

## Section 1: *In brief*

- 1. Do you believe progress has been made towards achieving gender equality in the STEM workplace in Scotland since 2012?**
  - Yes, in part. But there is much more to do.
  
- 2. If yes, what action(s) do you believe have had the greatest impact on improving gender equality in STEM in Scotland? (List maximum of 3)**
  - The prominence of gender equality in government policy and communication.
  - Sectoral initiatives and accreditation schemes, such as Athena SWAN in the higher education sector, which mobilise and monitor detailed actions.
  - The active participation and sponsorship of learned scientific societies, as exemplified by the Institute of Physics' *Juno Champion* scheme.
  
- 3. Where you do not believe progress has been made, or could be improved upon, what do you believe have been the key limiting factors? (List maximum of 3).**
  - Cultural norms and values that are slow to shift, which affect how girls and young women view participation in some STEM fields, such as Computer Science.
  - Constrained pay and resourcing environments in many sectors, which have affected progress in addressing the gender pay gap and delivering family friendly policies.
  - A “tick-box” approach to monitoring gender equality initiatives that has risked diverting effort away from the necessary culture change across organisations.
  
- 4. Which of the recommendations made in the 2012 *Tapping All Our Talents* report do you believe should be prioritised going forward? (List maximum of 3)**
  - For the Scottish Government: tackle the gender pay gap in the public sector and through innovative approaches to procurement.
  - For business and industry: introduce quality part-time employment and promote culture change to enhance diversity.
  - For universities and research institutes: commitment to equal pay, developing progressive policies, championing gender equality and negating the impact of maternity/paternity leave and caring responsibilities on long term careers.
  
- 5. What further recommendations (if any) would you make to policy-makers, educators or employers to tackle gender inequality in STEM in Scotland? (List maximum of 3).**
  - An integrated, collaborative multi-sector strategy for culture change, which can support, fund and leverage widespread HEI outreach and engagement activity in this area.

## Section 2: *In detail*

### *Women in STEM in Scotland 2018*

- 6. What lessons do you believe have been learned from initiatives undertaken since 2012 to tackle gender inequality in the STEM workforce across the public, academic and/or industry sectors?**
  - Widespread and growing participation in accreditation and recognition schemes which shape and direct good practice and progressive policies, and act as catalysts for broader cultural change. Examples include Athena SWAN accreditation and the Carer Positive award.
  
- 7. In 2018's economic, political and social context, what do you consider to be the key influencers (positive and negative) on gender equality in STEM in Scotland?**
  - On the positive side, the leadership position taken by the Scottish Government and institutional participation in accreditation and recognition schemes (already mentioned above) are key.
  - On the negative side, constrained resource environments have affected the speed with which the gender pay gap is being tackled and organisations' willingness to invest in family friendly policies that promote equality. Equally significant is the lack of an integrated, multi-sectoral strategy for cultural change which can affect the underlying values and norms which impede participation in some STEM fields.
  
- 8. To what extent do you believe that the issue of gender inequality in STEM is being recognised as a priority and to what extent do you believe that rhetoric is being met with action?**
  - The issue is clearly being recognised and prioritised in the Education sector. If rhetoric is ahead of action at this time, that is due to a failure to recognise the costs, duration of engagement and multi-sectoral approach needed to bring about the necessary underlying cultural and structural changes.

### *Education*

- 9. What do you believe should be done to encourage more girls and young women to engage with STEM subjects in early years, primary and secondary education?**
  - Outreach work from HEIs is clearly important and is already widespread. The University of St Andrews has long recognised the importance of fostering partnerships between secondary school and HEIs, for example through our Teachers Together conference, ensuring that relevant, accurate and timely guidance is given to pupils preparing for university study.
  - But this cannot reach its full effect and influence against the headwinds of strong countervailing cultural norms and values. There is, therefore, a need for an integrated, collaborative multi-sector strategy for culture change, which can support, fund and leverage widespread HEI outreach and engagement activity in this area.

**10. What innovative or impactful practice do you know of or believe should be taking place in universities and colleges to tackle issues of gender disparities in STEM subjects?**

**What do you think can be done to embed STEM gender equality thinking across universities and colleges?**

- The range of activities carried out under the banner of Athena SWAN includes a wide range of innovative and impactful practice, in areas such as:
  - inclusive recruitment and promotion processes (including, at St Andrews, a ban on single-gender shortlists for academic and professional staff appointments, and a requirement for all staff involved in recruitment processes to undergo unconscious bias training);
  - mentoring and leadership programmes (for example at St Andrews, the Elizabeth Garrett mentoring programme); and
  - thoughtful attention to family friendly policies. At St Andrews this has led to Carer Positive recognition; and has also included initiatives such as a core hours policy, the opening of the University's own purpose-built nursery, and the provision of childcare opportunities on campus during school holidays.
- Much progress has been made to embed STEM gender equality thinking across universities and colleges – the challenge now is to translate that thinking into practice, to enable enactment - not least in relation to research culture. For this reason, at St Andrews we have initiated a gender, diversity and inclusion research fund. This has so far stimulated 14 projects across the sciences, social sciences and humanities – and we will be holding our first interdisciplinary gender, diversity and inclusion research conference this May.

*Cultural Change*

**11. In what ways do you believe industry can lead by example to tackle inequality within workplace culture?**

- By sharing and publicising good practice initiatives
- By giving visible senior level commitment to gender diversity, for example through tackling gender balance on company boards.
- By developing and/or enhancing clear and robust policies and procedures that reflect gender equality best practice.
- By supporting part time and flexible work arrangements that allow meaningful career prospects for those with family and carer responsibilities
- By implementing 'core hours' policies to prevent extension of the working day, which can be exclusive.

**12. What do you believe are the most effective ways to challenge and change deep-rooted attitudes and institutional culture in order to improve gender equality in STEM?**

Challenging and changing deep rooted attitudes and institutional cultures will be an extended process requiring significant investment. We would like to highlight maintenance, extension, integration, and giving visibility as key aspects of this process:

- *Maintenance.* The clear focus and leadership of the Scottish Government in this area is welcome and should be maintained. Similarly, sectoral initiatives (such as Athena SWAN in the HEI community) are mobilising action and

should be maintained, albeit there is much scope to improve and simplify the Athena SWAN process.

- *Extension.* The Scottish Government has an opportunity to work collaboratively with the HEI sector to collate and translate good practices for application in other sectors. We do not presume that good practice is absent in other sectors, but the focus on action in the HEI sector has been sustained and intensive and should be leveraged.
- *Integration.* Pockets of good practice will exist across all sectors, but the slow pace of change indicates that there are still social contexts where the message of equality is too dilute (in relation to other messages from a variety of social and cultural institutions) to have an appreciable impact on culture.
- *Giving Visibility.* Policies and statements of organisational commitment to gender equality in STEM can be made more meaningful and real through regular events and opportunities to showcase achievements and challenge cultural norms. Since 2016, the University of St Andrews has run more than 30 gender-diversity related events.

<b>Showcase of University of St Andrews Gender diversity related events (2016-2018)</b>	
08 May 2018	Gender, Diversity and Inclusion Research Conference – celebrating the first year of the GDI Research Fund, with external speakers such as Prof Iyiola Solanke on ‘Where are the black female professors in the UK?’
20 Apr 2018	Sexism at Work Event – presented by the Early Career Women Network with local politicians and academics
13 Apr 2018	The Women Who Shaped St Andrews - exclusive screening documentary, discovering the legacies of the powerful female benefactors who influenced everything from natural history research to student accommodation.
12 Apr 2018	Q&A session with HR and policy workers – presented by the Early Career Women Network, discussing maternity leave and family friendly policies
07 Apr 2018	St Andrews Pride (staff/student LGBTIQ+ event)
07 Mar 2018	Inspiring Women – International Women’s Month event, St Andrews Business Club and keynote speaker Prof Sally Mapstone, Principal
05 Feb 2018	<b>‘Academic Women Here! launch event on being a female academic at the University - launch event led by the Principal</b>
15 Dec 2017	<b>LGBT Youth Scotland presentation of the LGBT Charter to the University</b>
30 Nov 2017	Early Career Women Network launch event
20 Nov 2017	<b>Transgender Day of Remembrance</b>
15 Nov 2017	Gender Fluidity in the Ancient World Conference
10 Nov 2017	<b>Professor Dame Linda Partridge: Ageing Healthily</b>
10 Nov 2017	<b>Interconnect: Student Networking for Women in STEM</b>
28 Oct 2017	<b>Working Families Scottish Employers Workshop: University shared good practice on family friendly and flexible working policies at external event</b>
10 Oct 2017	<b>Launch of Elizabeth Garrett Mentoring Programme</b>
28 Sep 2017	<b>Queer Question Time: Student and external LGBT+ panel</b>
Aug 2017	<b>Shared Care Scotland: Acknowledging the unsung heroes who provide care for their loved ones 24 hours a day by participating in a national scheme providing free holiday accommodation for carers.</b>

20 Jun 2017	Carer Positive Employer Award renewed for the University
10 May 2017	<b>Women and the academic career: Examining the obstacles for women in the academic career</b>
08 Mar 2017	International Women's Day: Annual lecture in the History of Women, Gender and Sexuality, Art Feminism Wikipedia Edit-A-Thon, Sister sit out
11 Feb 2017	St Andrews Pride (staff/student LGBTIQ+ event)
11 Feb 2017	UN International Day of Women and Girls in Science event
06 Feb 2017	Gender & Equalities Research Event
19 Jan 2017	National Conference on Equal Opportunities in Education: attended by Scottish universities, colleges, schools and agencies, with talks and presentations by the Deputy First Minister, Scottish Funding Council, ECU, and then the Principal, Professor Sally Mapstone: <i>'Education is transformative; it takes you somewhere new, intellectually, culturally, physically, and professionally, and it can go on doing that throughout your life.'</i>
11 Dec 2016	Breaking the Glass Ceiling, Ruth Hunt (CEO of Stonewall)
18 Nov 2016	Athena SWAN: Life, Death and a Career in Academic Medicine
21 Oct 2016	Carer Positive Employer award presented to the University
30 Sep 2016	The Science of Sex Differences
28 Sep 2016	Inaugural lecture, Prof Ruth Woodfield: Excellence and Gender
26 Sep 2016	How different religions look at sex and sexuality?
02 Jun 2016	Gender and Prestige in Academic Work
30 Mar 2016	Getting More Woman into Tech Careers

### **13. How do you suggest culture change can be measured in a meaningful way?**

Measuring cultural characteristics is a contentious issue, and change will only be effected in the long term. However, we suggest that the following measures may be explored and considered for development:

- Periodic attitudinal surveys of children and young people at key decision points in relation to educational and employment choices.
- Periodic workplace surveys (building on the experience of Athena SWAN processes in the HEI sector) that show how gender equality is experienced in the context of organizational cultures.
- Media reviews and surveys to assess the share of voice and image given to cultural representation that reflects gender equality.
- Collecting feedback from networks and focus groups established to develop and promote the equality agenda.