Centre; and Vinoth Ramalingam, School of Engineering.

[▶ READ MORE](#)

Aberdeen Business School

What is evidence-based practice?

Researchers in ABS launched a new project to explore the relevance of evidence-based practice (EBP) to HR decision making. Having looked to gain the expertise of HR leaders via a short and confidential online survey, the team will go on to further enhance their understanding of knowledge and attitude towards EBP in the HR sector.

Learn more about EBP, it's relevancy and importance



[▶ READ MORE](#)

Law School

Research findings reveal complex problems in end-of-life care

New research has identified the complex issues that arise in the care of children with life-limiting conditions in Scotland.

The extensive research project included interviews with both parents of children with life-limiting conditions and the healthcare professionals who treat them, producing a set of recommendations which aim to improve communication and decision-making processes throughout each vital and sensitive stage.

Findings found that one clinician admitted to parents feeling "undermined" and "dismissed" while another said that parents "just don't feel that they're being listened to". Permeating through results was the importance of "communication, communication, communication" with many saying that it could be better, including one parent who described their communicative experience as "very, very poor" and at times "a big loop where nobody would ever listen."

[▶ READ MORE](#)



School of Creative and Cultural Business and School of Nursing, Midwifery and Paramedic Practice



RGU to improve student nurses' digital literacy

RGU's nursing students are to benefit from new digital skills training for the first time. A new digital toolkit has been created as part of RGU's innovative 'Digital Literacy Project' to enhance the digital skills of nursing students.

The research team explored students' digital literacy skills across a range of competencies including digital well-being, digital innovation, digital learning and development and digital research.

The research, published in the **Journal of Advanced Nursing**, recommended tailoring digital skills training so that students are empowered to meet the demands of an evolving digital healthcare landscape.

[▶ READ MORE](#)

RESEARCH REVEALED

Research Revealed is continuing to bring our research to life through engaging and informative videos, articles, and multimedia content. Join us on a journey of discovery as we explore the world-changing research at RGU, where our academics and researchers make a real difference in the world through their cutting-edge work.

Work has begun on the fourth episode of the series and the previous editions can be viewed on the [Research Revealed web page](#).



If you are interested in taking part in future episodes of Research Revealed contact newsdesk@rgu.ac.uk.





STROMNESS



KIRKWALL

If you have any submissions or inquiries, you can contact the RGU Communications Team using the email provided below:

Email: RGUCommunications@rgu.ac.uk



CLICK HERE TO LEARN ABOUT THE LATEST RESEARCH AND OPPORTUNITIES AVAILABLE AT RGU.

