International Journal of Gender, Science and Technology
http://genderandset.open.ac.uk

# Evolution of the Gender & STEM Network

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**KEYWORDS**

Gender & STEM Network; selected conference papers; special issue; access and participation; engagement and learning; barriers and affordances

# Evolution of the Gender & STEM Network

## BACKGROUND AND REVIEW

From the late 1970s, the underrepresentation of girls and women in STEM fields in many countries has been considered problematic, and has hence been the subject of research, policies, and intervention programmes (see OECD, 2006; World Economic Forum, 2014). Unfortunately, it is still the case that fewer girls and women are retained in STEM pathways through high school and university, and on into STEM career fields. Gender differences in STEM participation and other associated factors have continued to occupy researchers concerned with gender equity. Several researchers, including those represented in this special issue, have argued that girls restrict their educational and career possibilities by opting out of STEM pathways, either in high school, or soon after. Opting out of STEM careers has an impact on the potential income and social mobility of women and their families. In addition to the negative impact on gender equity, societies are losing much-needed STEM workforce talent.

The international "Network Gender & STEM: Educational and Occupational Pathways and Participation" (www.genderandSTEM.com) was formalised in 2010. Since then, it has attracted more than 100 members, including researchers, scientists, policy-makers, and educational practitioners. The network also runs a website and a dedicated Facebook group (https://www.facebook.com/groups/GenderandSTEM/), has published regular newsletters, and organised four conferences to date. There exists an urgent need to integrate complementary perspectives that address the question of how pathways into STEM can be facilitated at various points in the educational and occupational development of students and young adults. Additionally, it is important to move beyond results that highlight only single aspects of formative influences and outcomes.

The collection of papers in this special issue reflects selected presentations given at our third Network conference, which took place July 21–23, 2016, at the Newcastle University Business School, Science Central, Newcastle upon Tyne, England, in association with Professor Pooran Wynarczyk. The theme of this third conference was "Promoting girls' and women's participation in STEM advancement and innovation: Connecting research with global policy and practice."

The second conference was held July 3–5, 2014, in Berlin, Germany, hosted by Dr Rebecca Lazarides and Professor Angela Ittel, and was entitled "Gender and STEM: What schools, families, and workplaces can do?". The Berlin conference highlighted the roles of schools, families, and workplaces in supporting or limiting the choices for, and persistence in, STEM for both males and females. Owing to the number of contributors involved, elected conference papers were published across two interrelated special issues of the *International Journal of Gender, Science and Technology*:

- Part 1: Vol. 7, No. 2 (2015) http://genderandset.open.ac.uk/index.php/genderandset/issue/view/21

- Part 2: Vol. 8, No. 1 (2016)
  http://genderandset.open.ac.uk/index.php/genderandset/issue/view/23

Our first conference was opened by Network Patron Professor Jacquelynne Eccles and held in Haarlem, the Netherlands, on September 5–6, 2012, with a focus on individual pathways towards (and away from) STEM fields. This conference marked the beginning of a more coherent way of exchanging information, as collectively we worked to find new ways to implement research findings in both policy and practice. The conference resulted in another special issue of the *International Journal of Gender Science and Technology* (Vol. 5, No. 3) in 2013 (http://genderandset.open.ac.uk/index.php/genderandset/issue/view/16).

The conferences and special issues are an initiative of the "Network Gender & STEM: Educational and occupational pathways and participation" (www.genderandSTEM.com). Members of the Network share the objectives of

(i) gaining greater insight into the various connected aspects of career choices and professional careers of girls/women (and boys/men) in the direction of STEM;
(ii) detecting new approaches to improve and address the underrepresentation of girls/women in STEM.

## UPCOMING NETWORK CONFERENCE AND FUTURE DIRECTIONS

The Network will hold its fourth biennial conference on July 31–August 2, 2018 at the University of Oregon, Eugene, USA. This conference is being hosted by Professor Jenefer Husman, with organising team Joanna Goode, Jennifer Ruef, Sarah Stapleton, Jill Baxter, Lisa Fortin, Helen Watt, and Noortje Jansen.

The theme of the 2018 conference is "Reimagining who does STEM and why through research, education, and action." Our fourth biennial conference aims to present empirical research and instructional practice, exploring how STEM educators, practitioners, and students form STEM identities; how those identities are formed or constrained by existing structures; and the ways in which instruction and educational policy can broaden conceptions of who can or could perform STEM research and practice. Complementary perspectives will address how such pathways can be facilitated at various points along the educational and occupational development of students and young adults, with an opening keynote address by Network Patron, Professor Jacquelynne Eccles.

The 2018 conference webpage (https://stem2018.uoregon.edu/) outlines other keynote presenters, including Professors Kimberly A. Scott, Alice Pawley, and Kathryn Scantlebury. A feature symposium, "The social contexts of girls' and women's developing sense of belonging in STEM" is organised by Professor Campbell Leaper, with contributors including Professors Sandi Simpkins, Catherine Riegle-Crumb, Amanda Diekman, and Allison Master.

The inclusion and integration of cutting-edge research from diverse disciplines with relevant scientific and scholarly expertise—alongside input from STEM

professionals, policy-makers, and educators—will collectively break new ground and stimulate fresh lines of study concerning the persistent problem of gender and STEM participation in order to enable a better understanding of the current state of knowledge, and charting directions for future research.

For further details, please refer to the Network website: www.genderandSTEM.com. We look forward to our ongoing collaboration in this shared endeavour.

The fifth biennial conference is planned for July 30 - August 1, 2020, at The University of Sydney, Australia. Save the date! Further details will be announced as they become available at the Network website.

## REFERENCES

Organisation for Economic Co-operation and Development (OECD). (2006). *Evolution of student interest in science and technology studies: Policy report*. Paris: OECD Global Science Forum.

World Economic Forum. (2014). *Global gender gap report 2014*. Retrieved from http://reports.weforum.org/global-gender-gap-report-2014/