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Editorial

GST is proud to be an open access journal and despite funding cuts we are determined to stick by our founding principle which is to ensure that quality up to date research about gender in and of science and technology is available not only to the academic community but also to practitioners, industry, policy makers and others who are interested and want to make a difference in this field. Debate about open access publishing has been hotting up in recent weeks with the so called 'academic spring' being spurred on by the Wellcome Trust who have stipulated that all their funded research should be published in open access journals. In the UK, Cambridge academic Tim Gowers delivered a scathing attack on the behaviour of one academic publishing house triggering a buzz of blogging activity on the subject. The issues are clearly explained by my former colleague John Naughton in his weekly column in the Observer last Sunday. In the ensuing debates and comments, many have raised the issue of the hidden costs of academic publishing including the voluntary time given by peer reviewers, editors and board members whether to open access or commercial journals. They are right, we could not exist without the generous time and support of everyone involved in GST since its inception. I'd like to take the opportunity to thank everyone for their tireless efforts and continued belief in our vision.

Schintler and McNeely's perspectives piece *Gendered Science in the 21st Century: Productivity Puzzle 2.0?* explores another aspect of academic publishing, namely productivity and in particular the persistence of gender disparities in science and technology publication rates. They argue for a rethinking of traditional academic measures of output and success, and advocate adopting a 'multifaceted dynamic, highly networked, and interactive process' instead which might give women's contributions more visibility and status.

Yet, images of women scientists online can often replicate clichés and stereotypes found in more traditional media, as Moreau and Mendick discuss in their paper *Discourses of Women Scientists in Online Media*. In a study of 16 science focused websites they conclude that the 'gender regimes' of these online SET spaces have failed to generate a more gender equal view of scientists.

Our other perspectives article in this issue, *Developing women scientists, engineers and technologists – and helping them stay!,* is by the British MP Meg Munn. Meg has been a political advocate for gender equality in SET and a supporter of initiatives in the UK in recent years and reflects on the changes that have happened since the advent of 'austerity' cuts by our current government. It would be interesting to see further research about the specific impact of austerity and cuts for women in SET. There is increasing evidence that UK government spending cuts since 2010 are having a disproportionate impact on women. A recent report by the Fawcett Society estimates that 70% of savings from UK tax and benefit cuts will come from women's pockets. Cuts to public and voluntary sector services mean women taking on more care roles, women have been the major losers of jobs due to public sector cuts, and moreover the reduction in working tax credits and other benefits means that women (who form the majority of low paid workers) are losing out financially (Fawcett 2012). But does all of this affect women scientists and engineers in specific ways? The news is not all bleak however. Last month the Scottish Parliament announced further funding for the Scottish Resource Centre, recognising the importance of women in SET to the Scottish economy.

Statistics and figures about women in SET are frequently cited especially in policy circles, but often (of necessity) simplified. In her paper *Science and Gender Indicators: A Critical Review*, Obdulia Torres Gonzalez reviews two of the most frequently used science and gender indicators: the glass ceiling index and the dissimilarity index (a measure of horizontal segregation in career choice between young men and women). As Gonzalez points out, these indicators are useful tools that allow us to make a diagnosis from which to then take suitable political measures, but they are based on a number of assumptions that are not always transparent, and so are best used with caution and in particular contexts.

One of the most often used diagrams to illustrate the gender inequality prevalent in academic STEM careers is the classic scissor diagram which Gonzalez refers to in the appendix to her paper. The low numbers of women at professorial level is often cited as evidence of the so called 'leaky pipeline' especially in STEM. Two papers in this issue provide detailed analyses of individual institutions about promotion and career progression of STEM academic women. Britton et al., in their paper *Surveying the Campus Climate for Faculty*, compare the employment experiences of STEM and non-STEM faculty members at one US university and find that STEM women were less satisfied than their counterparts in non-STEM disciplines. The implication is that this could lead to women leaving or failing to gain promotion. This career progression is explored by O'Connor et al., at another US university in their paper *Becoming a Professor: an Analysis of Gender on the Promotion of Faculty from Associate to Full Professor.* Looking at figures for promotion to full professor using a multivariate analysis they find that gender alone does not inhibit women's promotion prospects but that academic discipline (STEM or non-STEM), and level of qualification are significant factors. Once again this reminds us of the need to look carefully at data when implementing programmes and initiatives to support gender equality in STEM.

Emily Ngubia Kuria in her paper entitled *Experimenting with Gender: How Science Constructs Difference* takes an interdisciplinary approach, unpacking what underlying assumptions are made in the field of neuroscience about gender research. The paper explores the how gender/sex differences are constructed, by integrating perspectives from three disciplines - neuroscience, science studies and gender studies. It sheds some light on what happens in a neuroscience laboratory when experimenting on gender/sex difference, especially the process through which experimental systems enable the appearance of gender difference and validate it within the heteronormative norm.

Gender Differences in the Development of Numerical Skills, a paper by Krinzinger et al., is concerned with gender differences in mathematics ability using a study of primary school children in four European countries. They found that boys did perform better at several tasks and speculate that this might be linked to different visual – spatial skills. However they could not conclude whether these were biological or socio-cultural in origin. Interestingly there were no differences between the four countries in the study.

Finally, our two book reviews are both about women's bodies and technology. Andrea Quinlan's review of *Global Bio Politics of the IUD* by Chikako Takeshita takes us through a fascinating study of a 'politically versatile technology' drawing together historical and contemporary debates. Similarly *Gendered Circuits: Bodies and Identities in a Technological Age* by Eve Shapiro reviewed by Beatriz Revelles Benavente, draws on case studies that show how technologies are reshaping gendered bodies and identities and their meanings.

Clem Herman, on behalf of the editorial executive: Helen Donelan, Barbara Hodgson, Gill Kirkup, Elizabeth Whitelegg