Supporting women in STEM in Wales

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with Karen Holford, Cardiff University
THE TASK……

- Chief Scientific Advisor, Wales set up **TASK GROUP**: concerned about under-representation & poor retention of women in STEM careers in Wales
- Profs Karen Holford and Hilary Lappin-Scott Co-Chairs
- **FOCUS?** – Make recommendations based on three major themes
  - Leadership/Promotion
  - Recruitment
  - Retention
WORKING GROUP established as Wales wants to grow its STEM research & innovation base

Critical issues –

Few women in Leadership roles
Lack of gender equity in Education
Retaining women in the STEM workforce
1. Leadership: Women poorly represented - THE DATA?

**Welsh Unis:** 45% academic staff are women; for STEM Professors only 6% are women

**University leaders** – 2 out of 8 are women

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**Proportion of female STEM academics in Wales & UK, 2013/14.** *(Source: HESA)*
No. of Fellows of the Learned Society of Wales – National scholarly academy (2014)

- Fellows (all subjects): 277 (Men: 163, Women: 114)
- Fellows (STEM subjects): 14

Working Group investigate = 40% nominated the following year. INTERVENTIONS WORK
Women in STEM industries hold 10% of management roles (UK)

Women are 13% of board members FTSE 100 companies in STEM sectors

Proportion of male and female managers, business owners and board members compared with the UK workforce.
Examples of effective interventions in Wales

• **50:50 by 2020** initiative, promoted by **Chwarae Teg** to achieve gender balance in leadership in all sectors by 2020 @ch

Getting widespread support, publicises supporters pledges

• Women Adding Value to the Economy (**WAVE**) Created to address gender employment & pay disparities in Welsh labour market

Produced new initiatives around job ‘families’ that improve working conditions for women
1. Leadership: A few Recommendations (draft):

Welsh Government should:

• Encourage STEM-related businesses & education providers to sign up to 50:50 by 2020 campaign
• Publish annual gender audits of membership of their advisory groups
• Encourage all STEM based businesses to sign upto WISE ‘10 steps for sustaining pipeline of female talent in STEM’
• Encourage all large organisations to provide unconscious bias training for their staff
2. STEM Education: Girls under represented in most subjects

Proportion of girls and boys taking certain A level subjects in Wales, 2013-2014
(source: Welsh Government Annual Examination Results)
Proportion of boys & girls taking A levels in ICT and computing in Wales and UK (2013)
2. STEM Education: A few Recommendations (draft)

Welsh Government should:

• Encourage that teachers take online unconscious bias training & train in gender-inclusive teaching methods

• **Ensure gender awareness training is a requirement for teacher accreditation**

• Ensure career information & promotional material are free from biases & include role models for girls

• **Ensure Welsh universities work with business communities & create ‘Women in STEM’ Forum to promote cross-sector learning & best practice dissemination**
3. The STEM Workforce – why more women needed?

- Need more highly trained/skilled staff for STEM related businesses, this will in turn likely boost the economy of Wales.
- BUT - many women trained in these areas leave STEM professions ‘the leaky pipeline’
2015 UK Engineering Report - more women in STEM areas would add = £2B PA to UK economy

We need to double the number of engineering graduates or see a 50% increase in STEM graduates who will enter the profession.
Welsh data: Few women in ICT, energy, materials/manufacturing or construction businesses

No. men & women in STEM key sectors, Wales 2014
(Source: Priority Sector Statistics 2015)
Complex position for the leaky pipeline

- Many organisations are taking positive action to ensure women return after a career break
- Promote strong role models & mentoring for women to stay in STEM based sectors
- **Athena SWAN Charter** across the UK is bringing about change…. State the data then set up an action plan to bring about change.

*Increased % women Professors for first time in years Swansea University!*
We are the UK's leading organisation dedicated to realising the potential of scientists and engineers returning to research following a career break.

UK wide scheme to support returning to STEM work after career break.
3. STEM workforce: A few Recommendations (draft)

- All Universities must sign up to the **Athena SWAN** Charter & pursue at least Bronze. Link Government funding to achievement of awards.
- Universities should take account of **parental leave** when appointing academic staff.
- Welsh Gov. should work with ‘**anchor companies**’ to ensure employers adopt best practices to retain women after career breaks.
- Build on **WAVE** project with advice, support to employers on equality & diversity issues.
Working to bring about change in our organisations – practical steps..

Variety of ways forward ……

Use **Athena SWAN Charter** to drive change - & accreditation

External speakers as **role models** to inspire.. ‘who is at the front of the room?’

Active **International Women’s Day campaigns**

Establish University-wide Group – to support women - **MARY WILLIAMS GROUP**

**Soapbox Science** comes to Wales……
SOAPBOX SCIENCE  ‘Challenging stereotypes, women are scientists too’

• Female STEM researchers
• On soapbox on their research!

Public engagement of science highlighting research
Chosen as one of 12 to speak July 2013.
Brought to Wales 2014 and 2015..... ONWARDS
International Women’s Day 2015

• Inspiring Women
• Keynote speech by Dr Suzy Lishman
• Project My Girl fundraising event
• ‘Utilising all our Talent’ with Prof. Laura McAllister
Celebrate EQUALITY & DIVERSITY – SWANSEA UNIVERSITY

MARY WILLIAMS – 1st female Professor in the UK
Mary Williams Prize launched - recognize colleagues who go above and beyond call of duty to support & encourage greater diversity and support careers
Vice Chancellor announcing & presenting winner during the Graduation Ceremony

HIGHLIGHTS IMPORTANCE OF E & D
STILL Challenging – yet to overcome…..

• How do we keep females e.g. in STEM areas and stop the ‘leaky pipeline’?
• How do we get more female applications for senior posts?
• How can we move towards greater gender balance in all we do?
• How do we ‘use all our talent’?
• ‘Focus on ‘Who is at the front of the room’?
• How do we convince that leadership doesn’t look like a black suit/white shirt & coloured tie? Don’t appoint ‘in my own likeness’