



**GFCC**

Global Federation of  
Competitiveness Councils

# 2024 GFCC Annual Meeting and Global Innovation Summit

Nov. 11-15 Belfast, Northern Ireland

# Accelerating Global Sustainability and Economic Inclusion

This report was created by Simone Melo, Elaine Rodriguez and Roberto Alvarez.

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The Global Federation of Competitiveness Councils (GFCC) is a network of leaders and organizations from around the world committed to the implementation of competitiveness strategies to drive innovation, productivity and prosperity for nations, regions and cities. The GFCC develops and implements ideas, concepts, initiatives and tools to understand and navigate the complex competitiveness landscape.

The Global Federation of Competitiveness Councils (GFCC) is a nonprofit, 501(c)(3) organization as recognized by the U.S. Internal Revenue Service. The GFCC's activities are funded by contributions from its member organizations.

For more information, please visit [www.thegfcc.org](http://www.thegfcc.org).



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# Table of Contents

A Message from the GFCC Leadership	4
From Our Hosts	
Queen’s University Belfast (QUB)	6
Centre for Competitiveness (CforC)	7
Reimagining the Future: Insights from Belfast’s Global Innovation Summit	8
2024 GFCC Annual Meeting	10
2024 Global Innovation Summit	12
The 2024 GFCC Call to Action: Building a Sustainable Future for All	14
Summit Agenda	16
<b>Day 1   Tuesday, November 12, 2024</b>	18
Exploring the Universe	19
Panel Conversation: Accelerating Global Sustainable Development Goals and Economic Inclusiveness	20
Panel Conversation: Seizing the Decarbonization Opportunity	22
Bridging Food Security & One Health is Pivotal to Society	24
Transforming the World via Innovation in Energy	24
Panel Conversation: Harnessing Partnership to Advance Food Security and One Health	26
Navigating the AI Revolution: Preparing for a World of Digital Transformation	28
Workshops	29
Panel Conversation: Advancing Global Sustainability — Key Recommendations & Feedback from Workshops	34

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<b>Day 2   Wednesday, November 13, 2024</b>	38
A Programme for Social Cohesion and Connection	39
Panel Conversation: Bringing Everyone into the Innovation Economy	40
Building a Resilient Economy Through Inclusion in Northern Ireland	42
Pioneering a Zero-Emissions Maritime Future	42
Panel Conversation: Expanding Productivity Frontiers in the Digital Age	44
Conversation: Enabling Place-Making Innovation	46
Opinion is the Lowest Form of Evidence - deploying data to drive a sustainable cancer revolution	47
Conversation: Harnessing the Economic Dividend of Health	48
InQUBate: Supporting Queen's Young Entrepreneurs	50
Datathon Highlights: Data-Driven Solutions for a Better Future	52
Workshops	53
Panel Conversation: Advancing Economic Inclusiveness – Key Recommendations & Feedback from Workshops	58
Global Competitiveness Awards	60
<b>Day 3   Thursday, November 14, 2024</b>	62
Perspectives for the Future	63
Panel Conversation: Making Innovation Partnerships Work in Practice	64
Panel Conversation: Breaking Barriers: The Impact of Women in Shaping an Innovative Economy	66
Navigating the Future: Embracing AI to Transform Our Workforce and Skills	68
Leading Northern Ireland Forward	68
Panel Conversation: Voluntary, Community and Social Enterprise (VCSE) – Innovating for Social Change	69
Greater Manchester's Transformation: An Inclusive and Sustainable Model for Building a City Region	71
Conversation: South-North Global Partnerships	72
Panel Conversation: Navigating the Competitiveness Landscape in a Fast-Changing World	74
Launch of GIS 2025	76
<b>Day 4   Friday, November 15, 2024</b>	77
Wrightbus	78
Catagen	79
Global Federation of Competitiveness Councils	80







# A Message From the GFCC Leadership

On behalf of the Global Federation of Competitiveness Councils (GFCC), we are delighted to present a report with key findings and insights from the 2024 Annual Meeting and Global Innovation Summit (GIS), held in Belfast, Northern Ireland, from November 11 to 15.

Belfast and Northern Ireland stand as living testimonies that we can close divides, build bridges, and improve reality on the ground and make the world a better place through dialogue and engagement. In the GFCC, we believe that focusing on win-win solutions is the best approach, and we strive to bring together all sectors to generate insights, share best practices, and ignite new projects. In this critical historical moment, we are confident in the importance of our approach and were truly inspired by our time in Belfast for the 2024 GIS.

Under the theme Accelerating Global Sustainability and Economic Inclusion, the GIS gathered over 850 participants from 30 countries to explore innovative models and strategies to optimize competitiveness by weaving together sustainability, technological progress, and inclusiveness - making the case that all three converge and contribute to long-term productivity and prosperity.

Distinguished speakers, panelists, and participants across all sectors of society joined us in Belfast and, over various days and activities, discussed the challenges and opportunities arising from AI and digitalization, cutting-edge innovations driving the energy transition, and the essential role of cooperation in advancing food security among other relevant topics impacting competitiveness agendas worldwide.

Our Annual Meeting brings together our community to engage in a closed-door, deep, and thoughtful conversation, sharing strategic information, insights, and lessons gained through real-world action. The Global Innovation Summit (GIS) is a broader, invitation-only event through which our community connects and exchanges insights and best practices with a broader group of leaders.

The GIS marked the official release of the GFCC's flagship publication, the 2024 Call to Action - Achieving a Sustainable Future for All. This groundbreaking document offers recommendations to governments, universities, industry, and civil society to frame sustainability and economic inclusiveness as an opportunity at all levels.

More than just a framework, the Call to Action serves as a catalyst for change, guiding competitiveness stakeholders in a transition from imagination and ideas to insight, ingenuity, invention, and impact. Our members and fellows co-created this document, reflecting the unique expertise and collaborative spirit of the GFCC community and testifying to our distinctive brain trust spanning 35 countries.

We invite you to read carefully Achieving a Sustainable Future for All and to take action. Our invitation is simple: select one of the 10 action areas outlined in the document and define a series of concrete initiatives you will implement in the coming months to drive progress in that area. If you have any suggestions or would like to connect with us and exchange ideas, the GFCC team will be at your disposal. Join us on this journey.

In the GFCC, leaders from across nations work together to shape a sustainable and prosperous world for all. Engaging and learning are essential parts of the GFCC experience. In tune with that, we designed our summit in Belfast to provide a unique platform to facilitate open dialogue, learning, and trust, beyond the intimate experience of the Annual Meeting. In addition to hosting panels and keynotes, our Summit agenda also included workshops with high-caliber subject matter experts that encouraged participants to share their perspectives and provide valuable contributions in a peer-to-peer setting. All these activities and the key findings and insights gained through them are extensively documented in the report.

Competitiveness is a tide that lifts all boats, and we have constantly emphasized the importance of cooperation in the GFCC. To our satisfaction, the events in Belfast marked the establishment of new connections and partnerships and were filled with important announcements, such as the launch of a dual PhD program offered by Queen's University Belfast and Aston University, building on a partnership sparked by the GFCC in 2023. We also expect many of the connections established in Belfast to mature over this year and result in new initiatives that will impact realities on the ground across the planet.

Being in Belfast and Queen's had great significance. Our events offered an inspiring opportunity for our community to rediscover Belfast. A city with a rich industrial heritage and a history of resilience, Belfast today stands as a global leader in advanced manufacturing, cybersecurity, digital arts and fintech. Its vibrant community of entrepreneurs and businesses exemplifies resilience, creativity, and economic prosperity. During the summit and the visits that concluded the events' agenda, we had the opportunity to meet many of the leaders shaping Belfast's and Northern Ireland's future economy. We learned inspiring stories and discovered exciting new ventures.

At Queen's, we learned about many innovative programs and initiatives involving students, industry, and the local community, and saw firsthand how universities can drive regional economic transformation and impact the communities they serve, while simultaneously pursuing research excellence.

The GFCC is a member-oriented organization and our events in Belfast were a culmination of a long journey. The week before, we had launched a new phase of the University and Research Leadership Forum at Aston University, in Birmingham, United Kingdom. Earlier in the year, we had many meetings, discussions and workshops in partnerships with our members in various nations. In 2025, we will start deploying a series of 'study trips' to university-anchored innovation ecosystems globally and take our Annual Meeting and Global Innovation Summit back to the United States, where the University of Pittsburgh will host us.

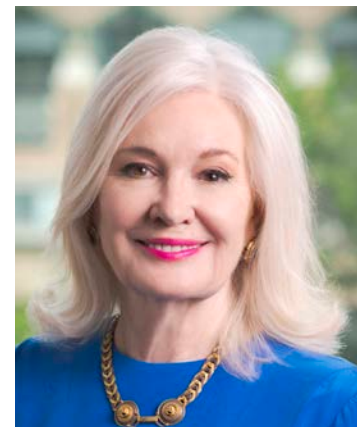
Our Annual Meeting and Global Innovation Summit in Belfast were made possible by the generosity of our members and hosts, Queen's University Belfast and the Centre for Competitiveness. The GFCC is a leadership network, and the success of our 2024 events is a testament to the dedication and vision of Professor Sir Ian Greer (Queen's President and Vice-Chancellor), Dr. Ryan Feeney (Queen's Vice-President of Governance and External Affairs and Registrar), and the leadership team at the Centre for Competitiveness: Dr. Stephen Kingon (Chairman), Dr. Bob Barbour (CEO), and Dr. Paul Madden (Director). We extend our sincere gratitude to all those who contributed to this remarkable event.

We hope you enjoy this report and the insights that emerged during our events in Belfast, which we are sharing here. Above all, we hope you join us for the journey in 2025.



*Charles O. Holliday Jr.*

**Mr. Charles O. Holliday Jr.**  
Chairman, Global Federation  
of Competitiveness Councils



*Deborah L. Wince-Smith*

**The Hon. Deborah L. Wince-Smith**  
President, Global Federation  
of Competitiveness Councils  
  
President & CEO, Council on  
Competitiveness

# From Our Hosts

## Queen's University Belfast (QUB)

On behalf of Queen's University Belfast, I would like to thank GFCC members, fellows, speakers, contributors, and attendees for making the 2024 Global Innovation Summit such an overwhelming success. We were truly honoured that the Global Federation of Competitiveness Councils chose to hold the 2024 Global Innovation Summit at Queen's, bringing the conference to the island of Ireland for the first time ever.

The Summit brought together thought leaders and key international figures from business and industry, government, higher education, third sector and communities, to discuss and devise solutions to some of the most pressing issues in our world today. Hosting the Summit at Queen's firmly placed our University and Belfast at the centre of these important discussions.

The Summit's themes of global sustainability and economic inclusion are at the heart of all that we do at Queen's.

Hosting the Global Innovation Summit at Queen's gave us the opportunity to showcase the groundbreaking research and solutions our University and wider region are providing in relation to sustainability and economic inclusion to a global audience.

It also allowed us to welcome international thought leaders to share their expertise and innovations. Keynotes included world-renowned experimental physicist Professor Brian Cox, visionary leader Cecilia Harvey, Founder of Tech Women Today, and Joe Kennedy III, Special Envoy to Northern Ireland for Economic Affairs, among many others.

The Summit also gave participants the opportunity to engage with peers, share global best practices, and take part in high-profile strategy conversations on the vital connections between sustainability, innovation, and competitiveness.

Participants heard from entrepreneurial Queen's students, as well as taking unique trips to innovation sites and heritage and tourist hotspots, experiencing all that Northern Ireland has to offer.

The 2024 Summit was the result of many months of substantial planning and hard work organised in partnership with the GFCC, the Centre for Competitiveness, Women in Business and Young Enterprise along with our sponsors NIE, Kainos, Historic Royal Palaces, Invest NI, Alteryx, Translink, River Rock and Accenture.

This year we are celebrating our 180th year as an institution. Over the last two centuries, Queen's has been a stable and trusted presence through political, constitutional, and societal change, making a major contribution both locally, and across the world.

We have firmly established ourselves as a global centre for key debates and conferences, and going forward into our 180th year we will continue to be a force of positive transformation, changing lives for the better by providing educational opportunities, driving prosperity, and finding solutions to the many major and existential challenges facing our communities and the wider world.

I am proud to include the Global Innovation Summit as one of the major global conferences held at our esteemed University. I know that through the insights and expertise shared throughout the Summit, we are taking crucial steps towards a more inclusive and sustainable future for generations to come, shaping the world for the greater good.



**Prof. Sir Ian Greer**  
President and Vice-Chancellor, Queen's University of Belfast



## Centre for Competitiveness (CforC)

On behalf of the Global Federation of Competitiveness Councils (GFCC), Queen's University Belfast and the Centre for Competitiveness were delighted to host the GFCC's 2024 Annual Meeting and Global Innovation Summit addressing the theme of "Advancing Global Sustainability and Economic Inclusion". A special thanks to my colleague Dr Paul Madden, Director at the Centre for Competitiveness for his outstanding leadership collaborating with Queens University and GFCC in making the summit such as success. Hundreds of leaders from industry, government, academia, and civil society came together to discuss global best practices and strategies connecting sustainability, innovation, and competitiveness.

Historically, as a region, Northern Ireland has created significant global impact through the creativity and knowledge of our citizens. Our manufacturing industry spans all four industrial revolutions from the 19th century, when the Belfast area produced half of the linen output for all of Ireland, through to the 21st century when our aerospace companies provided components for a Mars rover, pre-launch testing services for NASA's James Webb telescope and wings for the Airbus 220 aircraft. In between, we developed the pneumatic (inflatable) tyre for automobiles, we established a global reputation for marine engineering (Titanic), we invented the portable heart defibrillator, the aircraft ejector seat (which to date has saved over 7,700 lives) and we gave the world the TV series Game of Thrones. These are just some examples of our innovative capabilities.

Belfast is now a global leader in cybersecurity, AI, health sciences, advanced manufacturing and sustainability, offering excellent investment opportunities. Northern Ireland's economic priorities of good jobs, inclusive growth, increased productivity, and a sustainable economy aligned closely with the Summit's goals. The Centre for Competitiveness was established 25 years ago to assist organisations in the public and private sectors to drive innovation, improve productivity and deliver quality excellence. In a time of increasing geo-political

turbulence, these themes are just as relevant today and our engagement with GFCC allows us to keep abreast of international developments and thought leadership in sustainable economic development.

The 2024 Summit provided a platform for the exchange of ideas, knowledge, and best practices, and enabled us to show-case the achievements of some of our brightest young entrepreneurs. We explored the critical intersection of economic performance, social inclusion, and environmental protection and we considered how best to face the challenges and opportunities of balancing immediate needs with long-term sustainability goals, fostering inclusive economic models that promote resource efficiency and revitalize communities.

It was a significant privilege for us to be asked to host the GFCC's flagship annual event and we trust that those of you who visited Belfast will have left with a positive impression of what can be achieved through collaboration.



**Dr. Bob Barbour**  
Chief Executive Officer,  
Centre for Competitiveness

# Reimagining the Future: Insights from Belfast's Global Innovation Summit

Belfast, once a cornerstone of the Industrial Revolution, became a beacon for reflections and the sharing of best practices on innovation and competitiveness strategy during the GFCC Annual Meeting and Global Innovation Summit in 2024. With leaders from 30 nations — including long-time collaborators of the GFCC and new members and fellows alike — the Summit marked the GFCC's largest gathering to date. It was more than an event; it was a masterclass in catalyzing systemic change.

Being in Belfast alone was inspiring. The city's transformation mirrors that of Birmingham, where we convened just a week earlier. Both cities, iconic in their industrial heritage, are now redefining themselves in the face of rapid economic and societal shifts. Universities, especially, have taken center stage in these transformations, working in partnership with industry, civil society organizations and governments.

Queen's University Belfast, where the Annual Meeting and Global Innovation Summit took place, stands not just as a leading global research institution but as a convener deeply embedded in community and industry. For its turn, the Center for Competitiveness, an organization created by leaders who understood early on the necessity to purposefully advance the competitiveness of the Island of Ireland, has been a key player in initiatives that transcend the individual businesses they directly support. These efforts have driven systemic transformations across the economy, particularly at the intersections of energy, manufacturing, mobility and food systems.

In Belfast, GFCC members and fellows witnessed the vibrance of this ecosystem. With local entrepreneurs, media, civil society, research and government leaders mingling and exchanging ideas with our global community, the events shed light not just on Northern Ireland's experience but highlighted a variety of others globally.

This year, we took a different approach in organizing the Summit, emphasizing interaction. Inspired by the leadership of the Center for Competitiveness, the Summit incorporated workshops designed to foster dialogue and collaboration. Summit participants from across the globe engaged in active discussions, sharing best practices and insightful cases, questioning one another's ideas, confronting shared challenges, and synthesizing innovative solutions. Beyond that, cases, initiatives and the work of Queen's students and local startups were weaved into the agenda.

## Turning Ideas into Action

Translating concepts and strategies into real-world transformation and impact is not a simple task. Real action in complex systems like our economy and society depends on building shared visions, engaging multiple stakeholders and getting their buy-in. All of that is only possible if innovation and competitiveness strategy leaders can effectively communicate and work with various segments of society — from policymakers and business leaders to community members. Although not an easy task, it certainly is a critical one to drive meaningful change.

The importance of communication, empathetic leadership and meaningful engagement was one of the Summit's recurring themes. While policy experts, thought leaders and strategists often take their concepts, terminology and frameworks for granted, the challenge lies in making these concepts more accessible to a broader audience to build support. Transformation requires purposeful action and engagement with diverse sectors, demographics and geographies — a task that demands clarity, endurance and empathy.

## Bridging the Gaps

The core theme of the summit – accelerating global sustainability and economic inclusion – necessitates not just action but reframing. To change reality, we must reframe how we think about sustainability, making clear it encompasses much more than the environment. Sustainability is about the future feasibility of our societies, which can only be achieved through solid and sustainable economic models.

Summit presentations and discussions made it clear that economies do not exist in isolation of societies. Flourishing economies and prosperity are built on top of cohesive and functioning social systems. To advance economic prosperity we need to rethink strategies, confront widening disparities that may put social cohesion at risk and have clarity about the importance of societal well-being. Reducing friction, bridging divides, and aligning interests are essential for creating conditions where economies can thrive.

As conversations during the Summit flowed between advanced and emerging economies, between nations in the Northern and Southern hemispheres, it became clear that gaps are widening rather than closing. This realization demands new models of collaboration, as some of the most pressing challenges can only be effectively addressed via coordinated international efforts. In a time of increasing fragmentation, the summit was also a call for innovation within the global system itself.

From technology to the climate, the pace of change is accelerating, and with it comes turbulence – but also new and mostly unseen opportunities. To seize these opportunities, organizations, regions and countries need to dedicate resources to understand emerging trends and innovative frameworks to build coalitions and drive action. Innovation in institutions was never so timely.

Looking ahead, the legacy of the 2024 Global Innovation Summit has shown us that transformation is not just a concept – it's a commitment. It begins with reimagining how we collaborate at all levels. In the GFCC, we remain committed to our community in 35 countries and to evolving the way we work and our approach to enabling change via the empowerment of leaders, exchange of best practices and meaningful cross-sector engagements. Here's to an exciting 2025!

Thank you, Belfast.



**Dr. Roberto Alvarez**  
Executive Director,  
Global Federation of  
Competitiveness Councils



**Dr. Elaine Rodriguez**  
Director of Operations  
Global Federation of  
Competitiveness Councils

# 2024 GFCC Annual Meeting



The GFCC Annual Meeting brought together GFCC members and fellows from around the world to reflect on key achievements, explore emerging issues in competitiveness agendas, map priorities within member organizations, and welcome new additions to the GFCC network. GFCC members and fellows engaged in dynamic discussions on emerging themes in innovation and competitiveness strategy.

The Annual Meeting kicked off with a first session focused on the current state of the GFCC and its strategic vision. President Deborah L. Wince-Smith and Executive Director Roberto Alvarez highlighted recent activities and achievements, previewed initiatives under development, and presented the key principles of the "Achieving a Sustainable Future for All" Call to Action. A lively discussion moderated by President Wince-Smith ensued, with members and fellows offering recommendations and sharing how their local initiatives contribute to a more sustainable and equitable society.

The Annual Meeting marked the appointment of a new Vice-Chair for the organization. Chairman Charles "Chad" O. Holliday Jr. led Board of Trustees and all members in attendance in welcoming [Mr. Charles Kiefel AM as the new Vice-Chair of the GFCC Board of Trustees](#). Mr. Kiefel has been involved with the





Prof. Sir Ian Greer, The Hon. Deborah L. Wince-Smith and Prof. Aleks Subic.

GFCC for many years as a Distinguished Fellow, member — both his company, The Principals Funds Management, and the Australian Advisory Board on Competitiveness, which he chairs and represents on the Board of the GFCC, are members of our organization. Mr. Kiefel's expertise, commitment, and global standing will decisively contribute to expanding the reach and impact of the GFCC worldwide.

The meeting also served as a warm welcome to a diverse group of new GFCC members. Joining us from Australia were HEDx, Western Sydney University, The Principals Funds Management, the Australian Advisory Board on Competitiveness, and Netlinkz. We also welcomed Auckland University of Technology from New Zealand, the New Strategy Center from Romania, the Tsukuba Global Innovation Promotion Agency from Japan, and Kazakhstan's Growth Forum. The GFCC was also pleased to welcome to the meeting new members from North America: University of Pittsburgh and Vanderbilt University from the USA, and Sandra Duxbury from Canada. The Annual Meeting included a special session focused on discussions about the realities of our new members and learnings they gained in advancing competitiveness strategies at the regional and national levels.

The Meeting also showcased the work of the University and Research Leadership Forum, connecting the activities in Belfast with the "Universities 4.0 and Their Role in Driving Place-Based Innovation and Socio-Economic Transformation" Leadership Dialogue that took place in Birmingham on November 8, hosted by Aston University. During the Annual Meeting Professor Aleks Subic made a presentation and led a roundtable discussion on Place-Making Innovation, emphasizing the crucial role universities play in fostering innovation within the digital economy and, ultimately, being agents of change to transform the economies of the regions in which they are inserted. Under Subic's leadership, place-Making Innovation will be the focus of the Forum's work in the years to come. GFCC members and fellows from different parts of the world shared insights and best practices. In 2025 and 2026, the GFCC will execute a series of study-trips to university-anchored innovation ecosystems worldwide.

In line with the work of the University and Research Leadership Forum and building on a partnership catalyzed by the GFCC in 2023, Aston University and Queen's University Belfast signed an Agreement during the Annual Meeting to launch a dual PhD program in 2025 focusing on health tech, sustainable manufacturing, and digital finance. This program will strengthen collaborative research and training between the two institutions and promote internships with industry partners.

The Annual Meeting concluded with a dynamic session focused on cutting-edge topics in competitiveness strategy. In a series of four pocket presentations followed by roundtable discussions, members shared experiences and perspectives on critical emerging themes, including future studies, decarbonization, frontier markets and geostrategy. In this final session, leaders explored cases in 14 nations — plus experiences at the continental level in Africa — and discussed how turn the examples shared and ideas generated into actionable recommendations for integrating these subjects into national and regional strategies.

# 2024 Global Innovation Summit

At the 2024 Global Innovation Summit, co-hosted by Queen's University Belfast and the Centre for Competitiveness (CforC), leaders explored the theme “Accelerating Global Sustainability and Economic Inclusion,” discussing the critical intersection of economic performance, social inclusion, and environmental protection. Over three plenary days and a fourth day of site visits, the Summit examined how innovation drives sustainability, the role of inclusivity in the innovation economy, and the power of partnerships to accelerate progress.

The event built upon a longstanding partnership between Northern Ireland and the Global Federation of Competitiveness Councils (GFCC), a collaboration instrumental in fostering a thriving innovation and productivity ecosystem across the Island of Ireland. Once renowned for its tobacco, rope making, linen production, and shipbuilding, Belfast has evolved into a dynamic knowledge economy. This transformation has propelled Northern Ireland onto the global stage as a significant player, particularly in sectors like advanced manufacturing, ICT, cybersecurity, and fintech.

Efforts by the Centre for Competitiveness and Queen's University Belfast have contributed to this successful regional transformation. Queen's University Belfast, which is now approaching its 180th anniversary, is a global leader in education and research that is deeply connected to the Northern Ireland economy and society, playing a key role in advancing innovation. The Centre, established at the beginning of this century in



recognition of the need identified by Northern Ireland leaders to purposefully advance all-Ireland competitiveness, has not only been working with companies on the island but also engineering and leading public-private initiatives to bring new technologies and business models to market, driving innovation, competitiveness, and energy transformation.

The Global Innovation Summit, featuring over 130 speakers from 26 countries across business, government, higher education and civil society, served as a catalyst for high-profile connections, insight generation and developing global strategies towards a sustainable and equitable future. It also provided an opportunity for GFCC leaders to learn firsthand about key initiatives being driven by Queen's and the Centre and to engage in intimate discussions with the constituencies of these two GFCC members.



Recognizing the interconnectedness of environmental, economic, and social factors, participants showcased groundbreaking innovations with the potential to reshape industries and drive sustainability — examples include [Satalia's](#) Brand Brain AI marketing solution, [Artemis' eFoiler](#) zero-emission vessel and [Wright's Hydroliner](#), the world's first hydrogen double deck bus. The event solidified the understanding that sustainability must be the foundation of our future, harmonizing economic growth, environmental stewardship, and social inclusiveness through shared knowledge and cross-sector collaboration.

The four-day event, held from November 12 to 15 in Belfast, featured high-profile speakers and distinguished guests from across the UK and beyond, including physicist and broadcaster Prof. Brian Cox, the Mayor of Manchester, the Secretary of State for Northern Ireland, and the First Minister of Northern Ireland. The event also saw the participation of former U.S. Secretary of State Hillary Rodham Clinton and U.S. Special Envoy for Northern Ireland, Joseph Kennedy III. The Summit also featured a Datathon competition where 150 QUB students developed impactful data-driven solutions, a showcase of

innovative products by Queen's Young Entrepreneurs, and a first-time opportunity for Scot's College students from Australia to connect with a variety of high-profile leaders in the competitiveness strategy domain.

The summit events took place at some of Belfast's most remarkable sites. The Whitla Hall, at Queen's University Belfast's, held the daytime activities. The event organization welcomed a distinguished group of leaders for the GFCC annual Gala Dinner at the historic Great Hall, a special occasion when the GFCC presented its Global Competitiveness Awards. The Ulster Museum provided the backdrop for the welcoming cocktail reception, and a select group of participants enjoyed a special dinner at Titanic Belfast.

In Belfast, the GFCC presented the Global Competitiveness Awards to Dr. Martin Naughton, Dr. Stephen Kingon, Professor Sir Ian Greer, Dr. Bob Barbour, and Dr. Paul Madden for their leadership, tireless dedication to advancing innovation and competitiveness, forging cross-sector partnerships and commitment to shaping a better future. The week before the events in Belfast, the GFCC presented its Global Competitiveness Awards to Professor Aleks Subic, in a ceremony in Birmingham.

The 2024 Global Innovation Summit, held in a vibrant city that has reinvented itself from an industrial powerhouse to a thriving hub for knowledge-based industries, served as a symbol of the transformative power of innovation. The Summit's insights and commitments will inform and inspire collaborative action worldwide, helping shape a future where economic advancement, the use of human potential and environmental responsibility are not competing priorities, but rather the twin engines of a more prosperous world for all. Leaders from all continents attended the Summit, amplifying this message and contributing to global impact.

# The 2024 GFCC Call to Action: Building a Sustainable Future for All

In a world facing unprecedented challenges — and emerging opportunities that many are still not visualizing, the [2024 GFCC Call to Action](#), launched during the Global Innovation Summit, offers a bold vision for a sustainable future. This Call to Action focuses on sustainability and inclusiveness, representing the collective knowledge and insights of the GFCC community — a diverse network spanning over 35 nations and comprising influential leaders from government, industry, and academia.

The 2024 Call-to-Action aims to provide a framework that empowers nations, regions, and organizations to view sustainability through the lens of opportunity and inclusion. It seeks to provide the foundation to accelerate innovation and guide supportive regulation and investment toward a more resilient world and a sustainable future for all. This Call-to-Action comprises ten interconnected action areas, each with guiding principles and key strategies to drive its implementation.

1. Boost the productivity and regeneration of **natural resources**.
2. Accelerate **energy** transformation and seize emerging opportunities.
3. Incorporate sustainability and resiliency as key criteria for **infrastructure** development.
4. Adopt sustainable full life-cycle **production and consumption** models.
5. Nurture the health and **well-being** of communities to unlock sustainable growth.
6. Invest in **skills** to empower people to access high-paying work opportunities.
7. Balance long-term investment in **R&D** with accelerated translation and deployment.
8. Advance standards and metrics for data-based sustainability **governance and management**.
9. Use novel financial architectures to mobilize resources for sustainable **investment**.
10. Leverage education to forge a future innovation and sustainability-oriented **mindset**.







QUEEN'S  
UNIVERSITY  
BELFAST

2024 GFCC Annual Meeting at Queen's Business School.

GLOBAL INNOVATION  
SUMMIT 2024



# Summit Agenda

## Day 0 – Monday, November 11, 2024

Location: Ulster Museum

18:00 GIS Welcome Cocktail

## Day 1 – Tuesday, November 12, 2024

Location: Whitla Hall and Peter Froggatt Centre (PFC) at Queen's University of Belfast

09:00 Welcome to the GIS 2024

09:35 Opening Session: Exploring the Universe

10:35 Panel Conversation: Accelerating Global Sustainable Development Goals and Economic Inclusiveness

11:20 Navigating the AI Revolution: Preparing for a World of Digital Transformation

12:05 Launch of GFCC Call to Action

13:30 Transforming the World via Innovation in Energy

13:45 Panel Conversation: Seizing the Decarbonization Opportunity

14:30 Bridging Food Security & One Health is Pivotal to Society

14:55 Panel Conversation: Harnessing Partnership to Advance Food Security and One Health

## 15:55 Workshops

Workshop 1: Seizing the Decarbonization Opportunity

Workshop 2: Transforming the World via Innovation in Energy

Workshop 3: Food Security & One Health: innovation to accelerate solutions and improve economic growth, climate resilience and the nation's health

Workshop 4: Advancing Resources Productivity

Workshop 5: Accelerating Sustainability and Inclusiveness Through R&D

17:10 Panel Conversation: Advancing Global Sustainability – Key Recommendations & Feedback from Workshops

Location: Queen's Business School

09:00 Datathon at Queen's Business School in Partnership with Alteryx and Kainos

Location: Titanic Belfast

19:30 GIS Informal Dinner

## Day 2 – Wednesday, November 13, 2024

Location: Whitla Hall and Peter Froggatt Centre (PFC) at Queen's University of Belfast

09:00 Welcome to Day 2

09:10 Opening Session: A Programme for Social Cohesion and Connection

09:50 Panel Conversation: Bringing Everyone into the Innovation Economy

- 10:45 Pioneering a Zero-Emissions Maritime Future
- 11:05 Panel Conversation: Expanding Productivity Frontiers in the Digital Age
- 11:50 InQUBate: Supporting Queen's Young Entrepreneurs
- 13:00 Conversation: Enabling Place-Making Innovation
- 13:30 Datathon Highlights: Insights from the Leading Teams
- 14:10 Opinion is the Lowest Form of Evidence – deploying data to drive a sustainable cancer revolution
- 14:30 Conversation: Harnessing the Economic Dividend of Health
- 15:15 Workshops
- Workshop 1: Preparing the Workforce for the Digital Age
- Workshop 2: Reshaping the Business Landscape with AI
- Workshop 3: Transforming Regional Economies via Innovation
- Workshop 4: Health for all - Bridging the Gap
- Workshop 5: Making Sustainable Manufacturing a Reality
- 16:45 Panel Conversation: Advancing Economic Inclusiveness – Key Recommendations & Feedback from Workshops  
Location: Great Hall at Queen's University of Belfast
- 19:30 Welcome to the Gala Dinner
- 20:45 GFCC Global Competitiveness Awards
- 21:15 InQUBate prize presentation
- 12:05 Panel Conversation: Voluntary, Community and Social Enterprise (VCSE) – Innovating for Social Change
- 13:45 Greater Manchester's Transformation: An Inclusive and Sustainable Model for Building a City Region
- 14:20 Conversation: Making Innovation Partnerships Work in Practice
- 15:05 Conversation: South-North Global Partnerships
- 15:30 Panel Conversation: Navigating the Competitiveness Landscape in a Fast-Changing World
- 16:15 Launch of GIS 2025
- 16:30 Event Closing  
Location: Mandela Hall at Queen's University of Belfast
- 09:00 Fringe Event: Women in Business  
Location: Quad at Queen's University of Belfast
- 09:00 Young Enterprise NI

## Day 4 – Friday, November 15, 2024

- 10:00 Industry Site Visit to Wrightbus, Ballymena
- 12:00 Catagen, Belfast

## Day 3 – Thursday, November 14, 2024

Location: Whitla Hall at Queen's University of Belfast

- 09:30 Welcome to Day 3
- 09:40 Perspectives for the Future
- 10:00 Leading Northern Ireland Forward
- 10:20 Navigating the Future: Embracing AI to Transform Our Workforce and Skills
- 11:20 Panel Conversation: Breaking Barriers: The Impact of Women in Shaping an Innovative Economy

# Day 1

# Nov. 12, 2024



## Hosted by Wendy Austin

To enhance the Summit experience, a prominent media personality hosted each day. Belfast native Wendy Austin hosted the first day. She is a former journalist and broadcaster for BBC, known for her insightful interviews and engaging presentations.



# Theme: Innovation is the Key to Sustainability

The first day of GIS 2024 showcased how technological advancements and creative solutions drive sustainability. Experts presented cutting-edge innovations transforming industries and forging a path toward a greener future.

## Exploring the Universe

### Prof. Brian Cox, CBE FRS

CERN Physicist and Broadcaster and Professor of Particle Physics, Manchester University

Prof. Brian Cox captivated the audience with his insights into the wonders of the universe. Best known for his science documentaries, such as "Wonders of the Universe" and "Human Universe," and several bestselling books like "Human Universe", "Why Does  $E=mc^2$ " and "The Quantum Universe" Professor Cox articulated the power of science and scientific discovery to inspire and unite.

Science has this incredible ability to shock us, to excite us, and ultimately to bring us together. With his talent for explaining complex scientific concepts in an accessible and engaging way, Cox led the audience to imagine the very first moments of the universe. By recreating conditions just 1/10,000,000,000th of a second after the Big Bang, we might unlock the universe's secrets, revealing its simplicity underlying all of existence. Echoing quantum physics in our everyday world serves as a reminder that everything is connected. Investing in science isn't just about knowledge; it's about fostering innovation, driving economic growth, and securing a future where humanity continues to push the boundaries of discovery.



PANEL CONVERSATION

# Accelerating Global Sustainable Development Goals and Economic Inclusiveness

**MODERATOR**

**The Hon. Deborah L. Wince-Smith**

Founder and President, GFCC  
President and CEO, Council on Competitiveness, USA

**DISCUSSANTS**

**Lulzim Basha**

Chairman, Democratic Party of Albania, Albania

**Charles "Chad" O. Holliday Jr.**

Chairman, GFCC, USA

**Charles Kiefel AM**

Chairman, The Principals Funds Management  
Founder and Chair, Australian Advisory Board  
on Competitiveness  
GFCC Distinguished Fellow, Australia

**Prof. Miguel Marques**

Vice-Rector, Catholic University of Portugal, Portugal

**Antonios Sagris**

Head of Group Corporate Development and ESG,  
Piraeus Bank, Greece

The world grapples with multiple challenges today. From climate change, energy security, and water scarcity, to poverty, food safety, and inequality. We need bold action to tackle these issues and a comprehensive strategy to boost competitiveness all while paving the way for a greener, fairer, and more sustainable world by 2030 and forge new avenues for value creation and growth. During the discussion, panelists explored their countries' priorities and strategies to embed sustainability and inclusiveness into policies and initiatives to improve productivity and advance competitiveness.

Facilitating an energy transition is crucial for achieving sustainable development that not only ensures affordable, reliable, and sustainable energy for all (as outlined in SDG number 7) but also fosters the creation of new industries and jobs. As GFCC Chairman Chad Holliday highlighted, persuading the public to commit to these long-term goals poses a key challenge. "People are not interested in making a sacrifice now to have a better climate in the future." He observed. "How do you firm this commitment? People want to see progress now. Making positive impact on peoples' lives now has to be a key part of what we're doing." For him, societies do not necessarily need to prioritize investing in new technologies at this stage but should instead focus on adopting effective collaborative approaches to meet the SDGs.

The Catholic University of Portugal is taking proactive steps to address these challenges by embedding sustainability into its growth strategy and curricula across its 15 faculties, Vice-Rector Miguel Marques commented. The university aims to equip the next generation with a purposeful mindset, emphasizing that sustainability extends beyond environmental protection and climate change mitigation. The university envisions sustainability going beyond advancing environmental protection and mitigating climate change effects to address social issues and find the balance between generating wealth and redistributing it to society.



Prof. Miguel Marques, Charles Kiefel AM, Charles "Chad" O. Holliday Jr., The Hon. Deborah L. Wince-Smith, Antonios Sagris and Lulzim Basha.

Financial institutions are crucial for driving the transition. For Antonios Sagris, Head of Group Corporate Development and ESG at Piraeus Bank in Greece, sustainability in everyday operations should be seen as a competitive advantage. "Banks operate in various vital sectors of the Greek economy, such as agriculture, energy, and transportation, and we have a significant role to play in supporting transition plans", says Mr. Sagris.

Panelists also addressed the need to enhance economic efficiency in underperforming areas to bolster economic outputs that align with the SDGs. Charles Kiefel AM highlighted Australia's struggle with low productivity in its public sector, but also the potential of Australia's raw materials industries, particularly the country's vast, underutilized uranium reserves. "Australia has a third of the world's supply of uranium," he noted, advocating for leveraging these resources to boost productivity and strengthen the economy through exports, particularly to allies like the United States.

In Albania, while energy primarily comes from hydropower, the country lacks the technological advancements needed to improve efficiency in its infrastructure and heating systems, leading to high energy costs. Lulzim Basha highlighted that transforming these sectors to become more cost-efficient can significantly increase economic output and support sustainable development.

## Key takeaways

- **Cooperation is key to advance Sustainability:** Strong collaboration across sectors is essential for achieving sustainable development. Governments, academic institutions, and businesses must innovate in the frameworks they use to work together to create inclusive, innovative, and sustainable strategies that balance economic growth with social and environmental well-being.
- **Frame Sustainability as an Advantage:** It is crucial to position sustainability as benefiting individuals and organizations to foster commitment and action. When people see themselves as direct beneficiaries of sustainable practices, the likelihood of success increases. Success will depend on tuning sustainability initiatives to generate tangible results for communities and citizens in the short and mid-term.
- **Understand the Broad Nature of Sustainability:** Multiple dimensions comprise sustainability, and they must work in harmony. It involves environmental preservation, fostering inclusiveness and balance within the social fabric, and driving economic activity to generate wealth and value. Achieving true sustainability requires integrating these facets to ensure positive impact on all segments of society and to build support for competitiveness strategies.



PANEL CONVERSATION

# Seizing the Decarbonization Opportunity

**MODERATOR**

Charles "Chad" O. Holliday Jr.  
Chairman, GFCC, USA

**DISCUSSANTS**

**Dr. Steven Ashby**

Director, Pacific Northwest National Laboratory, USA

**Prof. John Barry**

Professor of Green Political Economy & Co-Director of the Centre for Sustainability, Equality and Climate Action, Queen's University of Belfast, NI

**Debbie Caldwell**

Climate Commissioner, Belfast City Council, NI

**Dr. Manny Pohl**

Chairman and CIO, EC Pohl & Co, GFCC Distinguished Fellow, South Africa

**Marguerite Sayers**

Deputy Chief Executive Officer, ESB, Ireland

The energy transition has become both a moral and economic imperative to mitigate the impacts of a warming planet – and can also generate new growth and inclusiveness opportunities via green jobs, for instance. However, uncertainty surrounds the pathway and pace of decarbonization. While opportunities abound, such as the development of new industries and innovative business models, the risks of penalizing certain communities, demographics, social groups and even nations during this transition are an increasing cause of concern. Developing nations, in particular, face immense challenges, as they often lack the resources to fund clean energy initiatives while still relying on affordable electricity to sustain livelihoods and economic stability.

A successful energy transition must combine technological innovation with inclusive strategies to create jobs that lift people out of poverty. This journey begins by fostering global dialogue, especially in the Global North, to build policy support and public investment for bearing the short-term costs of transitioning to clean energy, which promises long-term economic and environmental benefits. Early education is also crucial - children from early age should be taught the value of sustainable practices and encouraged to pursue STEM careers, which play a critical role in scientific discovery essential for the green economy.

At the same time, growing geopolitical instability poses challenges to the energy transition while also highlighting opportunities to invest in circular models. For example, Northern Ireland continues to spend £9 billion annually on fossil fuel imports. Transitioning to renewable energy through wind, solar, geothermal, and biomethane investments could not only reduce dependency on imports but also create local jobs and boost the regional economy.



Prof. John Barry, Marguerite Sayers, Dr. Manny Pohl, Debbie Caldwell, Dr. Steven Ashby and Charles "Chad" O. Holliday Jr.

Public-private partnerships that engage local businesses, universities, and communities are vital for success. Governments, in particular, can play a pivotal role, leveraging their resources and procurement power to accelerate progress. Tools such as performance contracts, power purchase agreements, and heat supply agreements can drive rapid advancements in clean energy adoption while ensuring long-term benefits for all stakeholders.

## Key takeaways

- Craft a Compelling Shared Vision and Bring People Along:** Decarbonization demands a collective effort, and everyone has a role to play. Build a powerful vision and connect with others who share it. Foster public-private partnerships that engage academia, industry, businesses, and investors. Stakeholders with different expertise and resources when united by a shared goal with clear roles can achieve remarkable progress.
- Invest in Science and Engineering:** Driving the energy transition requires harnessing the power of science and technology. Innovation, supported by investments in fundamental research, will unlock sustainable solutions. This includes advancing alternatives for energy and grid storage at scale, creating new battery materials with enhanced performance, and fostering breakthroughs that will shape a cleaner and more efficient energy future.
- Adopt a Systems Approach:** Decarbonization requires a comprehensive perspective. Technological advancements should be integrated within the broader system, considering their impact on jobs, communities, and existing infrastructure. To achieve meaningful progress at scale and speed, civil society, businesses, governments and industry must move beyond thinking exclusively about technologies and operating in silos, they need to embrace a fully integrated approach to the entire energy system. For example, government policies can incentivize private investment in clean energy, while public awareness campaigns can drive consumer demand for sustainable products. Collaboration and cohesion are essential to driving impactful changes across all aspects of the energy ecosystem.



## Bridging Food Security & One Health is Pivotal to Society

**The Right Honourable Baroness Minette Batters DL**

Former President (2018–2024), National Farmers' Union of England and Wales, UK

The One Health approach recognizes the intricate link between human, animal, and ecosystem health on local, national, and global scales. Applying this to food production requires a multifaceted approach inspired by pioneers like Norman Borlaug, who spearheaded the Green Revolution. Achieving a One Health food system demands the inclusive representation of diverse stakeholders, including farmers, consumers, policymakers, and scientists, who must be actively involved in shaping sustainable agricultural practices. Governments need to prioritize food security through policies that incentivize sustainable agriculture and protect natural resources, while also establishing measurable targets and metrics to track progress towards a resilient and equitable food system.

Drawing from her experience in Africa, Batters emphasized the importance of empowering local communities and learning from their sustainable practices. Empowering farmers to adopt sustainable practices and share their knowledge is crucial for long-term success. This must be coupled with a new economic model that recognizes the value of ecosystem services and biodiversity to drive sustainable food production. Learning from local communities and their traditional ecological knowledge is vital, as is responsible investment in agriculture that avoids land grabs and empowers local farmers. A renewed focus on food production requires public engagement, precision breeding techniques, and resource efficiency to create a sustainable and equitable food system.



## Transforming the World via Innovation in Energy

**Stephen Gallagher**

Director of Strategy and Low Carbon Solutions, SSE Energy Solutions, UK & Ireland

The energy transition demands urgent investment in renewables to meet the ever-growing global electricity demand. SSE is driving this transition by investing in cutting-edge technologies and solutions such as carbon capture, green hydrogen production, and AI-powered energy management systems. Empowering customers to optimize their energy use through innovative tools, like dedicated apps, is another key factor in the transition. Furthermore, the company is developing AI-powered platforms to monitor the environmental impact of renewable energy infrastructure, such as puffin populations near offshore wind farms. In summary, Gallagher emphasized the importance of both technological advancement and customer-centric solutions in accelerating the energy transition and called for collaborative action across industries to achieve a more sustainable future.





Gala Dinner 2024  
and  
Global Competitiveness Awards Ceremony

GLOBAL COMPETITIVENESS AWARDS CEREMONY  
GALA DINNER 2024

GLOBAL COMPETITIVENESS AWARDS CEREMONY  
GALA DINNER 2024

GLOBAL COMPETITIVENESS AWARDS CEREMONY  
GALA DINNER 2024

2024 GIS Gala Dinner at the Great Hall, Queen's University Belfast.



PANEL CONVERSATION

# Harnessing Partnership to Advance Food Security and One Health

**MODERATOR**

**Prof. Wayne Powell**

Principal and Chief Executive, SRUC, UK

**DISCUSSANTS**

**The Right Honourable The Baroness Minette Batters**

Former President (2018 - 2024), National Farmers' Union of England and Wales, UK

**Dr. Peter Dorhout**

Vice President for Research, Iowa State University, USA

**Prof. Ursula Lavery MBE**

Technical and R&D Director, Pilgrim's Europe, UK

**Phillip Phiri**

Executive Director, National Competitiveness Commission (NCC), Zimbabwe

**George Scutaru**

Chief Executive Officer, New Strategy Center, Romania

**Prof. Ken Sloan**

Vice-Chancellor and Chief Executive Officer, Harper Adams University, UK

Food security is more than just producing enough food to feed the global population. It represents a multifaceted international challenge with profound implications for global stability. Addressing this issue requires building resilient supply chains, adopting circular models to minimize food waste, and leveraging innovation to enhance food distribution. George Scutaru pointed out that shifting weather patterns and geopolitical instability pose significant risks to the viability of the current system, adding other elements to the equation, like keeping open and securing sea transportation routes.

Achieving food security requires a unified, collaborative global effort. Panelists highlighted the importance of fostering "two-way partnerships" between the Global North and South, linking financial resources, research, and technologies to regions with available arable land and untapped agricultural potential. Phillip Phiri, Executive Director of the National Competitiveness Commission (NCC) of Zimbabwe, emphasized the importance of partnering with the African continent. With 60 percent of the world's uncultivated arable land, the continent lacks financial and technical resources that could enhance productivity. For example, African agricultural productivity in fruit harvesting is approximately half the global average. "If you look at developing countries like Brazil, India, and Ukraine, the production of crops is about two and a half times higher than in Africa because they employ more technology. There is an opportunity for countries to partner with Africa to sustain food security globally," says Phiri.

These partnerships should transcend aid, emphasizing shared benefits and genuine collaboration. Ken Sloan stated that we need "to make a shift from seeing partnerships based on aid to one which is about co-success". Peter Dorhout shares a similar vision. Iowa State University and the National Institute of



George Scutaru, The Right Honourable The Baroness Minette Batters, Prof. Ursula Lavery MBE, Prof. Ken Sloan, Phillip Phiri, Dr. Peter Dorhout and Prof. Wayne Powell.

Antimicrobial Resistance Research and Education run a project in Uganda that takes students, staff, and faculty to the country to work with local communities. Dorhout explained that "the idea is to learn from them and understand their needs and the challenges they face related to infectious diseases with antimicrobial resistance".

## Key takeaways

- Accelerate adoption and diffusion of new technology in regions facing severe food insecurity:** Societies are experiencing a golden era of science and technology. However, technological advancements remain unevenly distributed. To achieve food security, it is crucial to accelerate the adoption and diffusion of innovations by driving institutional advancements that facilitate faster absorption, deployment, and widespread impact of technologies. These innovations can enhance cultivation and harvesting processes while strengthening supply chain resilience.
- Embrace circular models:** Circular models are essential for achieving food security, as they optimize resource use across farming, energy, and livestock systems. This requires fostering an enabling environment for circular economy entrepreneurs and businesses who are developing innovative solutions in areas such as waste reduction, resource recovery, and sustainable agriculture. These models not only enhance sustainability but also address critical challenges such as zoonotic diseases, ensuring a more resilient and efficient food system.
- Prioritize access to food as sustainability goal:** We live in an unbalanced food system. While pockets of the world are overproducing, people in underdeveloped regions still face starvation and severe malnutrition. Any commitment to achieving the Sustainable Development Goals (SDGs) must look first at food as a basic entitlement. Without food security, societies cannot commit to other SDGs.





## Navigating the AI Revolution: Preparing for a World of Digital Transformation

### Daniel Hulme

CEO & Founder, Satalia

Artificial intelligence (AI) is more than just an analytical tool; it has the potential to revolutionize decision-making and reshape society. While often misinterpreted as solely a means of analyzing data, the true power of AI lies in its ability to enhance human capabilities and solve complex problems that surpass the limitations of human intuition.

AI has six key applications: automating tasks, generating content, representing humans in virtual environments, facilitating machine learning, enabling complex decision-making, and augmenting human abilities. Furthermore, AI's potential

macro impacts, or "singularities," could reshape society across six key areas: political, environmental, medical, technological, legal, and economic. These range from the rise of a post-truth world to the possibility of AI consciousness and a future where human labor is largely automated.

However, the development of AI must be purpose-driven and prioritize ethical considerations to ensure it benefits humanity. By focusing on responsible AI development, we can harness its transformative power for the betterment of society.

# Workshops<sup>1</sup>

The GIS 2024 workshops extended the day's plenary panel conversations with dynamic, interactive sessions. The workshops offered delegates a platform to engage directly in the subject matter, offering their unique perspectives and contributing to a deeper understanding of each topic. Each workshop commenced with the moderator synthesizing the key issues, challenges, and recommendations arising from the plenary discussions. Subsequently, a panel of expert discussants shared their insights and proposed actionable steps to advance the agenda related to the workshop's theme. The concluding segment of each workshop focused on summarizing the collective insights and identifying key action points.

On Day 1, the workshops centered around five critical themes: seizing the decarbonization opportunity, transforming the world via innovation in energy, food security and one health, advancing resources productivity, and accelerating sustainability and inclusiveness through R&D. Each workshop moderator then presented distilled insights and action points to the broader audience in a final plenary session moderated by Dr. Roberto Alvarez, Executive Director of the GFCC.



Dr. Paul Madden

<sup>1</sup> We are grateful to Paul Madden for organizing the workshops and to all notetakers (Ronan Staunton, Bob Barbour, Barbara Lima, Sandra Moffett, Marianne Cushey, George Wilson and William Ussher) for providing us with the workshop notes.

## Workshop 1: Seizing the Decarbonization Opportunity

### MODERATOR

**Ellvena Graham OBE**, Chair, Tourism Northern Ireland, NI

**Debbie Caldwell**, Climate Commissioner, Belfast City Council, NI

**Tim Cox**, Whole Systems Director, NIE Networks, NI

**Karen Hennessey**, CEO, Real Leaf Farm, Ireland

**Prof. David Rooney**, Dean of Internationalisation and Reputation, Queen's University of Belfast, School of Chemistry and Chemical Engineering, Research Centre in Sustainable Energy, NI

Decarbonization is not merely a critical response to climate change; it's a powerful catalyst for economic growth. Northern Ireland's tourism industry exemplifies this potential, with innovators like the Boat Yard Distillery and Killeavey Castle leading the way in waste reduction and resource management. Similarly, embracing technologies like hydroponics can significantly reduce reliance on carbon-intensive imports.

Cities are crucial hubs of innovation, and a "whole-systems" approach to decarbonization is essential. This involves fostering cross-sector collaboration, securing long-term strategic finance, and embracing digital technologies, renewable energy, economic growth, sustainable agriculture, and manufacturing as advocated by David Rooney's "DREAM" framework.

Electrification powered by renewables is another key pathway, alongside a human-centered energy transition that prioritizes community engagement and new consumption models. However, unique challenges exist in regions like Africa, where targeted support for technology transfer, training, and funding is crucial. Ultimately, accelerating decarbonization requires a multifaceted approach that addresses skills development and ensures the access of all segments of society to sustainable solutions.

## Workshop 2: Transforming the World via Innovation in Energy

### MODERATOR

**Mark McGranaghan**, Fellow, Electric Power Research Institute (EPRI), Ireland

**Dr. Steven Ashby**, Director, Pacific Northwest National Laboratory, USA

**Kelly Becker**, President, Schneider Electric, France

**Raymond C Decorvet**, Senior Account Executive, Mann Energy, Switzerland

**Thorsten Heller**, Chief Innovation Officer, GE Vernova, Sweden

**Andrew Keane**, Director, NextSys, University College Dublin, Ireland

**Marguerite Sayers**, Deputy Chief Executive Officer, ESB, Ireland

Innovation plays a crucial role in transitioning to a sustainable energy future. Experts from diverse sectors discussed the challenges and opportunities associated with integrating renewable energy sources, modernizing the grid, and developing advanced energy storage solutions.

Modernizing the electricity grid is paramount to accommodate the increasing reliance on renewable energy sources like solar and wind power. This modernization calls for the development of new grid architectures, advanced controls, and transactive energy systems that empower consumers to actively participate in grid management. To address the intermittent nature of renewable energy and ensure the grid stability and resilience, innovative storage solutions are also essential. Research efforts include safer, more reliable, and longer-lasting batteries, with a particular focus on flow batteries utilizing earth-abundant materials. Long-duration and seasonal storage options are also critical areas of investigation.

The use of Artificial intelligence and machine learning offers a pathway to accelerate scientific discovery, optimize grid operations, and enhance decision-making in the energy sector. This includes using AI to identify promising battery materials and develop intelligent grid management tools.

In addition to solutions towards the incorporation of renewable energy into the grid, other promising solutions and areas of development are heat pumps and the conversion of biomass into sustainable fuel. Large-scale heat pumps are a promising technology for reducing emissions in heating systems.



Their efficiency and scalability make them suitable for various applications, and further investment is needed to accelerate their adoption. Converting biomass into sustainable fuels and valuable byproducts have the potential to decarbonize various sectors. Research is exploring diverse biomass sources and the potential for extracting critical minerals from biomass ash.

Energy innovation requires multifaceted solution and collaboration across various disciplines and sectors including technological advancements, policy interventions, and social engagement as critical components in achieving a sustainable energy future.

### Workshop 3: Food Security & One Health: innovation to accelerate solutions and improve economic growth, climate resilience and the nation's health

#### MODERATOR

**Prof. Nigel Scollan**, Queen's University of Belfast, Institute of Global Food Security, NI

**Kerri Crossey**, Global RDA Project Manager, Kerry Group, Ireland

**Heather Jenkins**, Agri-Food, Supply Chain Development and Commercial Strategy Consultant; Director of Buying Waitrose (2008-2018), UK

**Dr. Jan Mládek**, Director, The Czech Institute of Applied Economics, Ltd.; Former Minister of Agriculture, Czech Republic; Former Minister of Industry and Trade, Czech Republic; GFCC Distinguished Fellow, Czech Republic

**Anne Richmond**, Head of Research and Development, Pilgrim's Europe, UK

**Prof. Akinori Yamanaka**, Director, West Tokyo International Innovation Co-Creation Hub, Japan

To enhance food security and improve human health, the workshop emphasized the need for innovation in agriculture, food production and distribution, with a focus on climate resilience. Sustainable farming practices that prioritize soil health and environmental protection, while ensuring economic viability for farmers, are crucial. Stronger collaboration between farmers, agribusinesses, supermarkets, and policymakers is also essential to drive sustainable food systems. This includes developing supportive food policies and potentially establishing a dedicated government department for food, agriculture, and human health.



Workshop 3.

Digital technologies and artificial intelligence are increasingly important tools for optimizing food production, monitoring animal health, and enhancing supply chain resilience. Biotechnology plays a key role in improving sustainability and utilizing byproducts from food processing. Given that food security is a growing concern, exacerbated by climate change impacts such as natural disasters, collaborative efforts between industry, academia, and farmers are essential to ensure access to nutritious food.

Clear communication across stakeholders and the public is vital to promote sustainable food production and healthy diets. The agricultural sector must embrace innovation and change to ensure its long-term viability and competitiveness. Sustainable meat production practices are needed to provide a healthy protein source while minimizing environmental impact. Ultimately, reducing the overall environmental footprint of food production is crucial for climate resilience and long-term sustainability. By fostering innovation and collaboration, the workshop aimed to address the complex challenges facing food security and promote a more sustainable and resilient food system.



Workshop 4.

## Workshop 4: Advancing Resources Productivity

### MODERATOR

**Prof. Jim Metson**, Senior Advisor, Newmarket Campus Development, University of Auckland; GFCC Senior Fellow, New Zealand

**C. Derek Campbell**, Executive Chairman, LVC Global Holdings Ltd.; GFCC Distinguished Fellow, USA

**Dr. Walter Copan**, Vice President for Research and Technology Transfer, Colorado School of Mines, USA

**Kainar Kozhumov**, Partner, Center for Research and Consulting (CRC), Kazakhstan

**Mark Minevich**, Founding Partner and Chairman, Going Global Ventures (GGV); GFCC Senior Fellow, USA

During the discussion on Advancing Resource Utilization, the conversation rapidly transcended traditional logistical concerns, shifting towards the social aspects of resource access. Participants strongly emphasized the ethical imperative and the practical necessity of engaging with local communities and recognizing the detrimental effects of past resource exploitation practices. The workshop also brought to light the growing concern surrounding the digital divide, particularly the increasingly asymmetrical distribution of digital talent, posing a significant challenge to inclusive and sustainable resource utilization.

All stakeholders focused on resource productivity should prioritize circularity. To advance this, researchers must investigate new materials, processes, products, and supply chains. Product design should prioritize simplicity, clean materials, and circularity principles. This requires significant development, creating opportunities for innovators to bring new circular designs and models to market.

## Workshop 5: Accelerating Sustainability and Inclusiveness Through R&D

### MODERATOR

**Dr. Padma Raghavan**, Vice Provost for Research and Innovation and Chief Research Officer, Vanderbilt University, USA

**Marcel Foca**, Senior Expert, New Strategy Center, Romania

**Deborah Gordon**, Senior Advisor, Longview Fusion Energy Systems, Inc.; GFCC Senior Fellow, USA

**Dr. Wendy McCloone**, Director of Research, Queen's University of Belfast

**Dr. Mmboneni Muofhe**, Deputy Director-General, Department of Science and Innovation, South Africa

**Dr. Nathan Skillen**, Assistant Professor in Sustainability (Brewing & Distilling), School of Engineering and Physical Sciences, Herriot-Watt University, UK

**Prof. Jay Walsh**, Vice President for Economic Development and Innovation, University of Illinois, USA

Research and development are critical for driving economic growth and inclusivity, particularly in the context of sustainability. To effectively address the complex challenges of sustainability, interdisciplinary collaboration and diverse perspectives are essential. This collaborative approach must recognize the differing needs of various stakeholders, including urban and rural communities, diverse economic sectors, and societal groups.

Inclusivity is key to achieving sustainability goals. This involves engaging a wide range of stakeholders in the innovation process and ensuring that solutions are co-created with the communities they intend to serve. Crucially, this collaborative approach requires building trust between innovators and public organizations to foster effective knowledge sharing and partnership.





2024 GIS Gala Dinner at the Great Hall, Queen's University Belfast.



PANEL CONVERSATION

# Advancing Global Sustainability – Key Recommendations & Feedback from Workshops

**MODERATOR**

**Dr. Roberto Alvarez**  
Executive Director, GFCC

**DISCUSSANTS**

**Ellvena Graham OBE**  
Chair, Tourism Northern Ireland, NI

**Mark McGranaghan**  
Fellow, Electric Power Research Institute (EPRI), Ireland

**Prof. Nigel Scollan**  
Queen's University of Belfast, Institute of Global Food Security, NI

**Prof. Jim Metson**  
Senior Advisor, Newmarket Campus Development, University of Auckland; Senior Fellow, GFCC, New Zealand

**Dr. Padma Raghavan**  
Vice Provost for Research and Innovation and Chief Research Officer, Vanderbilt University, USA

A reliable and sustainable energy mix necessitates a portfolio approach that integrates renewable energy sources with base load power. However, decarbonization presents significant challenges, demanding careful consideration of the long-term environmental and social impact of new energy solutions. A systems-thinking approach is essential for addressing the interconnected nature of sustainability issues within the energy sector.

Education also plays a vital role in promoting sustainability. Universities should prioritize the Sustainable Development Goals in their curricula and encourage students to consider the broader social impact of their research and innovation projects.

Finally, scaling up solutions requires fostering private-public partnerships and cross-border collaborations. This involves engaging SMEs, users, and governments at all levels in the research and innovation process to ensure that solutions are impactful and sustainable in the long term.

The “Seizing the Decarbonization Opportunity” workshop stressed the crucial role of technology transfer and robust financial mechanisms in supporting developing nations' decarbonization efforts, using examples like food waste burning in Nigeria. Participants also emphasized the vital role of education and communication in promoting individual sustainable practices and broader adoption of the decarbonization agenda.

The transition to renewables and electrification were at the center of the discussions on “Innovation in Energy”, highlighting the complex challenge of integrating decentralized resources and the need for solutions beyond purely technical considerations. The energy transition requires a holistic approach that encompasses social, policy, and governmental aspects. The workshop recommended that utilities expand beyond simply selling electrons and embrace innovative business models. To drive innovation in the energy sector, we need open access to data on energy use, infrastructure, and weather patterns.

Participants of the “Food Security and One Health” workshop explored the central role of agriculture in addressing interconnected societal challenges, including health, food security, and climate change. Attracting younger generations to agriculture is crucial, alongside fostering knowledge sharing and collaboration across the entire agricultural supply chain. Enhancing circularity in agriculture through waste valorization and nutrient recapture presents a significant opportunity for a more sustainable food system.



Dr. Padma Raghavan, Mark McGranaghan, Prof. Nigel Scollan, Prof. Jim Metson, Ellvena Graham OBE and Dr. Roberto Alvarez.

The discussions on the “Advancing Resource Utilization” workshop transcended logistical concerns, focusing on the social and ethical aspects of resource access. Engaging with local communities and recognizing the detrimental effects of past resource exploitation are crucial. The workshop highlighted concerns about the digital divide and the uneven distribution of digital talent, posing challenges to inclusive and sustainable resource utilization. It also stressed the need of research in various fields to realize the ‘circularity promise’.

Finally, the “Accelerating Sustainability and Inclusiveness Through R&D” workshop explored how inclusivity drives innovation, recognizing the interconnectedness of social and environmental progress. To achieve a truly sustainable and equitable future, R&D efforts must proactively consider technology’s impact on communities and leverage circularity principles.

## Key takeaways

- Prioritize Social, Economic, and Political Enablers:** Technological solutions are often available – implementation is the challenge. To accelerate progress, we should prioritize tackling social, economic, and political barriers alongside technological development.
- Empower Communities as Change Agents:** Top-down approaches to sustainability often fail to address local needs and contexts, leading to limited adoption and impact. Investment in communities as key drivers of change is key to fostering local ownership and empowering them to co-create and implement sustainable solutions.
- Bridge Communication Gaps:** Complex scientific and technical information related to sustainability is often inaccessible to the public, hindering broader understanding and engagement. We need to develop strategies for translating these complexities into clear, accessible language and utilizing diverse communication channels to reach wider audiences.
- Embrace and Mainstream the Circular Economy:** Linear “take-make-dispose” models are unsustainable and contribute to resource depletion and environmental degradation. We need to actively transition towards circular systems by promoting and investing in waste valorization, resource efficiency, and closed-loop systems across all sectors. There is a need for new technical solutions to realize that promise.
- Unlock the Potential of Small Innovators:** Smaller companies, especially in developing nations, often face significant barriers to entry and growth, limiting their ability to contribute to innovation and economic development. The creation of supportive ecosystems that nurture these smaller innovators, providing access to funding, mentorship, and markets will foster their growth and impact.
- Foster Cross-Sectoral Collaboration:** The complexity of global challenges often transcends the capabilities of individual organizations or sectors, leading to fragmented efforts and limited progress. We need to establish neutral platforms and forums that facilitate dialogue and collaboration across borders, sectors, and disciplines, enabling collective action and synergistic solutions.





**Top left:** Gala Dinner at the Great Hall at Queen's University Belfast.

**Bottom left:** Dancers perform at the Gala Dinner.

**Top right:** GIS 2024 Dinner at Hillsborough Castle.

**Center right:** Young Entrepreneurs exhibition during the GIS 2024.



**At right:** Professor Sir Ian Greer, The Hon. Deborah L. Wince-Smith, and Charles "Chad" O. Holliday Jr.

**Center left:** GIS 2024 Opening at Whitla Hall Queen's University Belfast.

**Center right:** Dr. Rachel Swift, Charles Kiefel AM, and James Tsiolis.

**Bottom:** Titanic Belfast.



# Day 2

# Nov. 13, 2024



## Hosted by Mark Simpson

Queen's University Belfast alumnus Mark Simpson led the summit's second day. He is an award-winning BBC News correspondent and presenter known for his in-depth reporting and analysis of current affairs.

# Theme: Inclusiveness is a Must for Long-Term Sustainability

Focusing on the necessity of inclusiveness, participants of the GIS 2024 second day explored how social equity and inclusiveness are essential to sustain growth and economic development in the long run. Sessions highlighted collaborative approaches that ensure that all communities are included in the innovation economy.

## A Programme for Social Cohesion and Connection

### Andy Haldane CBE

Chief Executive, RSA (Royal Society of Arts) and former Chief Economist, Bank of England, UK

Social capital – the trust, relationships, and networks that bind us together – is crucial for combating the growing divisions within and between communities and nations.

A well-functioning economy and national competitiveness fundamentally depend on this social cohesion. Just as the Great Depression spurred the development of macroeconomics, today's challenges demand a renewed focus on understanding and fostering social cohesion.

Strong social connections are vital for individual, community, and national well-being, with evidence demonstrating their wide-ranging positive impacts. These positive impacts extend to the economic sphere, where trust and collaboration foster innovation, entrepreneurship, and productivity. Despite its importance, social capital remains a neglected aspect of societal development.

To nurture social capital, a comprehensive program is needed. This includes developing better tools to measure social capital, integrating social considerations across all



policy areas, and investing in social infrastructure that brings people together. By recognizing and prioritizing the link between social cohesion and economic prosperity, a "social capitalism" approach can create a virtuous cycle of inclusive growth and shared well-being. Prioritizing human connection through a "social capitalism" approach offers a promising path towards a more cohesive and prosperous future.



PANEL CONVERSATION

# Bringing Everyone into the Innovation Economy

**MODERATOR**

**Tina McKenzie MBE**

Chief Executive Officer, Staffline Recruitment, Ireland

**DISCUSSANTS**

**Cat McCusker**

President, NI Chamber and NI Regional Lead, NI

**Prof. Austen Rainer**

Professor, School of Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast, NI

**Prof. Damon Salesa**

Vice-Chancellor, Auckland University of Technology, New Zealand

**John Healy OBE**

Chair to the Board, InvestNI, NI

**Dr. Mmboneni Muofhe**

Deputy Director-General, Department of Science and Innovation, South Africa

**Prof. Jay Walsh**

Vice President for Economic Development and Innovation, University of Illinois, USA

All demographics should have access to skilling and opportunities in the innovation economy. This is the engine not only for driving economic growth and competitiveness but also for creating societies where citizens can enjoy better lives. This requires a multi-faceted approach that fosters collaboration, leverages technology, and addresses existing inequalities.

In Northern Ireland, the Economy Minister has outlined a vision centered on good jobs, improved productivity, regional balance, and sustainability. Innovation and entrepreneurship

are foundational to achieving these goals. This vision rests on three pillars: providing access to opportunities and resources, building a supportive ecosystem that connects universities and businesses, and fostering a culture of entrepreneurship through policy changes. Collaboration between government, industry, and educational institutions is crucial for successfully executing strategic goals. However, Northern Ireland faces a challenge: while the unemployment rate is low, there is a high rate of economic inactivity. This highlights the need for reskilling initiatives to bring people back into the workforce, alongside affordable childcare to enable more women to pursue careers.

Globally, different models are emerging to address the challenges and opportunities of the innovation economy. Damon Selesa emphasizes that, in New Zealand, access to universities serve as "engines of economic transformation," stating that "the entry to the future and to a world of greater opportunity for many migrant families, colonized people, indigenous people, has been a university." Universities must evolve their role from "producing highly skilled graduates who are job takers towards producing people who can create jobs," highlighting their function in social cohesion, inclusion, and the need to adapt to lifelong learning models.

Jay Walsh shared that the state of Illinois offers a model of successful partnerships between educational institutions, industry, and national labs framing a unique collaborative ecosystem. Its strength lies in its diverse economy, where no single sector dominates. The ECACE (Early Childhood Access Consortium for Equity), for example, convenes 62 institutions, including community colleges, private universities and public universities, to bridge the skills gap in the Illinois workforce. Joint efforts include creating diversified workforce education programs, extending reach to rural and underserved urban areas, and even working with transportation systems to improve accessibility. This inclusive approach, driven by strong leadership, demonstrates the power of a collective mindset.



Cat McCusker, Dr. Mmboneni Muofhe, Prof. Jay Walsh, Tina McKenzie MBE, Prof. Damon Salesa, Prof. Austen Rainer, and John Healy OBE.

Africa faces unique challenges in accessing the innovation economy. Despite progress in electrification, many regions still struggle with infrastructure limitations, hindering access and connectivity. In South Africa, for instance, the uneven distribution of infrastructure creates a significant digital divide. In that context, Mmboneni Muofhe commented that leapfrogging technologies, such as mobile connectivity and microgrids, offer potential solutions. However, inclusivity challenges persist, including the existence of multiple languages and dialects and the lack of context-relevant data to empower AI. Access to technology can empower individuals to create, generate new IP, and become entrepreneurs. Programs supporting prototype development, funding, and market access are gaining momentum but require further upscaling.

In conclusion, unlocking the innovation economy's potential requires a dedicated focus on collaboration, accessible education, and equitable opportunities for all. By forging strong partnerships across sectors and prioritizing lifelong learning, we can empower individuals to thrive. While technology will shape the future, the emphasis must be on ensuring its benefits are broadly shared and that it bridges, rather than widens, existing divides. Ultimately, success lies in creating societies where opportunity is universal.

## Key takeaways

- Prioritize Collaborative Ecosystems:** Building a thriving innovation economy requires a fundamental shift towards collaborative ecosystems. Governments, industry, educational institutions, and civil society must forge strong partnerships to pool resources, share expertise, and develop holistic strategies that address the multifaceted challenges and opportunities of this new economic landscape. These partnerships are essential for creating supportive environments where innovation can flourish.
- Lifelong Learning is Essential:** The rapid pace of technological change demands a commitment to continuous learning and adaptation. Educational institutions must evolve to embrace lifelong learning models, equipping individuals with the skills needed to navigate the evolving job market, while targeted initiatives should address reskilling needs and ensure that opportunities are accessible to all demographics, including marginalized and economically inactive populations. The use of technology is essential for that.
- Ensure Technology is a Force for Equity:** Technology holds immense potential to drive progress, but proactive measures are needed to ensure equitable access and prevent the widening of existing divides. This entails addressing infrastructural limitations, promoting digital literacy, fostering entrepreneurship through access to resources and mentorship, and developing AI that is inclusive, unbiased, and relevant to the diverse needs of communities worldwide.



## Building a Resilient Economy Through Inclusion in Northern Ireland

### Paul Grocott

Deputy Secretary for Economic Strategy Group in the Department for the Economy

Northern Ireland is a hub of innovation, with groundbreaking advancements already underway in diverse sectors, from zero-emission ferries and nanoscale lasers to cutting-edge virtual production technology. While economic challenges exist, the region's unique strength as a post-conflict society fosters an inclusive environment that fuels economic growth.

This commitment to inclusivity is not just a social good; it is an economic engine. By empowering all its people, Northern Ireland can unlock its full potential, build resilience, and create a thriving economy for generations to come. This focus on inclusivity translates into government initiatives aimed at boosting productivity, creating high-value jobs, and promoting regional balance, consequently, driving economic growth and building a resilient economy.



## Pioneering a Zero-Emissions Maritime Future

### Iain Percy OBE

Founder and CEO, Artemis Technologies Ltd, UK

Decarbonizing the maritime industry requires transformative, yet economically viable, solutions. Drawing inspiration from high-performance engineering in competitive sailing, such as the America's Cup, demonstrates that innovation can drive sustainability. The eFoil technology, which allows vessels to "fly" above water, drastically reduces fuel consumption and offers a compelling example of a green and cost-effective solution. This technology's successful implementation in ferries is proof of its commercial viability.

However, the decarbonization of the maritime sector, particularly the offshore wind industry, presents other challenges. Cost pressures often lead to the prioritization of cheaper, less sustainable options. Overcoming this requires greater transparency, stakeholder engagement, and strategic policy-making to incentivize the adoption of green technologies. In addition, partnerships between industry, government, and research institutions can accelerate the development and implementation of sustainable solutions. A sustainable future for the maritime industry is within reach, but it requires a collective commitment to innovation, collaboration, and responsible policy-making.





# Accelerating Global Sustainability and Economic Inclusion

Presented by: [Name] and [Name]



PANEL CONVERSATION

# Expanding Productivity Frontiers in the Digital Age

**MODERATOR**

**Rushdi Abdul Rahim**

President & Chief Executive Officer, Malaysian Industry-Government Group for High Technology (MIGHT), Malaysia

**DISCUSSANTS**

**Eldar Abdrazakov**

Founder & CEO, Centras Group, Kazakhstan Growth Forum, Kazakhstan

**Dr. Ghadah Al-Dabbagh**

Head of Omnipreneurship Lab, Al-Dabbagh Group, Saudi Arabia

**Dr. Adrian Johnston MBE**

Belfast Innovation Commissioner, Belfast City Council, NI

**Dr. David Jordan**

Lecturer in Economics, Queen's Business School, Queen's University of Belfast, NI

**James Tsiolis**

CEO, Netlinkz, Australia

The digital age presents many opportunities for productivity gains, but realizing this potential requires a strategic and inclusive approach that prioritizes foundational organizational change alongside technological advancements. Many digital transformation initiatives stumble because they focus on adopting trendy technologies without adequately addressing organizational culture, processes, and change management. Dr. Ghadah Al-Dabbagh emphasizes that successful digital transformation hinges on four key factors: unwavering commitment, cross-functional communication, capability building, and effective change management.

A robust digital infrastructure is the foundation of a thriving digital economy. Belfast's experience, particularly the public investment in the Belfast Region City Deal, shows the importance of connectivity, such as 5G, in driving innovation across sectors. This initiative not only fosters research excellence but also enables businesses, especially SMEs, to leverage advanced technologies.

Similarly, Kazakhstan demonstrates a proactive approach to digital transformation, moving beyond basic process automation to a more holistic, user-centric model. Eldar Abdrazakov points out that this transformation requires overcoming institutional inertia and fostering a culture where digital tools are seamlessly integrated to meet user needs. However, successful digital transformation requires more than just technology. It necessitates investment in infrastructure, development of a skilled and adaptable workforce, and a concerted effort to foster adoption and integration of new technologies across different sectors.

Different industries will utilize digital technologies in unique ways, and countries and regions should tailor their strategies based on their existing strengths and industrial structures. However, Mr. James Tsiolis points out that realizing the productivity gains promised by digitalization requires a strong emphasis on data quality, privacy, and cybersecurity.



James Tsiolis, Dr. David Jordan, Dr. Adrian Johnston MBE, Dr. Ghadah Al-Dabbagh, Eldar Abdrazakov, and Rushdi Abdul Rahim.

Governments play a crucial role in creating an enabling environment for digital growth. This involves developing comprehensive digital strategies, fostering public-private partnerships, and investing in critical infrastructure. Belfast's investment in a national Digital Twin Centre, providing SMEs with access to otherwise unattainable cutting-edge technologies, exemplifies the impact of such public investment. Regulatory frameworks must also keep pace with technological advancements, and initiatives should actively promote digital inclusion and equitable access.

Inclusive growth must be a central tenet of the digital agenda. Efforts are needed to bridge the digital divide and empower marginalized communities. The experiences of countries like Kazakhstan highlight the importance of actively embedding digitalization within society, particularly for SMEs and underserved regions. Ultimately, expanding productivity frontiers in the digital age requires a holistic approach that prioritizes organizational change, robust infrastructure, skills development, and strong, collaborative governance.

## Key takeaways

- **Prioritize People and Processes:** To succeed in digital transformation, organizations must prioritize their people and processes, not just technology. Invest in building a supportive culture, implement effective change management strategies, and empower employees with the skills they need to thrive in a digital environment.
- **Invest in Infrastructure and Accessibility:** To unlock the full potential of the digital economy, we must ensure access to digital technologies, infrastructures and skills for all. This requires robust investment in digital infrastructure, including reliable connectivity and strong cybersecurity, alongside proactive measures to bridge the digital divide and empower all individuals and businesses to participate.
- **Foster Collaboration and Lifelong Learning:** To navigate the rapidly evolving digital landscape, governments, businesses, and educational institutions need to collaborate to cultivate a culture of lifelong learning. These partnerships should focus on developing agile training programs that address the skills gap and equip individuals with the knowledge needed to succeed in the future of work.



## CONVERSATION

# Enabling Place-Making Innovation

### MODERATOR

The Hon. Deborah L. Wince-Smith  
Founder and President, GFCC; President and CEO, Council  
on Competitiveness, USA

### CONVERSATIONS

#### Dr. Masayuki Adachi

President & COO, Horiba, Japan

#### Prof. Sir Ian Greer

President and Vice-Chancellor, Queen's University  
of Belfast, NI

"Placemaking innovation" has a critical role in fostering regional economic growth and improving the quality of life. Strategic investments in talent, technology, and infrastructure can transform regions and create opportunities for communities.

Universities should act as anchors in innovation ecosystems, contributing not only to groundbreaking research but also acting as a continuous stream of skilled graduates, ensuring the sustained development of the region. Queen's University Belfast, for example, had a significant impact on the transformation of Northern Ireland from a traditional economy based on shipbuilding and linen to a knowledge economy driven by fintech and cybersecurity.

Another interesting example to illustrate the power of purposeful investments in placemaking innovation is San Diego, California. Once primarily a naval base, San Diego's strategic development of the University of California San Diego, along with investments in research institutions like Scripps, transformed the city into a global leader in telecommunications,

biotech, and the bioeconomy. The story of Qualcomm, which grew from a small experimental project to a global corporation, exemplifies the impact of nurturing innovation within a supportive ecosystem.

Horiba is a company that started as a student venture and became a leader in analytical and measurement systems. The company is committed to contributing to the future of the world by focusing on energy, environment, bio and healthcare, and semiconductors. Its investment strategy is driven by needs identified in society, and the company maintains close collaborations with leading universities and research institutions worldwide. Its core technology has always come from partnerships with universities. The organization's DNA is rooted in contributing to the future of the world, not just immediate profit.

In conclusion, placemaking innovation, driven by strategic investments and anchored by strong university-industry partnerships, can be a powerful engine for regional transformation. Universities play a vital role in this process, but their impact can be further maximized by supportive government policies and a focus on inclusive growth. Companies like Horiba demonstrate the value of a long-term vision that prioritizes societal contribution alongside profit. By fostering collaboration and focusing on both educational potential and community needs, regions can build and cultivate thriving innovation ecosystems that benefit society.



Prof. Sir Ian Greer, The Hon. Deborah L. Wince-Smith and Dr. Masayuki Adachi.

## Key takeaways

- **Universities are Catalysts for Regional Transformation:** Universities play a pivotal role as anchors in regional innovation ecosystems, driving progress through research, talent development, and long-term vision. By actively fostering a continuous stream of skilled graduates and engaging in groundbreaking research, they feed the workforce of the future into the economy, generate new knowledge that can be translated into new applications and innovative ventures—such as Horiba—and become powerful engines for sustained economic growth and societal advancement.
- **Strategic Investment Drives Placemaking Innovation:** Purposeful and strategic investments in talent, technology, and infrastructure are the cornerstones of successful placemaking innovation. These investments, when carefully aligned with regional needs and opportunities, can transform regions into thriving hubs of economic activity and improve the quality of life for their communities. They can serve as magnets for knowledge-intensive innovative global corporations.
- **Policy and Collaboration are the Foundation for Success:** Thriving innovation ecosystems require a supportive policy environment that encourages growth and collaboration. A low-friction business environment is essential for entrepreneurship to flourish. Governments must work hand-in-hand with universities, industry, and communities to create a synergistic environment where innovation can flourish and benefit all segments of society.



## Opinion is the Lowest Form of Evidence – Deploying Data to Drive a Sustainable Cancer Revolution

**Prof. Mark Lawler**

Professor of Digital Health, Queen's University of Belfast, UK

Data sharing and analysis are powerful tools for driving innovation and improving healthcare. Mark Lawler emphasizes that breaking down data silos and involving patients as true partners in the process is crucial for unlocking the full potential of data-driven healthcare and points to initiatives like DataCAN, the UK's health data research hub for cancer, and the Time to Act campaign to demonstrate the impact of data in raising awareness and driving improvements in cancer care. Data analysis also enables evidence-based decision-making in cancer research funding and policy, revealing disparities and inefficiencies that can be addressed through targeted interventions.

International collaboration and data sharing, exemplified by initiatives like the International Cancer Benchmarking Partnership, are essential for advancing cancer research and improving outcomes globally. By sharing data and insights, researchers and policymakers can learn from each other and develop more effective strategies for preventing, diagnosing, and treating diseases. Ultimately, data has the power to transform healthcare, improve patient outcomes and create a more effective healthcare system for all.

CONVERSATION

# Harnessing the Economic Dividend of Health

**MODERATOR**

**Prof. Mark Lawler**

Associate Pro-Vice-Chancellor and Professor of Digital Health, Queen's University of Belfast, NI

**DISCUSSANTS**

**Dr. Michinari Hamaguchi**

Director General of SCARDA, AMED; GFCC Distinguished Fellow, Japan

**Professor Chris McCabe**

School of Medicine, Dentistry and Biomedical Sciences, Queen's University of Belfast

**Angela McFarlane**

Vice President, Strategic Planning UK & North Europe, IQVIA, UK

**Steve Orr OBE**

Chief Executive Officer, Catalyst Innovation Centre, NI

Embracing innovation promises not only improved patient outcomes but also significant economic benefits for the healthcare sector. Realizing this potential, however, requires a fundamental shift in perspective: viewing healthcare as an investment rather than a cost.

Data-driven advocacy is an important tool for driving change as demonstrated by a partnership between Bowel Cancer UK and researchers that successfully challenged the NHS's ban on treatment breaks for advanced colorectal cancer patients receiving Cetuximab. Through patient testimonies, clinical evidence, and health economic modeling, they demonstrated that treatment breaks could save the NHS 1.2 billion pounds without compromising patient outcomes. Similarly, a report by

the All-Island Cancer Research Institute highlighted the revenue potential of the oncology and allied digital health sector on the island of Ireland, further strengthening the economic case for investing in precision oncology and digital health.

However, the UK, despite historically being a leading destination for global commercial research, has experienced a concerning 41 percent decline in commercial clinical trials between 2019 and 2021. This decline threatens the "virtuous circle" of research and development, where access to innovative medicines improves patient care and attracts further investment. To regain its competitive edge, Angela McFarlane mentions that the UK can look to the O'Shaughnessy report, released in 2023, which provides a roadmap for streamlining clinical trial processes and enhancing the UK's position in the global research landscape.

The need for streamlined processes and fostering a strong research environment is further underscored when looking at different healthcare systems. Japan's healthcare system, characterized by universal health insurance and easy access to care, offers valuable insights but also faces challenges related to escalating costs, as highlighted by Michinari Hamaguchi. This underscores the importance of health systems performing international benchmarking and adopting best practices to optimize healthcare delivery and innovation.

Integrating digital technologies into healthcare delivery, particularly in primary care, is also crucial for enabling earlier diagnosis, improving resource utilization, and enhancing patient outcomes. Shifting from analog to digital processes and harnessing the AI potential and natural language processing can drive efficiency gains and optimize the use of healthcare resources. The emergence of AI presents both opportunities and challenges for accelerating business model development.

To fully capitalize on these advancements, the successful commercialization of health innovations requires support for entrepreneurs and scaling companies. This necessitates a focus on fostering digital literacy and adaptability within the workforce to





**Top:** Angelea McFarlane, Prof. Chris McCabe, Steve Orr OBE, Prof. Mark Lawler, and Dr. Michinari hamaguchi.

**Bottom:** Prof. Mark Lawler and Dr. Michinari hamaguchi.

ensure they can leverage the potential of emerging technologies. Furthermore, inefficiencies in the current UK system could be addressed by exploring novel funding mechanisms, such as leveraging public pension funds for domestic innovation.

Ultimately, the convergence of technological advancements, evolving healthcare needs, and economic imperatives presents a unique opportunity to transform healthcare delivery and unlock economic benefits. By embracing data-driven advocacy, fostering a supportive environment for innovation through streamlined processes and strategic investments, and prioritizing collaboration between academia, industry, and government,

stakeholders can pave the way for a future where health innovation drives both improved patient outcomes and sustainable economic growth.

## Key takeaways

- Invest in Healthcare as a Source of Economic Growth and Well-being:** Shifting the perception of healthcare from a cost to a strategic investment is needed to unlock its economic potential. Innovation in the healthcare sector can simultaneously improve patient outcomes and stimulate economic growth.
- Leverage Data to Drive Policy Reform and Improve Care:** Data and evidence-based insights are powerful tools to influence healthcare policy and improve practices. By harnessing patient experiences, clinical research, and economic modeling, we can achieve significant cost savings and enhance the quality of patient care.
- Foster Collaboration to Integrate Technology and Accelerate Innovation:** Strong partnerships between government, industry, and academia can accelerate innovation and maximize its impact. digital technologies, streamlined processes, and active support of the commercialization of health innovations can transform the healthcare landscape.



Savannah Dodd, Prof. Sir Ian Greer, Emma Stephenson, Georgina Copty and Lauren McKeown.

## InQUBate: Supporting Queen's Young Entrepreneurs<sup>1</sup>

### Brian McCaul

Director, QUBIS, Queen's University of Belfast, NI

Queen's University Belfast demonstrates a strong commitment to fostering innovation and entrepreneurship, as evidenced by its diverse range of programs and initiatives. The university has a strong track record in translating research into economic impact, particularly through the cultivation of deep tech startups crucial for driving economic growth in Northern Ireland. Their InQUBate program exemplifies this commitment. Going beyond research-based spinouts, InQUBate champions graduate startups with the potential to generate jobs and fuel economic growth. This university-wide program empowers students and graduates by providing funding, expert mentorship, and customer discovery opportunities.

### A Supportive Ecosystem for Entrepreneurial Success

Queen's goes beyond InQUBate. Recognizing that entrepreneurship thrives in a supportive ecosystem, the university offers a variety of resources to foster an entrepreneurial mindset. These include curricular offerings, such as modules designed to inspire innovation within various schools, and extracurricular activities like QUB Dragons' Den and SU CoWork, which provide

students with hands-on experience and networking opportunities. The SU Enterprise team further bolsters this support by connecting students with external opportunities, competitions like Enactus, and one-on-one advice. This holistic approach ensures that students have access to the mentoring, coaching, funding, and expertise needed to progress their business ideas.

### Showcasing Entrepreneurial Potential: The InQUBate Pitch Competition

To further showcase this commitment and the potential of its student entrepreneurs, Queen's University hosted a pitch competition at the GIS 2024 summit. Six graduate entrepreneurs were given the opportunity to present their inventions/products to the Summit's global audience. Attendees voted on their favorite enterprise, with a £10,000 prize at stake. The 3 top contenders for the InQUBate prize were: The Photography Ethics Centre, led by Savannah Dodd, which aims to advance ethics across the visual media industries; KitchenSync by Lauren McKeown, which redefines grocery shopping and meal planning with a revolutionary app; and Emma Stephenson's M-Power, a tracking app supporting those going through menopause.

<sup>1</sup> We are grateful to Siofra Healy and the Queen's Students' Union Enterprise Team for generously sharing their knowledge and information about innovation and entrepreneurship opportunities available at Queen's University Belfast.



The winner of this competition was Emma Stephenson and the Mpower app that tracks menopause symptoms and provides tailored advice on lifestyle changes powered by AI. This exciting venture exemplifies the innovative spirit and entrepreneurial drive that Queen's University fosters in its graduates.

### QUBIS: A Catalyst for Innovation and Economic Growth

Queen's University Belfast Innovation and Spin-Out (QUBIS), the commercialization arm of Queen's University Belfast, provides comprehensive support to new ventures, fostering innovation and entrepreneurship within the local ecosystem. It offers early-stage funding, facilitates the commercialization of research, and delivers tailored business development support. QUBIS also leverages university resources, providing start-ups with access to cutting-edge facilities, collaborative workspaces, and a network of mentors and industry experts.

Furthermore, QUBIS assists ventures in securing additional funding through grants, venture capital, and private equity, and offers workshops and training programs to equip entrepreneurs with essential business skills. Its expertise in spin-out creation, particularly in high-tech and research-driven industries, ensures the efficient launch of viable ventures. It also maintains long-term involvement with its portfolio companies, offering ongoing support as they grow and evolve.

This comprehensive support system has enabled QUBIS to establish a strong track record of successful spin-outs across various sectors, contributing significantly to the regional economy and innovation ecosystem. QUBIS not only evaluates its performance by the number of spin-out companies, investment secured, and IP output but also by jobs created, economic impact, and broader societal impact. This includes advancements in healthcare, technology, and sustainability achieved through spin-out innovations, as well as indirect benefits such as inspiring entrepreneurship and fostering a culture of innovation. By providing holistic support and fostering collaboration, QUBIS plays a crucial role in transforming innovative ideas into successful businesses, driving economic growth, and creating jobs in Northern Ireland.



Top: Brian McCaul.

Center: Emma Stephenson at the M-Power booth.

Bottom: Savannah Dodd at the Photography Thics Centre booth.



## Datathon Highlights: Data-Driven Solutions for a Better Future<sup>1</sup>

**Prof. M.N. Ravishankar**, Professor of Technology and Globalization & Dean and Head of Queen's Business School, NI

**Dr. Leonard O'Hagan CBE**, Pro-Chancellor, and member of Senate, for Queen's University Belfast, NI

**Sue Douthwaite**, Chair of NHS Business Services Authority, NI

**Strategic Team Formation:** The Datathon brought together 150 students from Queen's Business School (QBS) and the School of Electrical Engineering, Electronics, and Computer Science (EEECS). Twenty-five teams were meticulously formed, each a microcosm of diverse talent. With at least two students from each school, each six-member team also represented a blend of self-identified roles: The Creative, The Presenter, The Analyzer, The Finisher, and The Organizer. This strategic composition, which also took into account prior data analytics experience and pre-formed groups, laid the foundation for the event's success.



**Navigating Challenges, Fostering Growth:** Participants faced the dual challenge of rapidly building rapport with new teammates and developing data-driven solutions under significant time pressure. A crucial element of the event was the 6-minute pitch, requiring teams to distill complex ideas into clear, compelling narratives for a non-technical audience. Dr. Hannah Cummings, an external facilitator, played a pivotal role in guiding students through these challenges, providing workshops on teamwork and confident pitching. The Datathon proved to be a valuable learning experience, with students particularly appreciating the cross-disciplinary collaboration and the opportunity to apply their creative problem-solving skills.

**Finalist Showcase:** Three finalist teams emerged, showcasing the transformative potential of data analytics. Team 4's "HealthDrive NI" proposed a network of mobile health units, strategically deployed based on data analysis, to bridge health-care gaps in underserved communities. Team 12's "Brain Food" envisioned a smart food voucher program designed to alleviate child hunger and improve educational performance. Team 19 took a holistic approach to crime reduction, advocating for targeted investments in mental health services, education, and vocational training in deprived areas.

**The Winning Formula:** Team 4, with their "HealthDrive NI" initiative, ultimately claimed victory. Their success underscored the power of diverse teams, demonstrating how a blend of analytical, creative, and communication skills can lead to impactful, data-driven solutions. The Datathon served as a powerful testament to the students' dedication and their potential to leverage data for positive social change, leaving a lasting impression on all involved.



Top left: Prof. M.N. Ravishankar, Dr. Leonard O'Hagan CBE and Sue Douthwaite.

Bottom left: Lauren McKeown at the KitchenSync booth.

Above: Students of Team 4 "Health Drive NI" with Dr. Leonard O'Hagan CBE.

<sup>1</sup> We are grateful to Sarah Jayne Smith, Senior Development Manager (North America Team), Alumni Engagement and Philanthropy, Queen's University Belfast, for generously sharing her knowledge and information about the Datathon.

# Workshops

The GIS 2024 workshops extended the day's plenary panel conversations with dynamic, interactive sessions. The workshops offered delegates a platform to engage directly in the subject matter, offering their unique perspectives and contributing to a deeper understanding of each topic. Each workshop commenced with the moderator synthesizing the key issues, challenges, and recommendations arising from the plenary discussions. Subsequently, a panel of expert discussants shared their insights and proposed actionable steps to advance the agenda related to the workshop's theme. The concluding segment of each workshop focused on summarizing the collective insights and identifying key action points.

On Day 2, the workshops centered around five critical themes: preparing the workforce for the digital age, reshaping the business landscape with AI, transforming regional economies via innovation, health for all, and making sustainable manufacturing a reality. Each workshop moderator then presented distilled insights and action points to the broader audience in a final plenary session moderated by Mr. Chad Evans, Executive Vice President of the Council on Competitiveness and Treasurer of the GFCC.

## Workshop 1: Preparing the Workforce for the Digital Age

### MODERATOR

**Dr. Venetia Koussia**, Executive Director, CompeteGR, Greece

**Chris Allen**, GFCC Senior Fellow; Former Greek desk, European Commission, Greece

**Dr. Ghadah Al-Dabbagh**, Head of Omnipreneurship Lab, Al-Dabbagh Group, Saudi Arabia

**Dr. Martin Betts**, CEO, HEDx, Australia

**Prof. Razvan Bologa**, Innovation Coordinator, Bucharest University of Economic Studies – ASE, Romania

**Sandra Duxbury**, Entrepreneur and Consultant in Strategic Policy and Advanced Education, Canada

**Erion Isufi**, CEO & Founder, Landmark Technologies, Albania

Preparing today's workforce for the digital economy is a complex endeavor. The widening digital skills gap threatens to exacerbate economic inequality, demanding urgent attention from both developed and developing nations. While AI offers immense potential, it could also worsen this divide. Therefore, inclusive AI adoption is crucial, ensuring that its benefits reach all sectors of the economy, including small businesses and less-skilled workers.

To bridge this gap, comprehensive upskilling and reskilling initiatives are essential. These programs must cater to both white-collar and blue-collar workers and adapt to the rapidly evolving job market. To align with the demands of the digital economy, education systems need to integrate digital literacy, micro-credentials, and agile program development processes into curricula. Cultivating a mindset of lifelong learning, focused on continuous skills development and adaptability, is paramount in navigating relentless technological change.



Dr. Paul Madden moderated Workshop 2.

Equipping the global workforce for the digital age requires a collective effort. Governments, academia, and the private sector must collaborate to develop and implement effective workforce development initiatives. Universities need to forge strong partnerships with industries and embrace lifelong learning models. Organizations must embrace digital transformation, implementing robust change management strategies to facilitate this shift. Finally, substantial investments in education and training are crucial, coupled with creative applications of digital technologies and AI, to maximize progress even with limited resources – embodying the concept of frugal innovation.

## Workshop 2: Reshaping the Business Landscape with AI

### MODERATOR

**Dr. Paul Madden**, Director, Centre for Competitiveness, NI

**Eldar Abdrazakov**, Founder & CEO, Centras Group; Kazakhstan Growth Forum, Kazakhstan

**Dr. Ayman Al-Fudhaili**, CEO of the Industrial Innovation Academy, National Competitiveness of Oman, Oman

**Hiro Nishiguchi**, Managing Director, GEN Japan, Japan

**Prof. Peter Smith**, Smith Optical, UK

Artificial Intelligence has transformative potential across various sectors. While still in its early stages of deployment, AI is already revolutionizing areas like education and business. In education, AI is being used for student assessments, research grant applications, and ethical considerations. In business, AI is significantly boosting productivity, as seen in the radical increase in software development speed. However, the future trajectory of AI remains uncertain, raising questions about its long-term impact on various industries and the economy as a whole.

However, alongside these advancements, it's crucial to consider the balance between AI capabilities and human skills. While AI excels at tasks like ideation, brainstorming, and pattern recognition, human expertise remains essential for tasks like idea evaluation and legal judgment. The potential for job displacement due to AI is a valid concern, prompting discussions about new economic models that ensure workers aren't left behind in the transition, regardless of their background or skill set. This also highlights the need to address ethical considerations in AI applications, such as preventing bias in algorithms and ensuring fairness and transparency in decision-making processes. Furthermore, ensuring reliable and valid AI-generated outputs requires unbiased datasets, continual data refreshing, and measures to prevent data hallucination.

Finally, the environmental impact of AI is an emerging concern. Energy consumption due to complex data searches and the potential carbon footprint of AI applications require careful consideration. Developing energy-efficient algorithms and utilizing renewable energy sources to power data centers are crucial steps towards sustainable AI. While embracing AI's potential, we must proceed with caution and maintain human oversight, recognizing that certain uniquely human skills, like persuasion and critical thinking, remain essential. Ultimately, a balanced approach that leverages AI's potential while preserving human values and expertise is paramount.

## Workshop 3: Transforming Regional Economies via Innovation

### MODERATOR

**Dr. Paul Roben**, Associate Vice Chancellor, Innovation and Commercialization, University of California San Diego, USA

**Anuar Buranbayev**, Partner, Center for Research and Consulting, Kazakhstan

**Dr. George Gillespie OBE**, Executive Corporate Officer, HORIBA, Ireland

**Zaimizi Hamdani**, Chief Strategy Officer, Universiti Teknologi PETRONAS, Malaysia

**Dr. Miguel Marques**, Vice-President, Catholic University of Portugal, Portugal

**Suzanne Wylie**, CEO, Northern Ireland Chamber of Commerce and Industry, NI

**Ashleen Feeney**, Partner, KPMG, NI

Thriving regional innovation ecosystems depend on active collaboration among diverse stakeholders, including academia, industry, government, and the community. Successful models, such as San Diego's life sciences hub and Lisbon's Unicorn Factory, demonstrate the power of deliberate policies, engaged



universities, and strong leadership in fostering a culture of innovation. A comprehensive approach is essential to achieve lasting regional transformation. This involves nurturing talent, creating supportive infrastructure, and encouraging a spirit of risk-taking and entrepreneurship.

Regional transformation hinges on aligning local strengths with global opportunities. This requires identifying unique regional assets and crafting a compelling narrative to attract investment and build a sustainable innovation ecosystem. Universities play a crucial role in this process by driving convergence, generating new industries, and providing a skilled workforce. Furthermore, stimulating problem-solving and innovation necessitates embracing mission-driven challenges, cultivating effective leadership, and maintaining a long-term vision.

To build a thriving ecosystem, we must foster inclusive growth that provides broad access to opportunities. This requires bridging economic divides and leveraging innovation to rebuild social capital. Education systems must also evolve to cultivate resilience, empathy, and multidisciplinary problem-solving skills. Organizations like the GFCC can play a vital role in supporting these efforts by promoting best practices, facilitating collaboration, and advocating for policies that incentivize innovation and drive regional economic development.

## Workshop 4: Health for all – Bridging the Gap

### MODERATOR

**Dr. Rachel Swift**, Vice-chair, Australian Advisory Board on Competitiveness, GM Strategy Innovation & Ventures, HCF; Non-executive Director, Innovation & Enterprise Advisory Board, Australia

**Dr. Claudio Furtado**, GFCC Distinguished Fellow, Brazil

**Prof. Deirdre Heenan**, Professor of Social Policy, Ulster University, NI

**Prof. Mark Lawler**, Associate Pro-Vice-Chancellor and Professor of Digital Health, Queen's University of Belfast, NI

**Dr. Haruko Takeyama**, Professor, Waseda University, Japan

Global healthcare faces significant challenges in achieving equitable access and outcomes. A critical shortage of healthcare workers, exacerbated by factors such as low fertility rates in OECD countries and brain drain from developing nations, strains healthcare systems worldwide. This shortage contributes to disparities in care, with some regions lacking adequate access to essential medical services and facing significant variations in quality of care. Furthermore, conflict zones experience particularly devastating disruptions to healthcare delivery, underscoring the urgent need for increased support and resources



Workshop 3.

in these vulnerable regions. Beyond these access issues, the interconnectedness of physical and mental health is often overlooked, with inadequate mental health services leading to substantial social and economic costs.

Despite evidence demonstrating the long-term benefits and cost-effectiveness of mental health investment, persistent underfunding remains a significant barrier. Prioritizing prevention and early intervention in mental health is crucial, particularly in addressing contributing factors such as conflict, poverty, and cultural norms. Beyond these specific concerns, global healthcare systems grapple with numerous gaps, including access to care, resources, knowledge and technology, and communication. These systemic challenges contribute to health disparities and underscore the need for increased investment, knowledge sharing, and data-driven approaches to improve healthcare outcomes.

Addressing these complex issues requires a multi-faceted approach. Sharing policy and knowledge between countries can help address health care inequalities and improve access to treatment. Incentivizing and supporting the next generation of healthcare workers through inclusive policies is paramount to address the global shortage. Furthermore, recognizing the crucial role of nutrition as a foundation for health and well-being, alongside a comprehensive approach that emphasizes both prevention and treatment, is essential for achieving "Health For All."

## Workshop 5: Making Sustainable Manufacturing a Reality

### MODERATOR

**Prof. Sam Turner**, Chief Executive Officer, Advanced Manufacturing Innovation Centre (AMIC), Belfast, UK

**Dr. Saif Al Hiddabi**, Undersecretary of Research and Innovation – Sultanate of Oman, Ministry of Higher Education, Research and Innovation, Oman

**Prof. Brian Falzon**, Dean of Engineering, Western Sydney University, Australia

**Andrew Lynch**, Chief Innovation Officer, Irish Manufacturing Research, Ireland

**Prof. Mark Price**, EPSRC Fellow in Engineering Design School of Mechanical & Aerospace Engineering, Queen's University of Belfast, NI

**James Rutherford**, Chairman, Centamin plc, UK; Director, Manara Minerals, Saudi Arabia; Director, Ecora Resources plc, UK

The manufacturing sector bears a significant responsibility for environmental challenges, but it also holds the key to a more sustainable future. However, the transition to sustainable practices is not happening at the necessary pace. The Jevons Paradox highlights a critical challenge: increased efficiency in manufacturing often leads to increased production and consumption, negating potential environmental gains. This is further complicated by the ongoing need for resource extraction, even for seemingly green technologies like electric vehicles.

To accelerate this transition, clear regulatory frameworks are essential. A balanced approach that combines incentives (carrots) such as tax breaks for green investments and penalties (sticks) like carbon taxes for high emissions will encourage innovation and drive sustainable practices, particularly among small businesses.



Workshop 5 participants.

Decarbonizing energy for heavy industry is at the center of this transformation. This requires regulatory frameworks that incentivize investment in green energy infrastructure, scaling the grid to meet the increased demand for clean electricity and prioritizing new renewable energy infrastructure over carbon offsetting.

The manufacturing community holds the key to moving away from unsustainable practices. The path to this transition offers several challenges such as: securing a sustainable material supply chain, navigating the geopolitical complexities of energy demand and supply, and developing regulatory frameworks that unlock funding for sustainable initiatives. These initiatives include promoting design that minimizes environmental impact throughout the product lifecycle. To overcome these challenges, the main opportunities lie on defining clear regulatory frameworks, providing guidance for investors, and prioritizing an inclusive innovation economy to address global challenges effectively.







PANEL CONVERSATION

# Advancing Economic Inclusiveness: Key Recommendations & Feedback from Workshops

**MODERATOR**

**Chad Evans**

EVP and COO, Council on competitiveness  
Treasurer, GFCC, USA

**DISCUSSANTS**

**Dr. Venetia Koussia**

Executive Director, CompeteGR, Greece

**Dr. Paul Madden**

Director, Centre for Competitiveness, NI

**Dr. Paul Roben**

Associate Vice Chancellor, Innovation and  
Commercialization, University of California San Diego, USA

**Dr. Rachel Swift**

Vice-chair, Australian Advisory Board on Competitiveness,  
GM Strategy Innovation & Ventures, HCF; Non-executive  
Director, Innovation & Enterprise Advisory Board, Australia

**Prof. Sam Turner**

Chief Executive Officer, Advanced Manufacturing Innovation  
Centre (AMIC), Belfast, UK

The discussion on "Preparing the Workforce for the Digital Age" emphasized the need for a more inclusive and applied educational approach that extends beyond the traditional confines of universities. A few key issues identified were the resistance among some educators to embracing AI literacy, the lack of individualized skill development for workers, and the failure to fully utilize the existing talent of experienced workers. To address these challenges, panelists recommended advocating for proactive adaptation to new technologies and the importance of tailoring education and training to individual needs and

aptitudes, enabling individuals to take advantage of emerging opportunities. A key takeaway was the critical need to foster trust and collaboration among all stakeholders, including educators, policymakers, industry leaders, and workers, to unlock the full potential of the workforce. This collaborative effort is essential to ensure that no talent is left behind in the rapidly evolving digital landscape.

The workshop on "Reshaping the Business Landscape with AI" explored both the transformative potential and ethical complexities of this technology. While recognizing AI's capacity to accelerate innovation, particularly in ideation, participants emphasized the need for careful consideration of its implications, especially in areas like law where human judgment remains crucial. Concerns were raised about the potential for AI to concentrate power within a few corporations, mirroring anxieties about the influence of tech giants. Despite these challenges, the workshop acknowledged AI's potential to reshape the workforce and create new job roles, such as those requiring the ability to distinguish between human and AI-generated content.

The "Transforming Regional Economies through Innovation" workshop emphasized that to flourish, regional ecosystems must be globally competitive. This requires sustained leadership from all stakeholders — government, academia, industry, and society — working together as a "quadruple helix." Participants stressed the importance of crafting a clear, compelling, and unified narrative about the region's unique strengths and opportunities to attract investment, talent, and foster growth. Moreover, the workshop highlighted the need to move beyond traditional geographic boundaries, recognizing that regional innovation clusters thrive when connected to global networks and opportunities in today's interconnected world.

The "Health for All" workshop tackled pressing challenges facing healthcare systems worldwide, framing healthcare as an investment in economic prosperity under the concept of "Health is Wealth." The discussion emphasized the significant influence of social determinants, such as food security, housing, and



Prof. Sam Turner, Dr. Rachel Swift, Prof. Paul Roben, Dr. Paul Madden, Dr. Venetia Koussia and Chad Evans.

education, on health outcomes. Critical shortages of healthcare workers were identified as a major concern, highlighting the need for both improved clinical training and increased public health literacy. Key recommendations included prioritizing preventative care to mitigate the burdens of aging populations and rising chronic illnesses. Furthermore, the workshop called for robust measurement and appropriate funding to ensure that health policies are both well-designed and effectively implemented.

The "Making Sustainable Manufacturing a Reality" workshop grappled with the significant environmental impact of the manufacturing sector while acknowledging its crucial role in developing solutions for a greener future. A key challenge identified was the Jevons Paradox, where increased efficiency can paradoxically lead to increased consumption, hindering sustainability efforts. In addition, the difficulties faced by small businesses in adopting sustainable practices due to limited resources and expertise were highlighted, as well as the hurdles faced by clean tech companies in scaling up their operations. To address these issues, there is urgent need for robust regulatory frameworks and market incentives to drive decarbonization in manufacturing. Furthermore, developing green energy infrastructure is critical for attracting investment and supporting a widespread transition to sustainable manufacturing practices.

## Overall key takeaways

- Empower Communities and Individuals:** The complex challenges facing our world are interconnected, requiring a holistic understanding of the relationships between technology, the economy, society, and the environment. To address this, we need to empower communities to become active agents of change by investing in social capital, fostering strong social bonds, and ensuring access to resources and opportunities.
- Invest in Human Capital:** The rapid pace of technological advancement, particularly in AI, requires continuous learning and adaptation to maintain a skilled and relevant workforce. Therefore, investments are needed in education and workforce development initiatives that bridge the gap between industry and academia, creating a dynamic and responsive workforce prepared for the evolving demands of the future.
- Champion Sustainability:** The current linear economic model is unsustainable and detrimental to the environment, demanding a shift towards circularity. Thus, we should embrace and promote the circular economy through waste valorization and the implementation of circular systems, supported by robust regulatory frameworks that incentivize sustainable practices and prioritize preventative healthcare measures.
- Foster Collaboration and Communication:** Addressing complex global challenges requires collective action and shared understanding, often hindered by communication barriers and siloed approaches. It is vital to overcome these barriers by establishing platforms for cross-sectoral and international collaboration, translating complex information into accessible language and fostering open dialogue among diverse stakeholders.
- Support Innovation Ecosystems:** Many smaller companies, especially in developing nations, possess significant innovative potential but lack the necessary support to thrive in a competitive global market. Therefore, supportive environments for these businesses should be established by providing access to funding, mentorship, and resources, enabling them to unlock their potential and contribute to economic growth.

# Global Competitiveness Awards

The GFCC recognizes every year outstanding leaders whose prominent work have helped to bring higher levels of competitiveness and greater opportunity for their countries and local communities.

These thought leaders, energetic doers, and agents of change have demonstrated a strong commitment and tireless dedication to advance competitiveness and innovation by leveraging new models, championing new investments, legislation, and government policies, or catalyzing other activities that promote economic growth, industrial and business development, and prosperity for their citizens.

In 2024, the GFCC bestowed a total of six awards to exceptional leaders from Northern Ireland and the United Kingdom for their remarkable work in improving local and national competitiveness, forging key partnerships, and shaping a brighter future. These awards were presented during the Gala Dinner at the Great Hall.

## Visionary Leadership in Advancing the All-Island Competitiveness of Ireland

Dr. Martin Naughton and Dr. Stephen Kingon were recognized for their visionary leadership in promoting Ireland's competitiveness across the island.

Dr. Martin Naughton is the Chairman of the Supervisory Board of Glen Dimplex Group. He founded the company in 1973 and transformed it into an international leader with a €1.5 billion turnover and 8,000 employees. Glen Dimplex's innovative solutions span heating, ventilation, and consumer appliances. Dr. Naughton has received honorary degrees from universities in Ireland and the U.S., and in 2018, he was honored with the Oslo Business for Peace Award.

Dr. Stephen Kingon, Chairman of the Centre for Competitiveness, is a chartered accountant who played a leadership role as Managing Partner of Pricewater House Coopers Ireland. He now serves several Chairmanships and Non-executive Director positions, including Non-Executive Chairman of the Northern Ireland Electricity Networks Limited and Lagan Investments Limited, and Non-Executive Director of Allied Irish Bank UK, Belfast Harbour, Anderson Spratt Holdings Limited, among others.

## Transformational Leadership in Higher Education, Research, and Innovation

In 2024, the GFCC recognized Professor Sir Ian Greer and Professor Aleksandar Subic for their leadership in driving innovation and socio-economic transformation through higher education. The Award to Professor Greer was bestowed to him during the GFCC Gala Dinner in Belfast, while Professor Subic received his Award in a ceremony that took place the week before, in Birmingham.

Sir Ian Greer is the President and Vice-Chancellor of Queen's University Belfast, a position he has served with distinction since 2018. Under his extraordinary vision and leadership, Queen's has played a major role in the socio-economic transformation of Belfast, leading cross-sector developments, such as the Belfast Region City Deal. A groundbreaking initiative that will unlock more than a billion dollars in investment in projects and programs and deliver economic and social benefits for the people of Northern Ireland for generations to come.

In addition, Sir Ian Greer holds a strong commitment to social responsibility and inclusion. His mission is to widen participation, diversity inclusion, and civic engagement in the university's role. This includes looking to the future to ensure that Northern Ireland's workforce has the skills that will enable both industry and workers to succeed.





## Leadership in Advancing the Competitiveness of Northern Ireland

The GFCC honored Dr. Bob Barbour and Dr. Paul Madden for their strategic contributions to Northern Ireland's economic development.

In the business arena, Dr. Bob Barbour, Director and Chief Executive of the Centre for Competitiveness, and Dr. Paul Madden, Director of the Centre for Competitiveness, have developed a strategic approach to improve the business environment, propelling innovation, and progress in elevating Northern Ireland's place in the world economy. Under their leadership, the Centre for Competitiveness has played a pivotal role in connecting academic expertise and industry challenges, forging relevant partnerships in product development, Industry 4.0, and digitization and decarbonization of the energy supply.

Dr. Bob Barbour brings his knowledge and experience on energy, serving as Chief Executive and Secretariat of the Centre's Energy Business Group, Smart Grid Ireland, and Biogas Ireland. He helps ensure that government policy and regulation are informed of their impact on business and competitiveness. His expertise was built with hands-on leadership work in power plants in Australia and the Middle East, and he expanded his intellectual portfolio as a corporate executive in the ICT sector. He is also engaged in the total quality movement, as the Centre is the National Partner of the European Foundation for Quality Management.

Dr. Paul Madden holds a wealth of knowledge and real-world experience in managing advanced technology projects. For almost two decades, he served as General Manager of Rolls-Royce Aerospace in Northern Ireland, where he implemented a major investment to establish a technology center of excellence for safety-critical software for aircraft engines. But his leadership extended beyond the walls of Rolls Royce—serving as Chairman of the Northern Ireland Aerospace Consortium for 7



**Top left:** The Hon. Deborah L. Wince-Smith, Dr. Stephen Kingon, and Charles "Chad" O. Holliday Jr.

**Top right:** The Hon. Deborah L. Wince-Smith, Professor Sir Ian Greer, and Charles "Chad" O. Holliday Jr.

**Bottom:** The Hon. Deborah L. Wince-Smith, Dr. Paul Madden, Dr. Bob Barbour, and Charles "Chad" O. Holliday Jr.

years. He led a program for software quality training in Central and Eastern Europe, advised the European Commission in developing technology development initiatives, and played a key role in facilitating an Industry 4.0 Collaborative Growth Network of small and medium manufacturing enterprises in Northern Ireland.

The GFCC is honored to celebrate these exceptional leaders for their dedication to advancing knowledge, innovation, and competitiveness globally.

# Day 3

# Nov. 14, 2024



## Hosted by Bill Neely

Queen's University Belfast alumnus Bill Neely, a highly awarded journalist and former Chief Global Correspondent at NBC News, led the final day of the 2024 GIS. With a career that spans decades, Neely has covered major international events, from conflicts and natural disasters to political summits, providing insightful commentary and analysis throughout.

# Theme: The Power of Partnership

Day 3 of the GIS 2024 emphasized the importance of collaboration to advance society and the economy. Speakers centered their speeches and discussions on successful partnerships between industries, governments, and communities that enhance innovation and drive collective progress toward a sustainable future.

## Perspectives for the Future

### Hilary Benn MP

Secretary of State for Northern Ireland

### Joseph Kennedy III

U.S. Special Envoy for Northern Ireland

Innovation thrives on collaboration. Communities, innovators, businesses, scientists, and policymakers must work together to address the challenges facing humanity, such as conflict, poverty, mass migration, biodiversity loss, and climate change.

Northern Ireland has a rich history of innovation, exemplified by Hillary Benn by inventions like the modern tractor, pneumatic tire, portable defibrillator, and ejector seat. Today, the region is poised to lead in key sectors like green energy and cybersecurity. Addressing climate change is urgent, and Northern Ireland has the potential to play a significant role in the transition to a sustainable future.

Collaboration is essential for driving innovation, but so is competition. The interplay between these two forces can spark groundbreaking advancements, as illustrated by Joseph Kennedy III, through the story of the rivalry between Harry Ferguson and Henry Ford, which ultimately revolutionized agricultural practices.



**Left:** Hilary Benn MP, Secretary of State for Northern Ireland.

**Right:** Joseph Kennedy III, U.S. Special Envoy for Northern Ireland.

Queen's University exemplifies the spirit of collaboration by fostering education and cross-community partnerships which creates a fertile ground for attracting investment and driving innovation. Northern Ireland has the potential to be a global leader in innovation by fostering collaboration, embracing competition, and investing in key sectors like green energy and cybersecurity.



PANEL CONVERSATION

# Making Innovation Partnerships Work in Practice

**MODERATOR**

**Joan Gabel**

Chancellor, University of Pittsburgh, USA

**DISCUSSANTS**

**Dr. Michinari Hamaguchi**

Director General of SCARDA, AMED; GFCC Distinguished Fellow, Japan

**Margaret Hearty**

Chief Executive, InterTradeIreland, NI & Ireland

**Dr. Matthew Hulver**

VP of Knowledge Enterprise Initiatives, ASU Knowledge Enterprise, USA

**Dr. Nkem Khumbah**

Head of STI Policy Systems, Governance and Partnerships, African Academy of Science; GFCC Senior Fellow, Kenya

**Ahmad Razif Mohamad**

Head of International Partnership, MIGHT, Malaysia

The practical implementation of innovation hinges on strong partnerships, yet forming these partnerships presents challenges. Despite these hurdles, many countries and organizations have successfully navigated these obstacles to develop innovative solutions for complex business and societal problems.

Partnerships between industry and academia are fundamental to fostering innovation and competitiveness. However, a significant cultural gap often exists between these sectors. Building trust, which is essential for effective partnerships, requires consistent communication and a shared vision. Dr. Michinari Hamaguchi highlights Japan's successful use of a "vision-driven approach" and the "under one roof" concept, which promotes daily interaction to build trust and collaboration. These strategies have yielded significant economic benefits in Japan, with investments demonstrating eight times higher direct investment effects and eighteen times higher indirect investment effects.

InterTrade Ireland, established under the Good Friday Belfast Agreement, exemplifies the power of cross-border partnerships. By fostering collaborative innovation between Northern Ireland and the Republic of Ireland, InterTrade Ireland connects businesses, academia, and industry, serving as a key enabler for enhanced competitiveness. The prevalence of small businesses in both regions underscores the importance of clusters in driving competitiveness and productivity. Notably, startups within clusters have been shown to grow 141 percent faster.

Dr. Matthew Hulver explained that Arizona State University (ASU) has adopted a unique approach to convening diverse partners around "wicked challenges" by forming innovation zones. These zones facilitate collaboration among academia, industry, and government. ASU's success in securing a microelectronics commons hub and a regional sustainability hub underscores the university's pivotal role in addressing significant societal and environmental issues through robust partnerships. Universities, acting as unbiased conveners, can facilitate these partnerships and create innovation zones that address both industry needs and societal challenges.



Dr. Nkem Khumbah, Ahmad Razif Mohamad, Chancellor Joan Gabel, Dr. Matthew Hulver, Margaret Hearty and Dr. Michinari Hamaguchi.

In Malaysia, MIGHT plays a crucial role in uniting government and industry to collaborate on high-tech areas. Utilizing foresight methodology and consensus building, MIGHT develops joint funding programs that effectively bridge the gap between industry and academia. This case presented by Ahmad Razif Mohamad highlights the importance of science diplomacy and employs the FIRST methodology (Financial, Infrastructure, Regularity, Skills, and Technology) as a framework for international collaboration.

The African Academy of Sciences is spearheading efforts to transform Africa's higher education system, with partnerships being an essential component of the academy's work under the portfolio of Dr. Nkem Kumbah. With projections indicating that 40 percent of the world's youth will be in Africa in the coming generations, the Academy is focused on converting this demographic potential into a global talent pool. This ambitious endeavor involves reinventing governance, funding models, and infrastructure to foster a skilled workforce capable of driving innovation and addressing global challenges.

Partnerships and collaboration are critical for driving innovation. Achieving this requires a vision-driven approach, continuous interaction between stakeholders, and leveraging unique regional strengths. Universities are positioned to act as conveners, bringing together diverse partners to create an environment where innovation can flourish, ultimately leading to substantial economic and social benefits.

## Key takeaways

- Collaboration is Essential but Requires Effort:** Effective collaboration doesn't occur spontaneously. It necessitates deliberate effort, structured approaches, investment and often a neutral convener, like a university, to bridge gaps between sectors and foster trust.
- Place-Based Innovation Harnesses Regional Strengths:** Tailoring innovation initiatives to the specific needs, resources, and culture of a particular region is crucial for creating relevant and impactful solutions. Multiple stakeholders such as government, industry and universities should come together to empower regions to build its own unique innovation ecosystem.
- Global Challenges Necessitate Global Partnerships:** Addressing global challenges such as climate change, workforce development, and economic growth requires international collaboration. Science diplomacy can play a pivotal role in uniting the best minds and resources worldwide to tackle shared challenges and build a truly global community. The importance of these partnerships is continually increasing.

PANEL CONVERSATION

# Breaking Barriers: The Impact of Women in Shaping an Innovative Economy

**MODERATOR**

**Prof. Karen McCloskey**

Director, Queen's Gender Initiative, Queen's University of Belfast, NI

**DISCUSSANTS**

**Dr. Raja Al Gurg**

Group MD & Chairperson, Easa Saleh Al Gurg Group, UAE

**Athina Chatzipetrou**

GFCC Distinguished Fellow, Greece

**Clare McGee**

CEO, Awaken Hub/Awaken Angels, NI

**Sinead Rocks**

Managing Director, Nations & Regions at Channel 4, UK

**Amb. Barbara Stephenson**

Vice Provost for Global Affairs and Chief Global Officer, University of North Carolina in Chapel Hill, USA

Women have undeniably made their mark on innovation across a multitude of sectors, including media, business, entrepreneurship, public service, and higher education. However, despite recent progress, a persistent underrepresentation of women in leadership positions remains, particularly within the technology sector. Startling statistics reveal that women occupy a mere 22 percent of tech roles in European companies, earn significantly less than their male counterparts, and are more likely to leave the industry mid-career. Several factors are contributing to this disparity, including a concerning trend of declining interest in STEM subjects among girls between 11 and 15. As Athina Chatzipetrou stated, "Girls are interested in STEM at age 11, but have a change of heart by age 15. The main reason for this switch is a lack of role models."

Regardless of geographic location, women share common experiences and challenges in balancing their professional aspirations with personal responsibilities. They often face historical and societal barriers that marginalize them in professional settings. However, navigating these challenges can lead to significant personal and professional growth. Overcoming obstacles cultivates resilience, enhances skills, and ultimately strengthens one's resolve. This underscores the importance of self-belief as a vital ingredient for women to navigate and succeed in often male-dominated environments.

The media plays a powerful role in shaping societal perceptions and, unfortunately, may perpetuate traditional gender stereotypes if not featuring women leaders in key decision-making roles. This biased coverage reinforces limiting beliefs about women's capabilities and underscores the urgent need for a more balanced and accurate representation in the media landscape.





Athina Chatzipetrou, Amb. Barbara Stephenson, Prof. Karen McCloskey, Sinead Rocks, Clare McGee and Dr. Raja Al Gurg.

The power of partnerships and allies is also a crucial element in driving meaningful change. Organizations like Awaken Hub and Awaken Angels serve as examples of grassroots movements effectively supporting women founders and fostering a more inclusive entrepreneurial ecosystem. In a rapidly changing world, particularly with the rise of AI, personal attributes such as adaptability, resilience, and commitment to continuous learning are paramount. To ensure women's access to leadership positions, it's crucial to move beyond simply hiring at entry-level. Actively encouraging women to apply for leadership roles, implementing progressive policies like shared parental leave, and creating supportive environments are all vital steps.

While progress has been made in closing the gender gap, there is still much work to be done. Continued advocacy, mentorship, and systemic change are essential to ensure that future generations have equal opportunities to thrive and lead. We must foster a future where diversity is not just celebrated but is recognized as a fundamental driver of success. The journey toward gender equality requires a collective effort, a commitment to challenging the status quo, and a belief in the transformative power of women's leadership.

## Key takeaways

- **Role models and representation matter:** The lack of visible female role models, especially in STEM fields, significantly impacts young girls' career aspirations. Media and other sectors need to actively promote diverse representation to inspire the next generation.
- **Challenges can be catalysts for growth:** Women often face unique challenges in the workplace, but overcoming these obstacles can lead to increased resilience, skill development, and ultimately, greater success. Self-belief and a supportive network are crucial for navigating these challenges.
- **Systemic change requires proactive measures:** Simply hiring more women isn't enough. Companies and organizations need to actively encourage women to pursue leadership positions, implement policies that support work-life balance, and foster a culture that values diversity and embraces failure as a learning opportunity.



## Navigating the Future: Embracing AI to Transform Our Workforce and Skills

### Cecilia Harvey

Chief Executive Officer and Founder,  
Tech Women Today, UK

Collaboration is critical for driving technological innovation and achieving a sustainable and equitable future. Cecilia Harvey used the metaphor of an elephant's strength lying in its ecosystem partnerships to illustrate how technology and innovation cannot thrive in isolation. Partnerships between industries, governments, and communities are essential for achieving impactful outcomes. Examples like Google DeepMind's partnership with the NHS and the International Solar Alliance demonstrate the power of collaboration to address complex challenges.

The future of work demands a focus on upskilling and adaptability in the face of automation and AI. Singapore's Future Skills Initiative serves as a model for preparing the workforce for a changing landscape. Sustainability must be the ultimate goal of innovation. Collaboration is key to addressing global challenges like climate change and inequality, ensuring that technological advancements benefit all of humanity.



## Leading Northern Ireland Forward

### Michelle O'Neill, MLA

First Minister of Northern Ireland, NI

### Emma Little-Pengelly, MLA

Deputy First Minister of Northern Ireland, NI

Partnership and innovation are crucial for driving economic growth and achieving a sustainable future for Northern Ireland. The collaborative approach enshrined in the Good Friday Agreement has proven successful, stressing the need for continued cross-sector partnerships to achieve key priorities such as investing in public services, protecting the environment, and developing a skilled workforce. Initiatives aimed at fostering innovation, including the appointment of a chief scientific advisor and investment in renewable energy, are vital for future prosperity.

A data-driven approach to governance, utilizing technology to increase efficiency and productivity, is indispensable in today's world and can address public dissatisfaction with government delivery. Governments must embrace technology and innovation to improve public services and meet the demands of a rapidly changing world. Northern Ireland's successful transition to a leader in sectors like cybersecurity and fintech demonstrates the potential for further growth through collaboration between government, academia, and business. By embracing innovation, collaboration, and a data-driven approach, Northern Ireland can achieve a prosperous future where the benefits of progress reach all citizens.

## PANEL CONVERSATION

# Voluntary, Community and Social Enterprise (VCSE) – Innovating for Social Change

The voluntary and community sector demonstrates inherent innovation, leveraging creative solutions to tackle complex social problems daily. As Celine McStravick highlighted, "Innovation is their 'bread and butter,'" driven by necessity and exemplified by the sector's rapid and agile response to the COVID-19 pandemic. Initiatives such as establishing food banks and transitioning mental health support online during the crisis showcased the sector's ability to act swiftly and effectively, often outpacing government processes.

Technology plays a crucial role in driving social innovation forward. The example of Madlug, a social enterprise, illustrates how technology can enable the testing and growth of impactful initiatives with minimal initial investment. While partnerships between technology companies and social enterprises hold immense potential for maximizing social impact, they also necessitate careful consideration of technology's potential downsides, such as environmental concerns, requiring collaborative solutions to mitigate these risks.

Effective innovation hinges on robust collaboration between the voluntary sector, businesses, and government. This collaboration requires clear, shared objectives and equal partnerships, underpinned by mutual respect and trust. Co-design processes that genuinely involve all stakeholders are essential to ensure that interventions meet the needs of everyone involved. A successful example of such collaboration is the partnership between the Orchardville Society and Coca-Cola, which integrated individuals with learning disabilities into the workforce, demonstrating the profound social value that innovative partnerships can create.

However, the sector faces significant financial challenges, often hampered by unsustainable funding models. A shift towards diversified income streams and community wealth building is crucial. Organizations like Women's Tech and Resurgium exemplify this by developing innovative ways to generate income while remaining true to their core missions. Funding

### MODERATOR

**Prof. Kathryn Higgins**

Director, Queen's Communities and Place, NI

### DISCUSSANTS

**David Linton**

Founder and CEO, Madlug C.I.C, NI

**Jonathan McAlpin**

Vice Chair & CEO, East Belfast Enterprise, NI

**Celine McStravick**

CEO, NICVA, NI

models should be reconceptualized as contracts that empower organizations to deliver services effectively, rather than grants that impose excessive control and oversight. There is a pressing need for funding that allows for full cost recovery, investment in staff development, and the freedom to take risks and learn from failures.

Ultimately, a balanced approach to financial sustainability and social impact is essential. This requires greater trust, respect, and collaboration among all sectors to create an environment where innovation can flourish. True innovation often emerges from necessity, making it vital to create, by design, space for experimentation and learning. The panelists urged a shift in social society organizations from a mindset of competition to one of collaboration, where the unique strengths of each sector are leveraged to achieve common goals. By embracing these principles, we can unlock the full potential of the voluntary and community sector to drive meaningful social change.





Celine McStravick, Prof. Kathryn Higgins, David Linton, Prof. Jonathan McAlpin and Bill Neely

## Key takeaways

- **Innovation is Inherent in the Voluntary Sector:** The voluntary and community sector possesses an inherent capacity for innovation, driven by necessity and a deep commitment to addressing complex social problems. These organizations demonstrate remarkable agility and creativity in delivering impactful solutions to solve societal problems.
- **Technology and Collaboration are Force Multipliers:** Leveraging technology and fostering genuine, equitable collaboration between the voluntary sector, businesses, and government are essential for maximizing social impact. Technology can amplify the reach and effectiveness of initiatives, while well-structured partnerships can bridge gaps and create synergistic outcomes. These partnerships must have clear objectives and build trust between the different entities.
- **Funding Models Need to be Reimagined:** Current funding models often hinder the voluntary and community sector's ability to innovate. We need to shift towards sustainable funding models that give organizations autonomy, allow them to recover full costs, and encourage them to invest in staff development. These models should empower organizations to experiment, take risks, and learn from failures. Funders should aim to build trust and collaborate with organizations to design these new models.

## Greater Manchester's Transformation: An Inclusive and Sustainable Model for Building a City Region

**Bev Craig, Councillor**  
Manchester City Council

**The Right Honourable Mayor Andy Burnham**  
Mayor of Greater Manchester, UK

Manchester's journey over the past 15-20 years from a symbol of post-industrial decline to a thriving hub of innovation and economic growth is a testament to the city's ability to reimagine itself and adapt to the changing global economy. Councillor Bev Craig highlights five key principles that underpin Manchester's success: ambition and reimagination; investing in the "ingredients of place" to enhance livability; intentional diversification of the economy; purposeful growth with a focus on creating jobs and opportunities for residents; and strong partnerships with business, research, and civic institutions.

The city's collaborative spirit is embodied in its unique model of devolved governance that unites public, private, and civic sectors in a shared mission which yielded impressive results, with significant job growth, foreign direct investment, and productivity gains. By fostering innovation and encouraging partnerships between businesses, universities, and government, Manchester has created a thriving and inclusive economy.

While challenges remain, including poverty and health inequalities, devolution and collaboration are making a positive impact. Mayor Andy Burnham highlighted that ambitious plans are underway to transform technical education and create a more inclusive economy and believes Manchester can serve as a model for other cities navigating the challenges and opportunities of the post-industrial world. Its success demonstrates the power of collaboration, innovation, and a place-based approach to development.



**Top:** Bev Craig, Councillor, Manchester City Council.

**Bottom:** The Right Honourable Mayor Andy Burnham, Mayor of Greater Manchester, UK.

## CONVERSATION

# South-North Global Partnerships

### MODERATOR

Bill Neely

### DISCUSSANTS

#### David Donoghue

Former Irish ambassador and former Irish Permanent Representative to the United Nations, Ireland

#### Dr. Hippolyte Fofack

GFCC Distinguished Fellow, USA

#### Dr. Nkem Khumbah

Head of STI Policy Systems, Governance and Partnerships, African Academy of Science; GFCC Senior Fellow, Kenya

While the world faces a complex landscape of global challenges, including climate change, pandemics, and the rise of artificial intelligence, there's a growing need for stronger international cooperation. Although a divide persists between the Global North and the Global South, with economic disparities fueling geopolitical tensions, it also presents an opportunity for positive change.

There are indications that the gap between low-income countries and advanced economies is widening, however, we can also observe positive signs of income convergence in some parts of the emerging Global South. Dr. Nkem Khumbah highlighted a growing awareness and sense of urgency within the Global South, as access to information via social media brings global inequalities into focus. This has sparked calls for a more equitable "bargain" on the world stage, prompting leaders to re-examine existing global financial structures and explore alternatives like BRICS.

Recent events, such as the challenges faced in achieving equitable COVID-19 vaccine distribution, have understandably strained trust between the Global North and South. However, these challenges also underscore the need for a renewed commitment to multilateralism and reform. These events are viewed not in isolation but within a broader historical context. Encouragingly, regions like Africa are demonstrating a growing commitment to self-reliance, shifting away from aid dependency towards a focus on mutually beneficial partnerships, particularly in trade. Dr. Hippolyte Fofack emphasized that, "We have to frame the development agenda in a way that is beneficial to everybody. And partnership, quite frankly, has been and remains a cornerstone of global growth and global convergence."

While current global efforts, such as the COP conferences, have faced obstacles, the continued political commitment to the Sustainable Development Goals (SDGs) offers a valuable framework for progress. The journey towards achieving the SDGs should inspire us to seek new ways to collaborate and build partnerships. To maximize impact, there's a recognized need to strengthen the global financial architecture, ensuring that multilateral development banks are adequately resourced and structured to address cross-border challenges effectively.

The path forward requires not just acknowledging the divide between the Global North and South but actively working to bridge it through genuine partnerships. Moving beyond rhetoric, the international community must prioritize tangible action, demanding financial reform, and ensuring that the benefits of progress reach all corners of the globe.





Dr. Nkem Khumbah, Dr. Hippolyte Fofack, Bill Neely and David Donoghue.

## Key takeaways

- **Harness the Opportunity to Innovate in Global Partnership:** The growing awareness of global disparities presents an opportunity to forge a new, more equitable global partnership. The Global South's increasing economic and geopolitical influence provides leverage to reshape international cooperation and create a "better bargain" that can benefit all.
- **Rebuild Trust Through Action:** While past events have strained trust between the Global North and South, there is potential to rebuild it through concrete actions and new channels for people-to-people connections. Collaborative efforts focused on shared challenges, equitable resource distribution, and a genuine commitment to mutual benefit can pave the way for renewed cooperation.
- **Create Momentum Towards Sustainable Development:** Despite the challenges, there's growing global momentum towards framing the Sustainable Development Goals as innovation opportunities and crafting global partnerships to achieve those. This shared vision, coupled with a renewed focus on value-driven partnerships and financial reform, can drive significant progress. By embracing innovation, collaboration, and a commitment to implementation, the international community can unlock a more sustainable and prosperous future for all.

PANEL CONVERSATION

# Navigating the Competitiveness Landscape in a Fast-Changing World

**MODERATOR**

**The Hon. Deborah L. Wince-Smith**

Founder and President, GFCC; President and CEO, Council on Competitiveness, USA

**Charles "Chad" O. Holliday Jr.**

Chairman, GFCC, USA

**Dr. Hippolyte Fofack**

GFCC Distinguished Fellow, USA

**Jeremie Brecheisen**

Managing Partner, Gallup EMEA, UK

**James Applegate**

U.S. Consul General in Northern Ireland, USA

The world is experiencing profound shifts driven by rapid advancements in technology, changing demographics, climate change, and increasingly complex political landscapes. These shifts are significantly impacting global competitiveness and cooperation. This fast-changing world presents various challenges to all types of organizations, causes mental strain for many people, and creates new and unforeseen opportunities.

Jeremy Brecheisen of Gallup highlighted the importance of the "emotional economy," stating that "There is more than just a financial economy out there. There's an emotional economy, and it gets ignored far too often." Well-being is under pressure in many parts of the world, influenced by factors like climate change and economic conditions. These factors are reshaping migration patterns and geopolitical dynamics, with Gallup data showing a decline in the perception of U.S. soft power in Africa compared to China. Furthermore, Europe is facing particularly low employee engagement, as Brecheisen noted, European

employees "feel less recognized and valued than anywhere else in the world. They feel less connected to the mission and purpose of their company."

In response to these rapid changes, proactive adaptation is crucial. Panelists identified two key areas as the ones that need immediate action: artificial intelligence and climate change. AI's transformative potential can be compared to the printing press revolution and it will profoundly reshape industries and society. Additionally, there is urgency in adapting to increasingly severe weather patterns, which are already causing significant global impacts.

Governments, however, are struggling to keep up with the pace of technological change, particularly in the realm of AI. There's a delicate balance to be struck between fostering innovation and implementing necessary regulations. Moreover, there's a growing need to address the social and emotional dimensions of these changes, ensuring that people do not feel left behind by the digital economy. This includes initiatives like promoting vocational education and creating diverse pathways to economic opportunity.

Another significant shift is the eastward movement of the center of gravity for trade, especially in manufacturing, while the financing of trade remains largely anchored in the West. This dynamic poses unique challenges for Africa, which has seen China emerge as its largest trading partner. While platforms like the Forum on China-Africa Cooperation (FOCAC) have facilitated substantial Chinese investment in African infrastructure, the resulting trade relationship is marked by significant imbalances. This situation mirrors Africa's historical trade patterns with Europe, raising concerns about recurring debt issues. A new model of partnership should foster sustainable development, support high-return investments, and promote fiscal sustainability. This new model would help Africa integrate more effectively into the global economy and make meaningful



James Applegate, Jeremie Brecheisen, The Hin. Deborah L. Wince-Smith, Dr. Hippolyte Fofack and Charles "CHad" O. Holliday.

progress toward the Sustainable Development Goals (SDGs), offering a chance to redefine its global relationships and break free from cycles of debt.

Navigating these global shifts requires a multifaceted approach that balances technological advancement with human well-being and economic realities. Proactive adaptation, thoughtful regulation, and a commitment to inclusive growth are essential. By addressing both the economic and emotional dimensions of this rapidly changing landscape, we can create a more resilient and equitable global future. The challenges are substantial, but with strategic action and international cooperation, there are also significant opportunities for positive transformation.

## Key takeaways

- Address the Emotional Economy Aspects:** The world is increasingly recognizing the importance of the "emotional economy," where factors like well-being, recognition, and purpose significantly impact individuals and societies. Addressing this emotional dimension alongside traditional economic indicators is vital for navigating global shifts, fostering engagement, and ensuring societal well-being.
- AI and Climate Change Demand Action:** Rapid advancements in AI and the escalating impacts of climate change are two important forces reshaping our world, demanding attention. Societies and governments need proactive measures to harness the transformative potential of AI while mitigating the risks of climate change through adaptation and sustainable practices.
- New Models for Global Partnerships are Needed:** The global center of trade is shifting eastward, creating new dynamics and challenges, particularly for regions like Africa, that require rethinking traditional development models. Establishing new, more equitable partnerships based on mutual benefit, sustainable development, and high-return investments is crucial for achieving the SDGs and fostering a more balanced global economy.



# Launch of GIS 2025

**Secretary Hillary Rodham Clinton**

Chancellor, Queen's University of Belfast,

**Joan Gabel**

Chancellor, University of Pittsburgh, USA

**The Hon. Deborah L. Wince-Smith**

Founder and President, GFCC

President and CEO, Council on Competitiveness, USA



The Hon. Deborah L. Wince-Smith, Founder and President, GFCC, and President and CEO, Council on Competitiveness, USA; Secretary Hillary Rodham Clinton, Chancellor, Queen's University of Belfast; and Joan Gabel, Chancellor, University of Pittsburgh, USA.

The University of Pittsburgh, a leading research and innovation institution committed to addressing global challenges, will host the next Global Innovation Summit in Pittsburgh, Pennsylvania starting on October 20, 2025. Joan Gabel, Chancellor of the University of Pittsburgh, highlighted the city's role in the American Industrial Revolution and its status as a hub for technology and innovation. Sectors like AI, robotics, and life sciences are thriving, fueled by collaboration and entrepreneurship. Secretary Hillary Rodham Clinton described Pittsburgh as a city that embodies the past, present, and future. Like Belfast, Pittsburgh is reinventing itself, with its waterfront now home to tech start-ups and its historic factories repurposed as innovation hubs.

This spirit of reinvention is reflected in the role of higher education as a catalyst for progress. Investing in universities is a necessity, a public good that fuels innovation and inspires future generations. Partnerships between universities and the business community are essential for a thriving innovation ecosystem as well as nurturing young minds to foster an entrepreneurial spirit. To realize the potential of student initiatives and young innovators, government investments in advanced manufacturing, infrastructure, and AI are important, but public-private partnerships are essential. Continued investment in higher education, fostering public-private partnerships, and nurturing innovators will create a future with more opportunities and shared prosperity.

# Day 4

## Nov. 15, 2024

Following four days of discussions at the 2024 Annual Meeting and Global Innovation Summit in Belfast, participants embarked on an excursion to two industry sites. This provided an opportunity for GFCC members and fellows to witness firsthand the activities and capabilities of these innovative businesses, while engaging in dialogue with industry representatives. The activities at the companies centered on their innovative products and services, unique business models, and strategic initiatives driving the development of new technologies – all within the context of the dynamic local ecosystem. The site visits included Wrightbus in Ballymena and Catagen in Belfast.

## Wrightbus

Wrightbus, a leading Northern Irish bus manufacturer based in Ballymena, is globally recognized for its pioneering work in zero-emission transportation. The company has been instrumental in the development of hydrogen fuel cell and battery-electric buses, providing sustainable public transport solutions to cities worldwide. Known for their innovative designs and commitment to reducing carbon emissions, Wrightbus is at the forefront of the green transport revolution, driving advancements in technology and contributing significantly to the evolution of the modern bus industry.

During the visit, participants gained valuable insights into Wrightbus's trajectory and rapid growth. The discussion covered the logistical challenges and market opportunities associated with this expansion, as well as the company's main current markets and rising exports. A highlight of the visit was a first-hand look at their production line, featuring unique designs customized to accommodate the specific requirements of different fuel types. Participants also learned about Wrightbus's comprehensive service line, designed to ensure optimal fleet performance. Furthermore, the visit shed light on Wrightbus's organic relationship with Queen's University Belfast. This collaboration includes the circulation of personnel between the company and the University, an on-campus R&D facility, where many of Wrightbus's core innovations are developed and future talent is trained, highlighting the fruitful synergy between industry and academia.

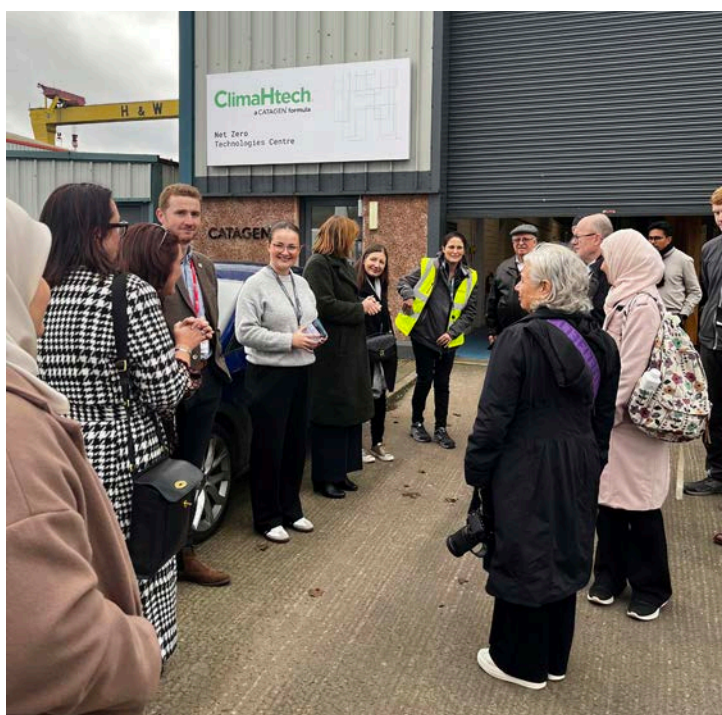




## Catagen

Catagen, a Belfast-based company, is a leader in advanced emissions testing and aftertreatment development, playing a crucial role in helping the automotive, heavy-duty, and marine industries meet stringent global emissions standards. Through its patented testing technologies, Catagen provides highly accurate and cost-effective solutions for evaluating the performance of catalytic converters and other emissions control systems. These services enable manufacturers to optimize engine calibration and aftertreatment design, accelerating the development of cleaner, more efficient vehicles.

Recognizing the technological shift towards electric vehicles (EVs), Catagen has proactively leveraged its expertise to identify new opportunities in emerging, decarbonized industry verticals. During the visit, participants were given an exclusive look at Catagen's state-of-the-art testing facilities and emissions data system in operation. This firsthand observation extended to their latest advancements in carbon capture technologies and platforms designed for the generation of green and bio-hydrogen fuels. Catagen is committed to pioneering the development of sustainable fuel alternatives and decarbonization solutions, solidifying their position as a key player in the global effort to combat air pollution and promote sustainable manufacturing.



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