



International Journal of Gender, Science and Technology

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Editorial

Welcome to the first issue of the International Journal of Gender, Science and Technology. This is an exciting and bold new venture, aimed at bringing together the wide and diverse community of people and organisations who have an interest in gender, science and technology in their broadest sense. While it becomes cumbersome to add all possible permutations within one title, we intend these terms to be widely inclusive to encompass applied areas of science and technology (such as engineering and the built environment, including construction), as well as issues to do with the scientific and technical cultures and representations.

We know that existing systems are still failing to support women in achieving their potential in science, engineering and technical professions. We also know that there are specific points at which this is exacerbated, such as failure to attract girls into technical subjects in schools, increased attrition after graduation, the after effects of maternity leave and career breaks, and in reaching leadership positions at senior level. We welcome new insights into these persistent problems that investigate and explore how gender operates at all levels within cultures of science, engineering and technology - from primary schools to universities, from technicians to CEOs.

However this journal is not limited to issues about education and employment, nor indeed about women. In fact we see the term 'science and technology' as encompassing a broad constituency. We seek to further knowledge and understanding about gender within the discourses and cultures of science and technology and to explore theoretical perspectives and research about how gender operates within science and technology including issues about men and masculinities.

The subject area for this journal is not new, but we envisage the audience will be. Projects and initiatives have come and gone over the past 30 years, and research in this field has been rich and highly theorised over these decades. There is published work on gender, science and technology in a wide range of other journals, and books. However until now this has been very dispersed and only really accessible to academics and researchers, as many of the journals and books where this kind of work is published are only available to subscribers within universities. We have deliberately created this journal as an online publication because we want as many people to have



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access to it as possible. The support of UK Resource Centre for Women in SET (UKRC) and the Open University (OU), and making use of open source software, has meant that we can make the journal freely available to anyone with an internet connection. This is the first attempt that we are aware of, to bring together the work of practitioners and researchers into one publication, with the aim of fostering communication and learning between these two often disparate groups.

Our interest originates from the involvement of members of the editorial team over many years in working towards equality for women in SET. The idea for this journal came about during a partnership project between the OU and the UKRC, which had funded a number of research projects in this area. This research was showcased and disseminated at the ['Moving Gender and SET Forward'](#) conference in November 2007, which brought together a network of researchers and practitioners in this field. This conference was intentionally interdisciplinary in order to engage both academic participants and practitioners who were working to support women in SET, as well as to reach out to professional bodies and employers who it was recognised would be key to any sustainable change.

Our Editorial Board reflects this diversity of interests - with representatives from industry as well as academia, and professional bodies and practitioners. The Perspectives article in this issue (p.145) draws on a set of conversations with Board members and others illustrating a range of views on key Gender and SET issues that we hope will resonate with different groups of readers from industry, academia, policy and practitioner perspectives.

It is vital that we document good practice and share learning from initiatives and projects; learning that often disappears when funding ends or when key players leave an organisation. To prevent re-inventing the wheel again in 20 years time, it is important that our knowledge and expertise is shared and acted upon. Our case study section will provide a space for such sharing.

In this first issue most of our research articles and case studies have a particular focus on the education sector, but we are keen to stress that future issues should include case studies, perspectives, strategies and policies from industry and reflect the wide range of initiatives that are taking place across the globe

In this first issue our concerns about organisational culture change are represented by two papers (one case study and one research paper) that highlight programmes of intervention to tackle some of the entrenched cultures within SET organisations. In their case study of the PROJECT JUNO initiative, Main et al describe how the Institute of Physics (IoP) has been working with British universities to affect culture change, initially through a site visit scheme that has now become formalised into an annual award the first of which were made in September 2009. The IoP approach has become increasingly attractive both within higher education and in industry, and the

results are optimistic. A rather different approach to the same issues of retention and progression of women in SET academic life is described by Nemiro et al who explore a specific institutional initiative within US universities aimed at transforming the recruitment and development of STEM staff. Rather than seeking external intervention and evaluation, this approach is deeply reflective and draws on appreciative inquiry as a methodology for identifying and building on what works – ‘the overriding philosophy behind this approach is to build on what organizations (in this case, departments) are already doing well, rather than trying to pinpoint problem areas and fix what is not working’ (Nemiro et al, 2009, p.11)

From retention of academic staff we move to two papers and a case study that examine more closely the recruitment and retention of female students in the SET disciplines, specifically in within engineering and computer science. Riley and Claris look at the engineering classroom from the pedagogical perspective, linking questions of retention (or persistence) to analysing how inherent hierarchies can be successfully challenged within a traditional engineering curriculum. Drawing on theories of resistance and liberative pedagogies, the paper examines fundamental issues about the teaching of engineering and how this can fail to challenge underlying inequalities and norms. Hartman and Hartman’s paper looks in more depth at another important phenomenon – the gendering of different disciplines within SET, specifically different types of engineering. Interestingly Hartman and Hartman’s detailed survey analysis reveals greater levels of confidence and career commitment among women when they are in more male dominated disciplines such as mechanical engineering rather than for example among chemical engineers, reminding us that we need to be wary of simplistic solutions based solely on increasing recruitment numbers. One important strategy that has been used successfully both in education and industry is mentoring. In their case study, Boldyreff and Massey explore the use of mentoring as a strategy for increasing retention of female students in computer science, and importantly show how such an initiative can act as a springboard for wider organisational change.

School education has been recognised as an important turning point in many girls’ experiences of engaging and committing to a scientific or technical career. Elstad and Turmo’s paper looks at the impact of teachers’ sex on young people’s engagement, motivation and achievement in science classrooms in Norway. This extremely complex issue demands close attention and this paper brings this complexity to the fore and describes the nuanced aspects of the teacher/student relationship from a gender perspective.

New media and Web technologies offer exciting possibilities as well as potentially contributing to the further exclusion of women. These themes are explored by Carstensen in her paper on Web 2.0 and gender, and Westcott’s ‘Growing up with Games’ which reviews the revised edition of ‘Beyond Mortal Kombat’.

We welcome such a wide international range of authors for this our first issue. Dorothy Gordon's review of African Women in ICTs sets an important precedent, in that considerations of gender, science and technology must take a global perspective

In our book review section we are pleased to have several important new contributions reviewed. Hilary Rose's review of Sandra Harding's latest book and Alison Adam's review of Londa Schiebinger's new volume provide us with excellent overviews to new publications by two of the leading pioneers in this field.

In future issues we would welcome contributions about current developments in industry, how issues of work life balance are being addressed; about the impact of the recession on women's employment and career progression, and about what is happening in specific sectors such as construction and the built environment.

Please feedback your opinions via our web response form using the journal feedback facility. It is important to us to hear your views about the ideas raised in the journal, and we hope that your feedback will initiate constructive debate and advance ideas that will help to strengthen and build our community.

*Clem Herman, on behalf of the editorial team: Jennifer Carr, Elizabeth Whitelegg, Helen Donelan, Barbara Hodgson and Gill Kirkup.
The Open University.*