

Women in STEM Steering Group 2020-21 Review



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DfE Women in STEM Steering Group 2020-21 Review

Introduction

The Women in STEM Steering Group was convened in October 2020 to provide advice and strategic oversight to the Department for the Economy (DfE) in developing and implementing the recommendations outlined in the Matrix 2018 Women in STEM Report.

The steering group is made up of key stakeholders from industry, education and the public sector. Appointed members represent the broad interests of their sector in Northern Ireland while having an overarching desire to address all of the issues facing girls and women in STEM education and careers.

The high-level aim of the steering group is:

“To have more girls participating in STEM education and STEM employment and that more STEM employers are fully inclusive and representative of a diverse workforce. Furthermore that by 2030, 30% of all young people moving into STEM are girls”.

The initial focus of the steering group was to support and oversee the creation of the Northern Ireland WISE Hub, which was formally launched by the DfE Minister in October 2020. Members were tasked with supporting the development of the hub to ensure that it had the best chance of success while meeting the Matrix recommendations.

An Industry Leadership Group, chaired by Emer Murnaghan OBE and comprised of Northern Ireland WISE Hub members, was established in March 2021. The Women in STEM Steering Group will continue to play an active role in informing and promoting the development of the hub.

During 2021, the steering group has been working with stakeholders to develop a shared Vision and Action Plan for Women in STEM in Northern Ireland. Set against a rapidly evolving policy landscape, the steering group has supported the DfE through various activities to develop a plan for action on this agenda that will underpin the Department’s [Vision for a 10X Economy](#) and other complementary strategies to ensure that the necessary policies for progress are embedded. This work will continue to develop over the coming months into 2022 with continued engagement with the Northern Ireland STEM ecosystem and government departments.

The steering group has undertaken a series of activities with DfE this year to ensure that Northern Ireland’s economic policy reflects the needs of girls and women who want to work in STEM careers.

Foreword by Co-Chairs

It is hard to believe that only a year has passed since the Department for the Economy formed the Women in STEM Steering Group to develop the recommendations of the 2018 Matrix Women in STEM report. So much has been achieved in the last twelve months, thanks to the drive and determination of the group members and the department.

The launch of the Northern Ireland WISE Hub last autumn was the first step towards achieving the steering group's goals. The hub is going from strength to strength, and with its industry leadership group chaired by Emer Murnaghan we have no doubt that it will continue to grow in size and develop in ambition over the coming years.



While we are delighted at the success of the NI WISE Hub, the main project undertaken by the steering group this year was the development of an action plan to embed the group's recommendations to encourage women and girls into STEM careers into economic policy. We co-designed the action plan with the Department for the Economy with support from Waverley Consulting and we look forward to its publication in the very near future.

The Department for the Economy's Vision for a 10X Economy sets out that to deliver an economy that is 10x stronger, 10x more prosperous and 10x more resilient will require the transformation of our skills system. It means addressing skills imbalances and drive increased participation in the In Demand STEM subjects that will underpin our economic success. The action plan takes the 10x Vision and sets out what is specifically required to address the under-representation of women in STEM and how this will contribute to this economic vision. Encouraging more girls and women to choose In Demand STEM subjects - and developing the skills pipeline to support them - is essential to achieving the 10x ambition.

As we developed the recommendations for the action plan, we also became aware of some projects in other regions which had demonstrably succeeded in delivering on some of our targets. The steering group endorsed three projects for pilots in Northern Ireland and bids were prepared for funding through the Economic Recovery Action Plan (ERAP). We were delighted to learn recently that funding has been allocated to all three projects and we look forward to following their progress.

One of the three projects will be delivered by the Royal Academy of Engineering and involves the development and delivery of a Talent and Diversity initiative, tailored to Northern Ireland, but based on the Academy's existing Welsh Valleys Project. It will bring together schools, colleges, universities, industry, local government and wider STEM stakeholders to deliver a sustained STEM education programme. The aim is to raise the

aspirations of a diverse range of young people to pursue STEM subjects and STEM careers, with a focus on engineering pathways.

As part of this activity and to help deliver high quality programmes, the Department has agreed to formalise its partnership with the Royal Academy through a Memorandum of Understanding - an agreement between the organisations to work together to deliver projects with clearly aligned goals and values.

So in just twelve short months we have co-designed an action plan to support women in STEM as part of the 10x economic vision, provided evidence to identify and endorse programmes which will support students and teachers in STEM activities, and seen the Department for the Economy and the Royal Academy of Engineering formally undertaking to work together to deliver projects which will help achieve our shared goals. In addition, the steering group has contributed to many other plans and strategies, such as the DfE Skills Strategy, the DfC Gender Equality Strategy and the joint DfE/DE 14-19 Framework. We have been very proactive as a group in contributing to these complementary areas of policy and Women in STEM is now formally recognised in these documents.

We are very grateful for the resilience and continued enthusiasm of every member of the steering group. Their ongoing commitment in collecting and presenting evidence, developing recommendations for action and supporting the aims of the steering group in everything they do has been vital in delivering the achievements of the past year.

We would also like to thank the Department for the Economy for all their hard work and support this year – their commitment to a shared vision of economic prosperity and their understanding that addressing the under-representation of women in STEM is critical to it has been vital to our work.

Over the years, both of us have had the privilege to help shape the skills policy landscape in Northern Ireland through various panels and groups, and it is truly encouraging to see actions already being taken forward so quickly and with such commitment by the department to deliver on the Women in STEM Action Plan.

We look forward to continuing to work with the department in the coming year, and hope that other departments will share the same sense of urgency and commitment to take action to solve this issue. Together we can ensure that Northern Ireland takes full advantage of all of the benefits that a diverse workforce will bring.

Dr Bryan Keating CBE and Professor Eileen Harkin Jones OBE FREng

Co-Chairs of the DfE Women in STEM Steering Group

The 2020/21 Steering Group



Co-Chair – Prof. Eileen Harkin-Jones



Co-Chair - Dr. Bryan Keating



Mary McKenna



Christine White



Renee O'Cleary



Emer Murnaghan



Frank Fleming



Gillian McColgan



Rebecca Walsh



Gillian Gregg



John Healy



Jayne Brady



Karen Sheeran



Rose Mary Stalker

This year's highlights

The Northern Ireland WISE Hub is launched

The DfE Minister formally launched the Northern Ireland WISE Hub in October 2020. Since then, and during a very challenging operational environment, the hub has gone from strength to strength.

Formation of the Northern Ireland WISE Hub Leadership Team

Led by Emer Murnaghan, Graham Construction and WISE Ambassador, the leadership team meets monthly and includes Tara O'Brien (UU and WISE Ambassador), Karen McCloskey (QUB), Mary Meehan (Manufacturing NI and WISE member) and Ruth Blanco (WISE).

Development of the Leadership Team handbook

A comprehensive guide was developed to support the Northern Ireland WISE Hub Steering Group in order to:

- **Make the Case** - The business case, legislation and good practice
- **Take Action** - Establish the steering group, build a strong membership base, develop and promote networking and training events
- **Measure Success** - Identify progress and celebrate success, prepare for Year 2

Development of Northern Ireland WISE Hub webpages

The Pulsar website was established to share information about the hub, the event programme (4/year minimum), access to toolkits and resources for members and quarterly newsletter. There is also a Twitter account, @Pulsar_NI which signposts relevant information and has 311 followers.

Events

The steering group has contributed to several events including those organised by the Northern Ireland WISE Hub and the Equality Commission:

- October 2020 - Launch of the Northern Ireland WISE Hub (Rebecca Walsh and Emer Murnaghan)
- March 2021 - Senior Leaders Breakfast (John Healy)
- June 2021 – Meeting the STEM workforce challenge (Emer Murnaghan)
- June 2021 – Building the Pathway to Success (Emer Murnaghan)
- August 2021 – Equality Commission Webinar (Emer Murnaghan)

Publication of the Women in STEM Action Plan

Co-designed with policy makers, informed by stakeholders representing the Northern Ireland STEM ecosystem, and produced with support from Waverley Consulting, the steering group has presented a draft action plan to the DfE that will ensure future economic policy reflects the needs of girls and women who want to work in STEM careers.

The Northern Ireland Women in STEM Action Plan highlights the urgent need for our education system to enhance the support offered to our young people to make better informed choices for their future and raise confidence and aspirations in the many varied and rewarding STEM pathways. The action plan also presents solutions to better support women in STEM careers.

The action plan is currently in final draft and will be published in the coming weeks. It challenges leaders across government to strike out on an ambitious footing. It also highlights the fact that there is great appetite for this ambition throughout the Northern Ireland STEM ecosystem as all key players share the same vision for women in STEM in Northern Ireland.

The secretariat is already taking forward some of the ‘must do’ actions contained in the plan:

- Developing a detailed map of the Northern Ireland women in STEM ecosystem
- Developing a deeper understanding of the influences on girls from 0-5 and through the transition into primary school
- Undertaking detailed desk research into the known challenges faced by other economies seeking to increase the number of women in STEM
- Building a learning network with policy makers internationally

The secretariat will soon approach our stakeholders and bring organisations together to review existing provision and to determine how to better co-ordinate services and to plug existing gaps. This will be informed by evidence and learning from other initiatives and regions.

Funding Secured for Delivery

In June 2021, the steering group endorsed projects to go forward in a Departmental bid for funding through the Economic Recovery Action Plan (ERAP). We are delighted to report that this bid was successful and projects focussed on delivering the recommendations of the action plan will be taken forward.

The high-level aim of our ERAP funding is to raise the confidence and aspirations of young people in STEM education and careers through projects to support pupils and teachers and to improve the visibility of STEM pathways and careers for young people.

There are three elements to our ERAP project, Raising Aspiration in STEM Education and Careers - Project RAISE:

1. **Northern Ireland Engineering Education Pilot** - delivered by the RAEng - focused STEM education support and careers guidance for students and teachers over a sustained period from early years, primary through secondary and into tertiary education.
2. **Northern Ireland STEM Learning Project** – enhance STEM teacher confidence by Incentivised Bursary funded intensive CPD and Northern Ireland relevant industry engagement through local Enthuse Partnerships and Teacher placements.
3. **STEM Engagement via Tiktok** – involving the curation of content from existing resources and creation of new content around Pulsar and Matrix sponsored events to improve the visibility of STEM careers for young people using a proven engagement platform.

Informing Policy Development

2021 has been a busy year for strategy development in Northern Ireland and the steering group has contributed directly to a number of strategy documents.

The WiSTEM policy area contributed to the development of the Department's Economic Recovery Action Plan (ERAP) which launched in February and the Northern Ireland Women in STEM Action Plan and Northern Ireland WISE Hub is fully recognised.

The steering group responded to the consultation on the draft Programme for Government during March 2021. In May, the Department published its vision for a 10X Economy, which sets out the opportunities for Northern Ireland to prosper through a decade of innovation. Women in STEM Steering Group members participated in the Matrix consultation exercise and the work of the steering group is recognised.

Since then, a consultation has launched on the Department's draft Skills Strategy - 'Skills For a 10x Economy', and the work of the steering group is fully recognised within one of its proposed commitments (*Commitment 9 - "Recommendations emerging from the Women in STEM Working Group will be fully recognised in the Skills Strategy and subsequent skills action plans."*). The steering group also responded to the public consultation during August.

In June, the priorities for Northern Ireland's inward investment, trade and exports were set out in 'Trade and investment for a 10X Economy'. The importance of Diversity and Inclusion has been recognised.

The steering group also contributed to the 'New Beginnings' Task & Finish group led by Dr. Jayne Brady, as well as the DfE Women in Recovery Task & Finish Group.

Work of the Secretariat

The steering group is supported by a small secretariat which manages communications via the Pulsar website and engages with government departments on behalf of the steering group. In the past year the secretariat has:

- Provided feedback on the Executive's draft COVID Recovery Plan
- Engaged with DfC on the development of the draft Gender Equality Strategy and the work of the steering group will be fully recognised as key objectives relating to WiSTEM are aligned.
- Engaged with senior officials within DE and provided feedback on the joint DfE/DE 14-19 Framework and draft action plan.

The steering group look forward to responding formally to future consultations and contributing to the independent review of education to be launched by DE in the coming weeks.

The secretariat will continue to liaise with relevant DfE policy areas including the ongoing development of 10X Economy work streams, the draft skills strategy, the new careers strategy and wider skills work streams, the innovation strategy and the future landscape of employment to support a green economy.

In February 2021, the Secretariat Project Manager Dr Kathryn McKenna and Communications Manager Vicky Newman were both recognised at the national Government Science and Engineering (GSE) event "It's Time to Celebrate Women in Government Science and Engineering", each winning an Inspirational Science & Engineering award for their work together on Women in STEM.

Other

Co-Chair, Bryan Keating was invited by the IOD to write an article reflecting on his experiences of Diversity and Inclusion in STEM. This will be published in the coming weeks.



Covid Statement:

The Northern Ireland WISE Hub Project

Despite Covid 19, and after significant disruption due to national lockdowns:

- Project roll out was enabled by adapting to an online format which can be returned to face to face, if required, when restrictions ease.
- The NI WISE Hub has been developed over a slightly longer timeframe and now has a strong steering group (the industry leadership group chaired by Emer Murnaghan), and a broad and committed membership.
- The programme of events has been adapted for online delivery.

The engagement and training of role models continues online.

The Northern Ireland WISE Hub

The initial focus of the steering group was to support and oversee the creation of the Northern Ireland WISE Hub in October 2020. Members were tasked with supporting the development of the Hub to ensure that the hub had the best chance of success while meeting the Matrix recommendations.

The steering group monitored delivery of this project against a number of objectives.

Delivering against objective 1:

Research to baseline and monitor STEM participation rates and assess the impact of interventions in Northern Ireland.

Baseline Report April 2020 – Summary:

- Northern Ireland has **fewer girls studying GCSE Computing and Chemistry** than the UK average, but **more females doing A Level and degree qualifications** in most STEM subject areas.
- Northern Ireland has **fewer women doing STEM apprenticeships** than the UK average, although with different systems in place in each nation and with low numbers of starts in Northern Ireland comparison may not be entirely reasonable.
- Workforce data from 2019 shows that Northern Ireland is in line with the whole UK in the proportions of engineering and ICT professionals who are female, but has **fewer women in STEM managerial roles**.

Future assessments:

With the changing policy landscape in Northern Ireland and with the help of DfE analysts, the steering group is currently undertaking a refresh of this baseline, expanding the assessment of occupation codes and aligning with high economic growth modelling - with the aim to develop key metrics aligned with the Department's Vision for a 10X Economy and draft Skills for a 10X Economy.

The Northern Ireland WISE Hub will contribute measurements of impact of individual interventions and report back annually through its leadership team to DfE.

Delivering against objective 2 and 4:

Infrastructure to support Collective Impact: A network and framework to support STEM employers improve gender balance within their organisation.

Northern Ireland WISE Hub Membership:

A total of **49 organisations** have committed to supporting the Northern Ireland WISE Hub. This includes 35 employers - 14 WISE members, 10 WISE membership Award winners, 11 employers who are potential new members. QUB and UU are also WISE members and there are **14 STEM partner organisations**.

Events:

The official launch of the Northern Ireland WISE Hub was hosted online with DfE Minister on the 7th October 2020. This was closely followed by a Ten Steps workshop in November and Senior Leaders breakfast in March 2021. A My Skills My Life session which coincided with Apprenticeship Week was delivered to **7 schools (200 pupils)** with Northern Ireland role models and an outreach focused discussion was hosted in June in addition to a meet the STEM Workforce event, also in June. Five future events are planned - See annex I for more detail.

Production of Northern Ireland resources:

Employers' toolkit – a comprehensive guide, with resources, to support employers to:

- **Develop an inclusive culture :**
 - how to make the case, benchmark and set targets
 - how to take action
 - how to make use of WISE good practice guides, training, networking and support.
- **Develop outreach opportunities:**
 - how to identify, support and showcase role models
 - how to showcase STEM careers & pathways
 - how to link with schools, colleges & universities
 - how to access STEM opportunities & organisations.

Delivering against objective 2 and 3:

Infrastructure to support Collective Impact: A service to improve the visibility of young STEM role models from Northern Ireland and to promote the breadth of STEM career opportunities available.

Raising the visibility of STEM role models & careers

- There are now **38 Northern Ireland role models** (and counting) included on [WISE My Skills, My Life](#) platform.
- Northern Ireland WISE Hub member organisations are supported and encouraged to identify and add new role models and to add their company profile.
- Schools and STEM organisations are supported to access role models through the platform and to use the interactive quiz, training role models
- **My Skills My Life delivery:** My Skills My Life Ambassadors supported to deliver WISE My Skills My Life across the region, signposting to role model opportunities – training, events etc. included in resources. My Skills My Life Sessions are being delivered to primary and secondary schools, and opportunities to showcase role models are being utilised – for example, the DfE Careers Unit recently published a future advanced manufacturing bulletin.

Production of Northern Ireland role model toolkit

A role model toolkit has been produced. This is a comprehensive guide, with resources to support Northern Ireland role models to:

- **Become a STEM Role Model** - Why role models? Call to action to sign up to My Skills My Life NI; how to access good practice guides for role models, and; My Skills My Life Ambassador Training
- **Next steps** – how to seek out role model opportunities; become a STEM Ambassador, and; how to access STEM opportunities & organisations.

Engagement with schools

A number of successful events have taken place with schools across Northern Ireland and these have been received positively. The WISE Hub is undertaking a review of their engagement and involving key players in the Northern Ireland STEM Ecosystem to help with this.

A focused event was undertaken with several key outreach organisations with the aim of getting commitment from these organisation to share the My Skills My Life resource and role models and encourage sign up of their own contacts and networks.

Commitment was gained for the group to form a sub-panel of outreach organisations – to work together and to share resource. Participants included:

- Sentinus
- Odyssey Trust (W5)
- NI STEM Ambassador Hub
- Business in the Community
- Smallpeice Trust
- CITB NI
- Manufacturing NI
- Department for the Economy NI

This group will be expanded as necessary.

To Summarise

- A strong and committed Northern Ireland WISE HUB Leadership has been recruited and has the tools and support to move forward. A programme of hub events and activities has been rolled out.
- A strong base of employers and STEM organisations have committed to supporting the hub and have already interacted with hub events and activities.
- Northern Ireland female STEM role models are being added to the My Skills, My Life platform and are to be offered training to deliver the My Skills My Life activities in schools and at outreach events.
- STEM organisations have committed to support the hub and work collaboratively to deliver outreach activities to promote Women in STEM across the region.
- The Northern Ireland WISE Hub has been recognised as an exemplar and other UK hubs are keen to learn from our experiences.
- The WISTEM Secretariat are engaging with similar hubs that are led by employers with the aim to share learnings and best practice.
- The steering group will continue to support the growth and sustainability of the Northern Ireland WISE Hub

Northern Ireland WISE Hub – Events 2020/21

Completed

Event	Topic	Speakers	Guest list
Launch of Hub 7 th Oct 2020	WISE Hub Launch with speakers, break out room discussions and engagement	Rebecca Walsh – Big Motive Emer Murnaghan OBE- Graham Construction, Ruth Blanco - WISE	92 attendees 142 registered
Ten Steps workshop November 2020	Introduction to WISE Ten Steps a step by step guide to developing a diverse and inclusive workforce	WISE	27 attendees 45 registered
My Skills My Life online session to 7 primary schools	Delivering the My Skills My life Programme assessments and meet the role models	3 Northern Ireland Role models	7 schools - 200 pupils and their teachers attended
Senior Leaders breakfast 23rd March 2021	Better Business Senior leaders to discuss how to get more women into STEM post COVID in NI. Speakers and round table discussions	John Healy – AllState Prof. Karen McCloskey –Queens University Belfast	42 attendees
STEM Outreach Focus Group 10 th June 2021	Women in STEM NI Focus group A collaborative approach to STEM outreach	Outreach organisations involved included: Sentinus, Odyssey trust, NI STEM Ambassador Hub, Small Piece Trust, Business in the Community, CITB NI, DfE	8 attendees

Event	Topic	Speakers	Guest list
Meeting the STEM Workforce Challenge 16 th June 2021	A WISE Hub event for members and invitees Communicating the challenge and the prize, the employers toolkits, the MY skills My Life introduction and the 10 Steps overview	Emer Murnaghan Meet 3 inspirational Northern Ireland role models WISE – training and resources Fay Best & Ruth Blanco, WISE	48 attendees

Planned

Future events	Topic	Speakers	Guest list
Introduction to D & I	Getting Started Intro to Diversity – webinar	WISE – Training plus networking	WISE Members to invite colleagues/other companies
Tech hub in NI	Tech careers in Northern Ireland Skills gap and how D&I can help	Northern Ireland speakers	Open to all
Sharing best practice	Everyone needs an Ally Allyship – how to support D&I	Northern Ireland speakers and WISE found speakers UK wide	WISE members and invitees
Skills gap	Innovative Thinking How to fill tech skills gap with women	TBC	WISE members
Retention and progression of women	Hiding in Plain Sight Best practice case studies on retaining/progression of women	TBC	WISE members

