



## Knowledge Exchange Seminar Series (KESS)

*...is a forum that encourages debate on a wide range of research findings, with the overall aim of promoting evidence-based policy and law-making within Northern Ireland*



# Educational innovations supporting women to return to STEM careers

Clem Herman, Elaine Thomas  
and Katie Chicot  
The Open University

# Gendered careers in STEM

*Over two thirds of women with STEM qualifications don't go back into STEM sector work after a break*

(Maximising Returns 2002)



# Gendered careers in STEM

- Traditional cultures and career structures within old professions like engineering and scientific research. New masculine cultures of exclusion in IT sector
- The 'ideal worker' is still considered the norm within many engineering and technology organisations/ professions.
- Gendered organisations (Acker 1990) reproduce gendered patterns of career
- Uninterrupted full-time careers are what get rewarded and leads to 'success'.
- Women's careers are non-linear and perceived as frayed or broken (Sabelis and Schilling 2012, Herman 2015)
- Career breaks and periods of part time work have impact on career progression and employability.



# Returners

- Returners are diverse in age, background and reasons for being out of work
- Maternity isn't the only reason for leaving – often it is a combination of push factors and pull factors (Hewlett et al., 2008)
- The longer the break, the harder it is to get back into STEM work
- Over two thirds of women with STEM qualifications don't go back into work into sector after a break (Maximising Returns 2002)
- Getting back into STEM more difficult to other sectors because of gendered employment norms, and rapid change in skills/knowledge



# Open University interventions

- UK government funded Open University to develop Return to SET course.
- First large scale online course for women returners
- Over 1000 women took the course between 2005 and 2011
- Longitudinal follow up study in 2011/12
- Survey of 167 women 5 years after they had completed the course
- Biographical semi-structured interviews with 23 women
- Identified barriers as well as success strategies in returning

Key barriers to return were identified as:

Gender role  
normativity

Locality and mobility

Structural/Institutional  
barriers



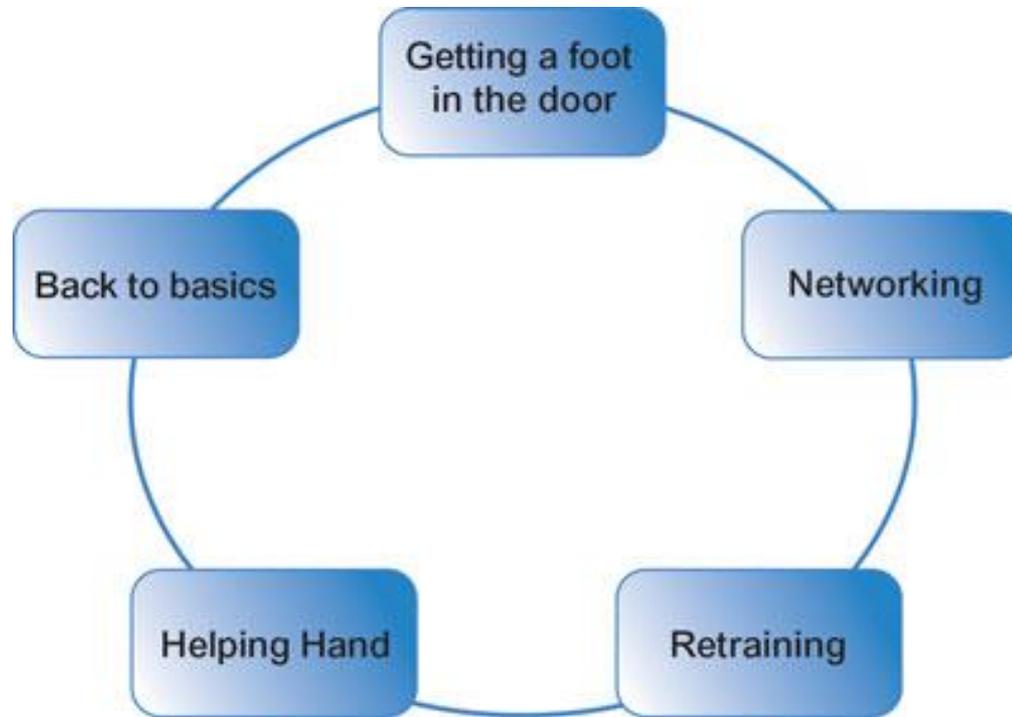
# Return to SET – 5 years on

*The course improved my confidence ... and got me in touch with other women in the same situation. It was great to know that I wasn't alone. I managed to build a good network out of it, and most importantly for me, it helped me put together a successful job application.*

*I have recently accepted a job working as a software engineer. The Open University course was a crucial part in my journey towards getting started in commercial work again. It was so important in building up my confidence and helping me make key decisions about my own skills set and the opportunities available to me locally*

# Getting Back In

Returning after a career break – 5 top strategies



# Getting a foot in the door - Returnships

[Julie Thornton \(Thames Tideway Tunnel\)](#)

For us, the benefits of a returner programme was that you have someone who's done it before. And what you're doing is you're helping them get back into the market. Now they might need a bit more support, but that investment really repays itself incredibly quickly. I mean, within the first week of people being on the project, they were starting to make a difference. They needed a bit of help getting their confidence in some instances. But actually, their contribution from very, very early stages was phenomenal. ... and for us it was a win-win situation. ...it was a great, great success. And we are running another programme. We're literally just out in the market at the moment advertising again.

1:16



# Open Learn

## Badged Open Courses

- These courses are a key part of The Open University's mission 'to promote the educational well-being of the community'.
- Journeys from informal to formal learning.
- Badged Open courses differ from formal Open University courses – no start or finish date, can take however long you like.
- 8 weeks 3 hours a week (24 hours)
- Interactive quizzes each week
- Completers of the course get a Digital Badge



# Returning to STEM

New free course from the OU

## Returning to STEM



Advanced level

Duration 24 hours

Updated 06 Jun 2016

This free badged course, *Returning to STEM*, offers useful skills and solutions to help you get back into a career in science, technology,...

Week 1 – The story so far

Week 2 – Presenting yourself

Week 3 – What's going on in your sector

Week 4 – New ways of working

Week 5 – Work life balance

Week 6 – Getting support

Week 7 – Finding your STEM opportunity

Week 8 – Planning Your Next Steps



# The employer perspective

John Stewart, the HR Director for the energy company SSE

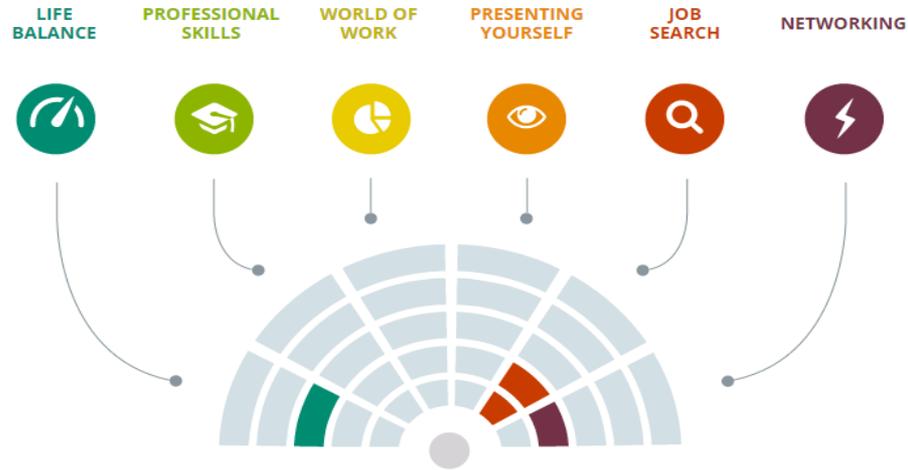
We've got a real business need for looking to encourage people to come back into STEM just now across the energy industry. By 2023, 47 per cent of the workforce can retire, and it really means we need to be really thoughtful about expanding and fishing in every single talent pool that we can get into. And we think there's a reasonably untapped talent pool here, and we need to work hard to be in it and to be seen as an attractive employer within it. Organisations have started to realise that they're going to inadvertently miss out on the talent pool if they don't think a little bit more widely, and they're going to miss out in experience, and there's untapped markets. So I think things have changed, I think, certainly.



# Reboot Your STEM Career

LIFE BALANCE    PROFESSIONAL SKILLS    WORLD OF WORK    PRESENTING YOURSELF    JOB SEARCH    NETWORKING





## Getting started

To start your journey, select one of the six topics above. While there is no set route for getting job-ready, we recommend starting with your areas for development.

Once you've picked your topic, you'll be able to complete one of five action steps designed to guide you through the process of securing employment. For each action step completed, the dashboard will record your progress as you get closer to your goal.

Happy job hunting!

[Action plan](#)

[Peer stories](#)



## Your current work-life balance

Record the time you currently spend each day on each of the following activities.

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Sleep	7	0	0	0	0	0	0	7
Commute	0	0	0	0	0	0	0	0
Work	0	0	0	0	0	0	0	0
Education / study / research	2	0	0	0	0	0	0	2
Care for dependents (child/elder/other)	5	0	0	0	0	0	0	5
Health & fitness	1	0	0	0	0	0	0	1
Leisure & socialising	2	0	0	0	0	0	0	2
Family commitments	1	0	0	0	0	0	0	1
Chores	3	0	0	0	0	0	0	3
Free time	3	24	24	24	24	24	24	147

Save

# Evaluation

## RETURNING TO STEM BOC

- Unique browser visits to course page – 6743
- Enrolled learners – 396
- Badges awarded – 29

## REBOOT YOUR STEM CAREER

- 1000 registered users
- 4000 unique visitors



# Next phase – Scotland Partnership

- With Equate Scotland (the lead agency in Scotland working on equality and diversity in STEM)
- Recruitment of 40 women returners who have interest/skills relevant to the employers recruited

BOC



Wrap around  
activities

- Returnships take place, continued support of women returners
- **Evaluation** and review of stage 1 of project



# STEM in Northern Ireland

- The importance of STEM skills and qualifications are well-recognised in Northern Ireland
- 11% of high level posts in STEM<sup>1</sup>
- Men outnumber women by nearly 3 to 1 in these posts
- More women than men progress to Higher Education<sup>2</sup> (83% female, 71% male)
- Important differences in the subjects studied:
  - 62% STEM enrolments are male
  - 29.8% of all STEM graduates are female
  - 26% students in Computer Science are female
  - 21% students in Engineering and Technology are female

<sup>1</sup> STEM Business Group (2013) Addressing Gender Balance –Reaping the Gender Dividend in STEM

<sup>2</sup>Department of Education: Qualifications & Destinations of Northern Ireland School Leavers 2011/12



# STEM strategy in Northern Ireland

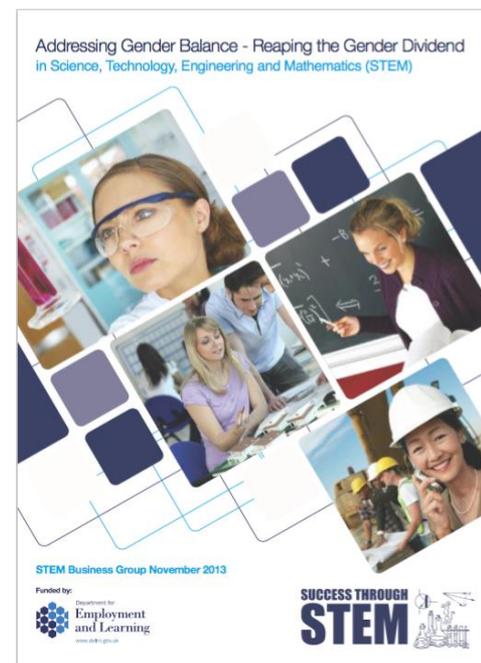
- Success through STEM Strategy<sup>1</sup> –
  - encourage Business to take the lead
  - promote STEM to young people
  - improve flexibility in STEM education provision
- STEM Business Group took forward five recommendations, particularly,
- The recommendation on addressing gender bias in STEM

<sup>1</sup>Department for Employment and Learning (DELNI) (Northern Ireland)  
(2011) *Success through STEM : STEM strategy: in response to the 'Report of the STEM Review' : helping to empower future generations through science, technology, engineering and mathematics to grow a dynamic, innovative economy*



# The potential gender dividend

- STEM Business Group report - Addressing Gender Balance –Reaping the Gender Dividend in STEM<sup>1</sup>
- Set out the business case for promoting gender equality in STEM
  - Tools such as the STEM CEO Charter
  - Good practice guidelines covering pre-employment and employment
  - Case studies from local businesses
- STEM Employers Equality Network (SEEN)



**However, some women in Northern Ireland, as elsewhere, take lengthy career breaks for wide-ranging reasons.**



<sup>1</sup>STEM Business Group (2013) Addressing Gender Balance –Reaping the Gender Dividend in STEM

# Open University collaborations

- The Re-Enter programme - pilot
  - Funded by InterTradeIreland
  - Run by Women Into Technology and Science (WITS)
  - Women returners qualified in STEM
  - Participants drawn from Northern Ireland and Republic of Ireland
- Participants studied *Return to SET* accredited and delivered by the OU
- Re-Enter programme provided local mentoring, support and networking
- ‘Results from the 20 graduates who participated on this programme show that 14 of the 20 women participating have returned to SET careers and a further five are actively seeking employment.’ (Inter-Trade Ireland, 2009) <sup>1</sup>

<sup>1</sup>Inter-trade Ireland (2009) Annual Review of Activities and Annual Accounts  
<http://www.intertradeireland.com/media/3174AnnualReport2010JM15FINAL.pdf>





Northern Ireland  
Assembly



Queen's University  
Belfast



The Open  
University



Ulster  
University

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