

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**

STEM: Recruit, Retain and Promote Talented Women for a Successful Nation – draft Report

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

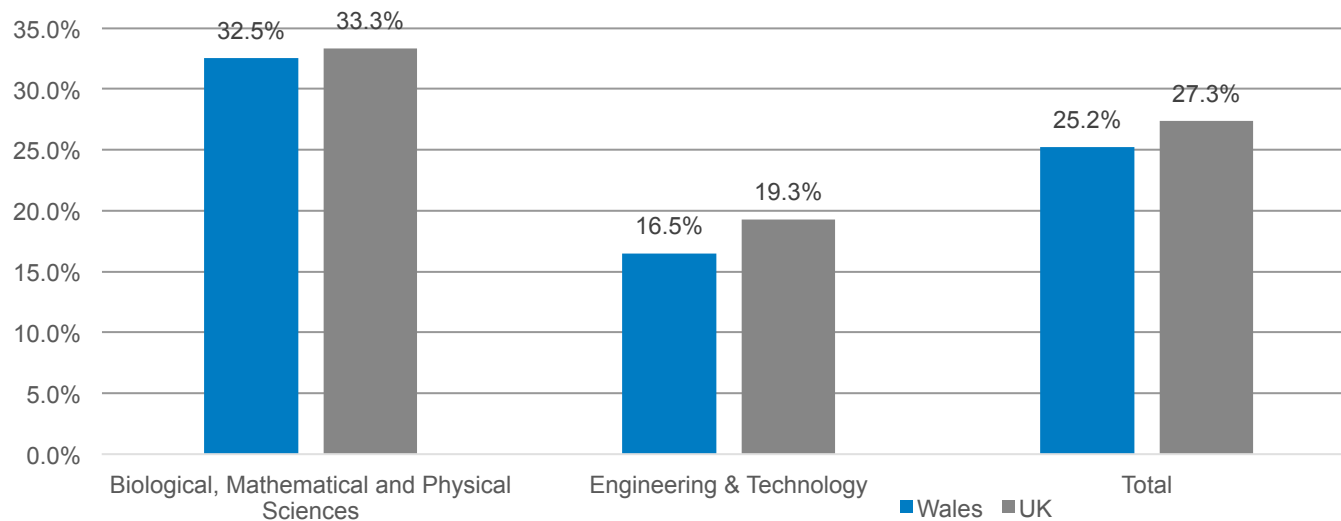
Retaining women in the STEM workforce



1. Leadership: Women poorly represented - THE DATA?

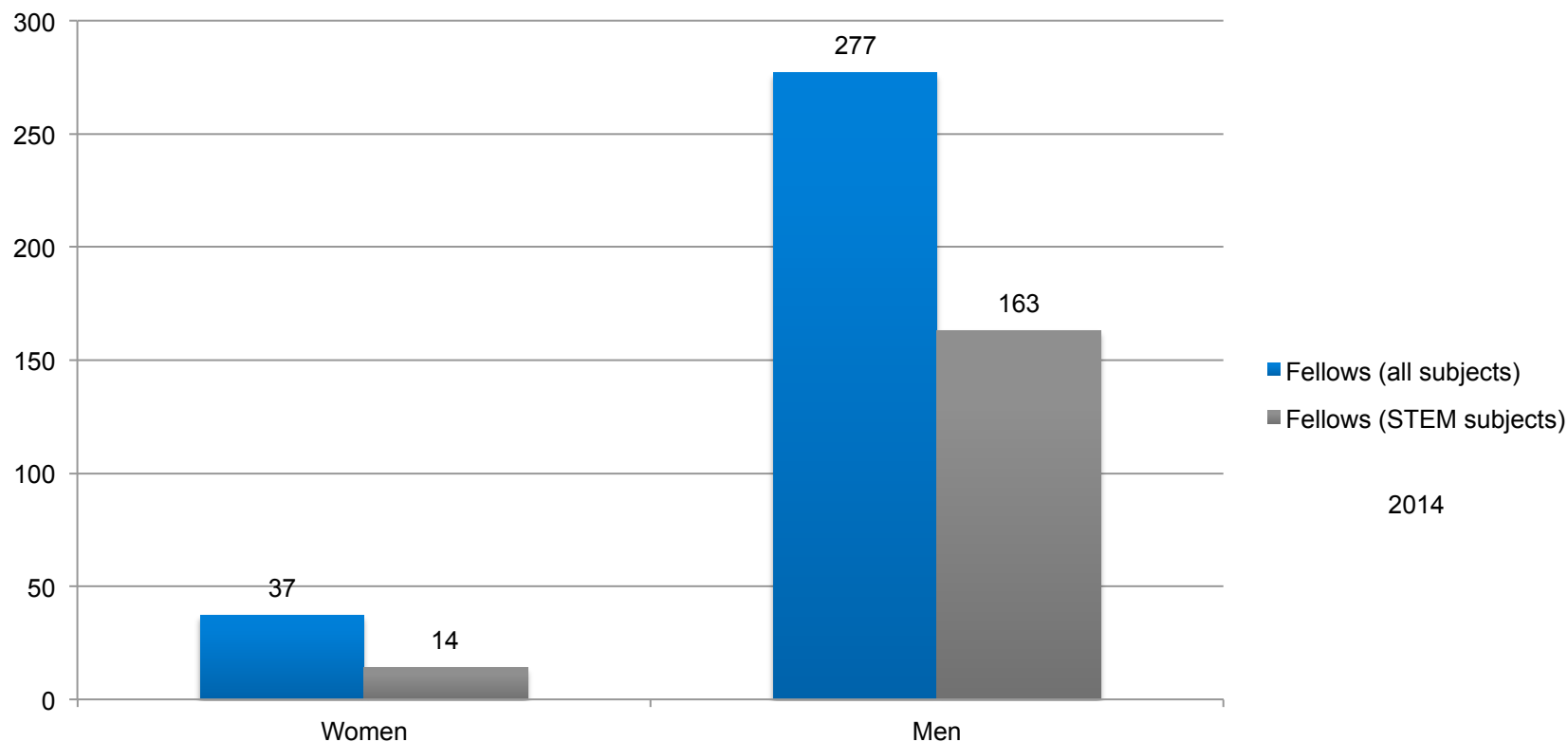
Welsh Unis: 45% academic staff are women; for STEM Professors only 6% are women

University leaders – 2 out of 8 are women



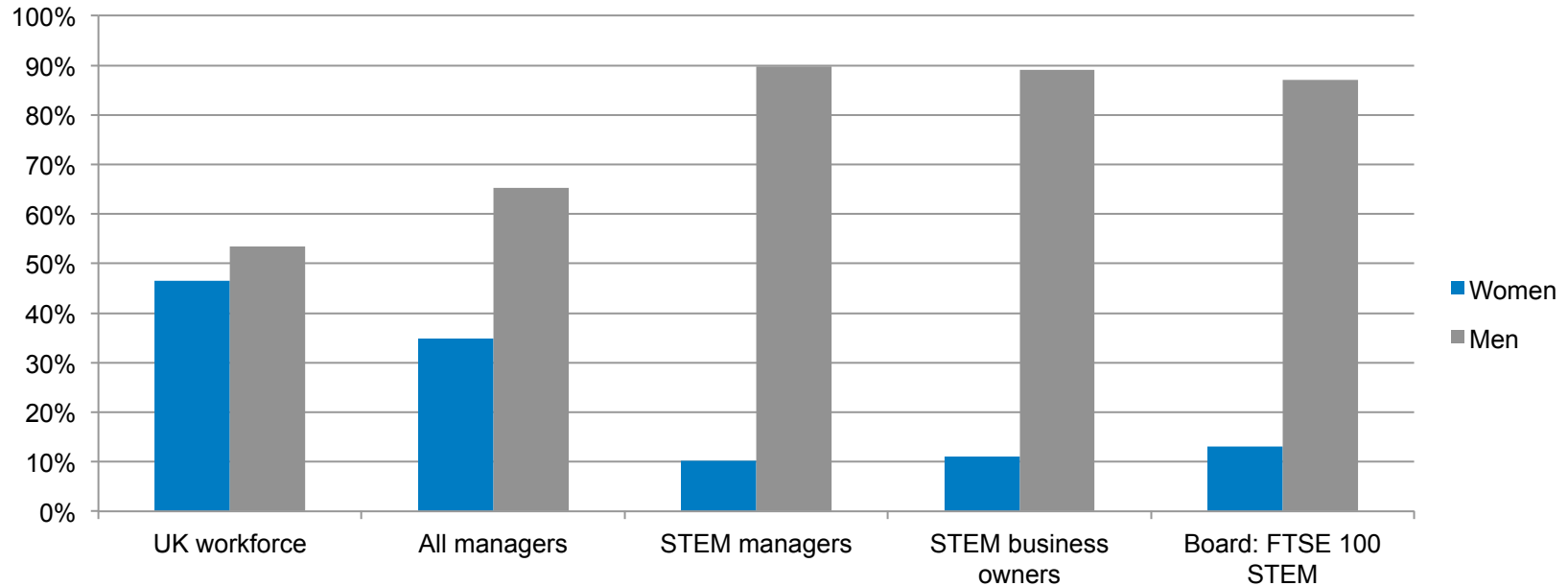
Proportion of female STEM academics in Wales & UK, 2013/14. (Source: HESA)

No. of Fellows of the Learned Society of Wales – National scholarly academy (2014)



Working Group investigate = 40% nominated the following year. **INTERVENTIONS WORK**

Women in STEM industries hold 10% of management roles (UK)



: Proportion of male and female managers, business owners and board members compared with the UK workforce

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

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

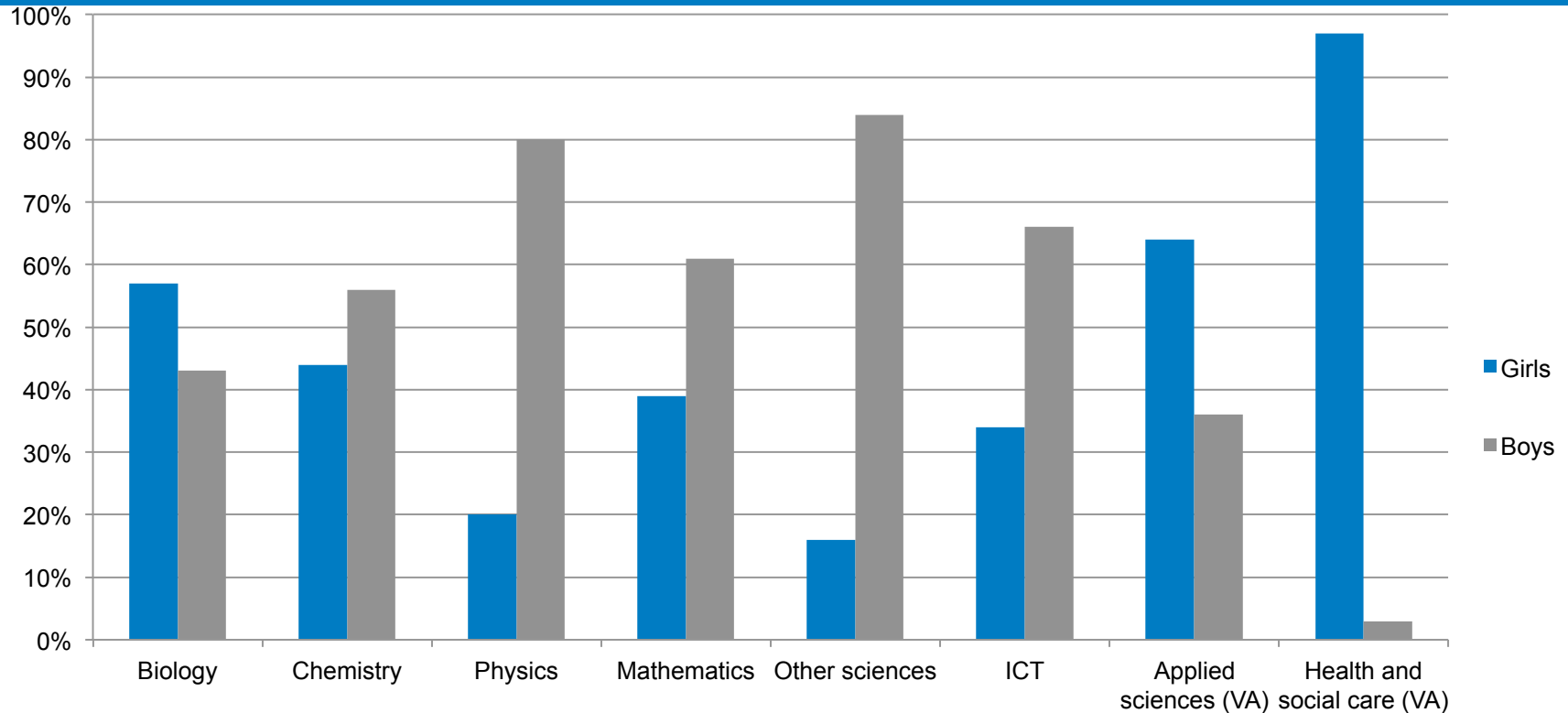


1. Leadership: A few Recommendations (draft):

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

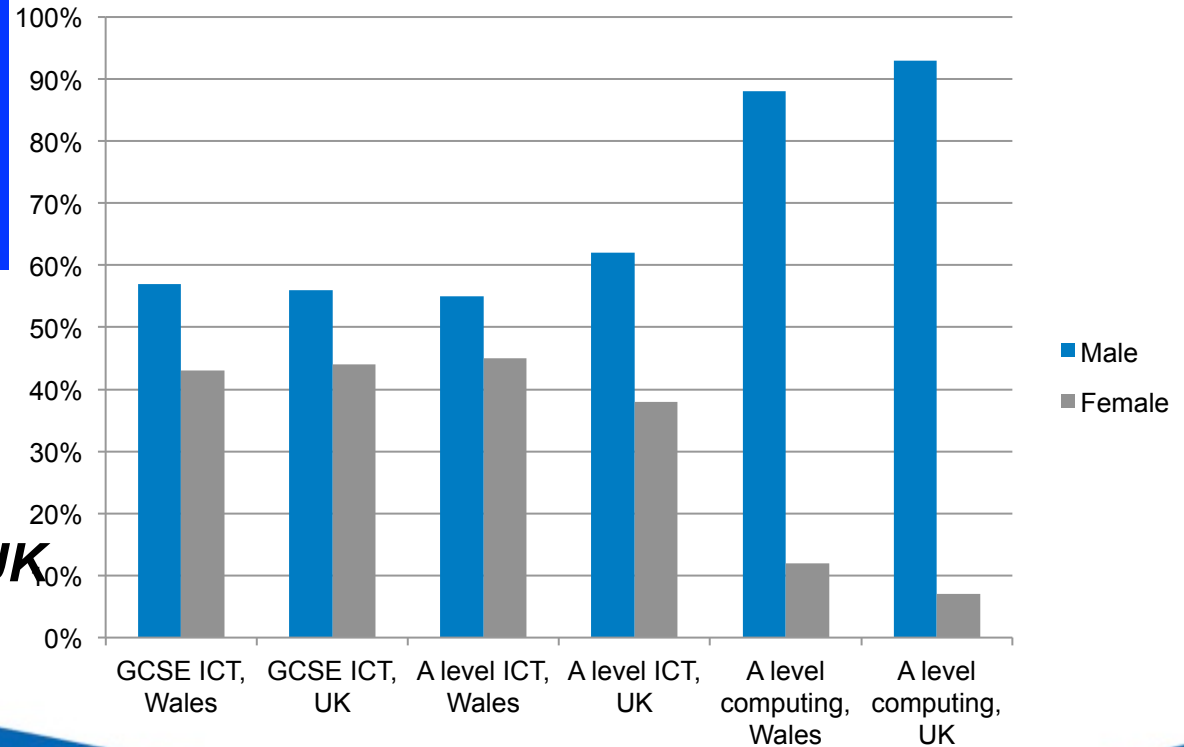


: Proportion of girls and boys taking certain A level subjects in Wales, 2013-2014
(source: Welsh Government Annual Examination Results)

Few girls studying Physics or Computing

Girls and boys achieve almost equal A*-C grades in physics at GCSE level but girls only constitute one fifth of A level physics students.

2015



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

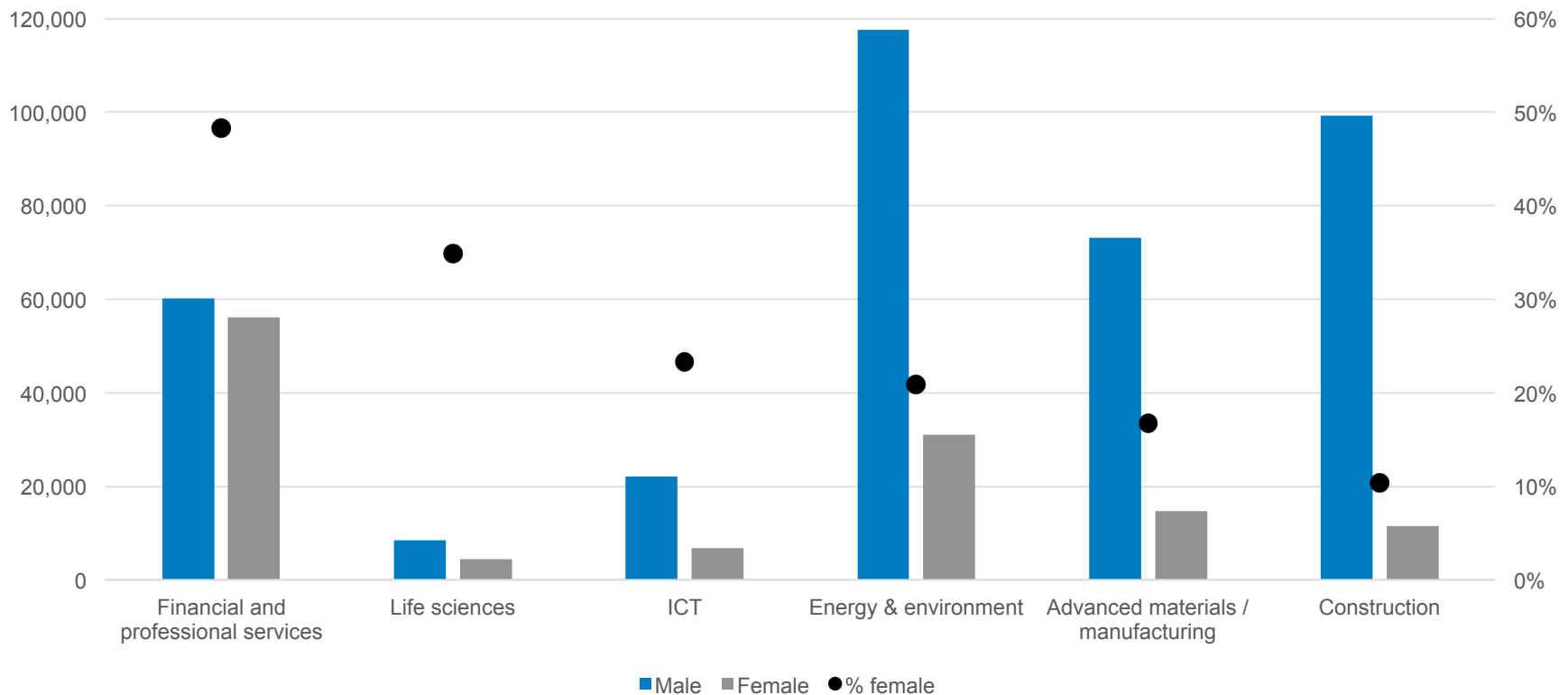
3. The STEM Workforce – why more women needed?

- 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!



RETAINING TALENTED WOMEN ..

Daphne
Jackson
Trust



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



SWANSEA UNIVERSITY
PRIFYSGOL ABERTAWE

www.swansea.ac.uk

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



Dr. Mary Williams.

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’