

Abstract Compendium



*Gender-based research, innovation and  
development for sustainable economies  
and societal wellbeing*

Quality Research and Innovation through Equality  
8-9 November 2016, Brussels

The following abstracts were selected by the Gender Summit 9 Europe Regional Committee for inclusion in the Programme according to three categories: as presentation in parallel session; as part of the Poster Exhibitions; or as contributions to the Abstracts Compendium. The key selection criteria were the closeness of the research subject matter to the content of the Programme, maturity of the reported work, and overall interest of the topic.

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# PRESENTATIONS

PARALLEL 1A: INTEGRATING SEX AND GENDER IN RESEARCH AND RESEARCHER TRAINING

# Gender Analysis in the Relationship Between Red and Processed Meat Intake and Colorectal Cancer: A Systematic Review and Meta-Analysis

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Keywords: *FFQ, Prospective Study, Meta-Analysis, Gender, Dietary Assessment*

This study examined whether the gender consideration in the development stage may improve accuracy of the nutritional epidemiologic studies.

## 1. Relevance

Food frequency questionnaires (FFQs) are developed based on food items frequently consumed by usual portion size in the target population<sup>1</sup>. Since food choices and amount of foods consumed differ among women and men<sup>2</sup>, gender should be considered in the development procedure of dietary assessment tools. However, there are limited studies that have examined whether the gender consideration in the development improved accuracy or precision of dietary assessment<sup>3</sup>. Given that red and processed meat is a convincing risk factor for colorectal cancer risk<sup>4</sup>, it may be of interest to examine the gender considerations in this association.

## 2. Aims & Objectives

We aimed to examine whether the association between red and processed meat and colorectal cancer risk differed by gender in the development stage of FFQs in the prospective cohort studies.

## 3. Methods

We searched the database of Pubmed to identify studies that examined the association between red and processed meat intake and colorectal cancer risk published up to March 2015. The identified studies were categorized into "Gender-specific(GS) group" if studies determined food items and/or portions sizes based on gender-specific data. Otherwise, studies were categorized into "Not gender-specific(NGS) group". We combined the relative risk (RR) estimates of studies using a random-effects model of a meta-analysis. We then compared combined estimates between GS group and NGS group using a meta-regression model.

## 4. Results

Red meat intake was significantly associated with an increased risk of colorectal or colon cancer in GS group (RR=1.26, CI=1.15-1.37 for comparison of top vs. bottom categories), but not in NGS group (RR=1.01, CI=0.92-1.10)(P for difference by GS = 0.02). Similarly, more apparent association between red meat intake and colorectal or colon cancer risk was observed in GS group than NGS group when we limited analysis to female studies (P for difference by GS = 0.03); RRs were 1.24 (CI=1.03-1.45) in GS group, and 0.81 (CI=0.60-1.02) in NGS group. However, we did not observe any significant difference between GS and NGS groups when we combined male studies. Processed meat intake was statistically significantly associated with colorectal or colon cancer risk in both GS group (RR=1.15, CI=1.04-1.26) and NGS group (RR=1.11, CI=1.02-1.20), but there was no difference between GS and NGS groups (P for difference by GS = 0.55).

## 5. Conclusions

The gender considerations in the development of dietary assessment tools may improve accuracy and/or precision of the nutritional epidemiologic studies

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# Implementing Gender Medicine - Strategies in Europe

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Keywords: *Gender Medicine, Implementation, Strategies, Higher Education*

Based on interviews with experts from gender medicine implementation strategies to introduce (and in most cases implement) sex- and gender-sensitive medicine into the general medical curriculum have been analyzed. Gender friendly policies within countries are clear facilitators, as well as the support from the board of education and university leaders.

## 1. Relevance

Sex- and gender sensitive medicine (SGSM) is a young discipline that has started to manifest its position in medical academia since the early 2000s. In the past 15 years, associations, institutes, professorships and working groups have set up an infrastructure to promote SGSM and to establish its manifestation in medical education. This explorative and interdisciplinary study gives a brief sociological glance into the field of SGSM in Europe and analyzes its organizational aspects within its context of medicine. This collection of in-depth knowledge from experts about their individual implementation strategies is the first in the field of SGSM and allows a detailed organizational analysis of successful measures to implement SGSM.

## 2. Aims & Objectives

Aim of the study is to create a broad overview of the heterogeneous field of SGSM in medical education in Europe. There are several institutes, centers, departments and working groups focused on SGSM all over Europe; lacking guidelines and a diverse context (even within countries) led to several variations of implementation strategies. Hence this study tries to generate a hypothesis about this medical subspecialty to develop possible best-practice models for future innovators.

## 3. Methods

This explorative study consists of semi-structured interviews based on a questionnaire investigating the status quo and implementation strategies of the experts of gender medicine at their respective universities. The questionnaire was inspired by a Dutch project [1]. In this study around 350 minutes of interviews, with 20 persons from seven countries and 13 universities have been analysed. Of those 20 the majority obtains a professorship, the rest consists of university staff either working in gender-related departments or as staff in offices managing medical education.

The questionnaire focused on assessing three aspects in particular. First the status quo of SGSM at the particular university (e.g. is it mandatory; is it part of the curriculum; is it part of exams). Second how did it achieve its' status, what were facilitators or obstacles. Third what was the context within the university, within the surrounding city and the state it is situated in.

## 4. Results

The most important finding is, that SGSM is a very young and heterogeneous discipline in a hierarchical system; hence the discipline is very diverse and advocated by several status groups with differing impacts. Individual engagement is the fuel that drives innovation - the passion of the pioneers of this field has brought forth a striking variety of approaches to improve medical education. The support from country policies have been most effective, e.g. since 2002 each university in Austria needs to have an coordination office for gender equality. Due to the separation of the medical faculties in 2004 they needed to establish their own coordination offices that have a direct impact in medical education. This kind of restructuring measures, on university level as a whole as well as on course level, is the most effective to implement new knowledge, or at least aspects of SGSM.

## 5. Conclusions

Implementing SGSM in medical faculties is a complex undertaking and most times there are several frontiers that need to be tackled. I hope this study will be read by European legislators that will acknowledge that SGSM is a live-saving aspect of medicine that needs their support to bring medical education up to speed and improve the lives of millions of patients.

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# Parenthood and the Risk of Cardiovascular Diseases Among 0.5 Million Men and Women

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Keywords: *Parenthood, Cardiovascular Disease, Epidemiology, Sex-Disaggregated Research*

Women's parity has been associated with risk of cardiovascular disease (CVD). It is unclear, however, whether it reflects biological effects of childbearing or uncontrolled socioeconomic and lifestyle factors associated with parenthood and childrearing.

## 1. Relevance

Examination of the relationship between parenthood and the risk of CVD in men provides a useful insight in the relative importance of the biological factors related to pregnancy, and socioeconomic and lifestyle factors related to childrearing, especially when combined with simultaneous examination in women from the same study.

## 2. Aims & Objectives

We assessed the association between number of children and incident CVD outcomes in both women and men in the China Kadoorie Biobank, a prospective study of 500,000 individuals recruited from 10 diverse regions in China.

## 3. Methods

In 2004-08, the nationwide China Kadoorie Biobank recruited 0.5 million individuals aged 30-79 from 10 diverse regions. During 7 years of follow-up, 24 432 incident cases of coronary heart disease (CHD) and 35 736 of stroke were recorded among 489 762 individuals without prior CVD. Multivariable Cox regression models were used to estimate sex-specific hazard ratios (HRs) and 95% confidence intervals (CIs) for CHD and stroke associated with number of children.

## 4. Results

Overall, 98% of all participants had children and the mean number of children declined progressively from 4 in older participants to 1-2 in younger participants. Compared with childless women, women with children had an increased risk of CHD, but not of stroke (HR [95% CI]: 1.14 [1.00; 1.30], and 1.03 [0.92; 1.16]). Corresponding results for men were 1.20 (1.06; 1.35), and 1.13 (1.03; 1.24), respectively. In individuals with children, there was a log-linear association between number of children and CVD outcomes; in women each additional child was associated with adjusted RRs of 1.02 (1.01; 1.04) for CHD and 1.02 (1.01; 1.03) for stroke, similar in magnitude to that in men (1.03 [1.01; 1.04] for CHD, and 1.02 [1.01; 1.03] for stroke).

## 5. Conclusions

In Chinese adults, the association between the number of children and risk of CHD and stroke was similar between men and women, suggesting that socioeconomic, lifestyle, or other factors associated with parenthood and childrearing are more likely to affect the risk of CVD outcomes than biological factors associated with childbearing.

# Radiation and Gender: A Red Flag for Nuclear Matters

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New findings on gender as a factor in radiation harm, reported at the Vienna Conference on Humanitarian Impacts of Nuclear Weapons, 2014 from this author's independent analysis of the Japanese A-Bomb Survivors Life-Span study, make clear that gender coupled with age-of-exposure is a potent factor in degree of harm, expressed as cancer, across the lifetime. These gender and age-of-exposure findings are reviewed and further unfolded to show a full order of magnitude difference in cancer incidence when comparing females across their life-span, and exposures to adult males at the same level. This comparison is vital since regulators (and therefore policy-makers) often assume a Reference Man, dismissing all other Life Stages. The Hibakusha data tracks a single acute exposure; here a broad brush is taken to apply the observed Lifecycle response in Hiroshima and Nagasaki to the circumstances in Fukushima Prefecture Japan, and other locations with persistent radioactive contamination such as abandoned (and active) uranium mines and nuclear weapons testing grounds. In these growing list of populations, exposure each year may be comparable to those in the Japanese Life-Span data set. Accident consequences from MOX and high burnup and other "advanced" nuclear fuel is also explored. The recent US Environmental Protection Agency proposals for "protective action levels" after unplanned radioactive contamination, and similar guidance from other nations, are discussed. The conclusions include the specter of childhood exposure to ionizing radiation as an "opportunity cost" to healthy adulthood. Discussion of the EPA PAG levels demonstrates that these could result (if exposure is extended) in 1 in 3 females in exposed populations suffering cancer, compared to 1 in 5 males. These calculations on "allowable" exposure levels, taken back to the policy dimension of both energy and security raise a Red Flag. Health and gender equity are not being sufficiently assessed in all matters nuclear.

# Status Quo of the Integration of Sex and Gender Aspects in Medical Education in German Universities

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Keywords: *Sex and Gender Medicine, Medical Education, Curriculum Development, Gender-Specific Medicine, Gender*

Knowledge and skills on sex and gender differences in diseases need to be part of the medical curriculum. A survey was conducted to assess the current status of the integration in German medical faculties. It was found that there is not yet a systematic integration of sex and gender aspects.

## 1. Relevance

Future doctors need to have adequate knowledge, practical and communicative skills on sex and gender differences in the development, prevention, diagnosis, therapy and research of diseases in order ensure an adequate medical care for women and men. Therefore, sex and gender differences need to be part of the core medical curriculum.

## 2. Aims & Objectives

The aim was to assess the current status of the integration of sex and gender aspects into medical curricula in Germany. Our hypothesis was that sex and gender differences in diseases are not yet systematically integrated in medical curricula in Germany, although its relevance for medical care is highly acknowledged.

## 3. Methods

A questionnaire was developed and sent to 36 German medical faculties. 32 (89%) faculties participated in the survey. They were asked how it is ensured that sex and gender aspects are taught and assessed, in which medical subjects they are integrated and part of the teaching content and the assessment, if new research findings on sex and gender differences are integrated into medical education and which structures have been established to ensure the sustainability of the integrated aspects.

## 4. Results

Sex and gender aspects are not yet integrated systematically in medical curricula in Germany. To ensure the integration of sex and gender aspects two faculties have a change agent. Only 16 faculties have integrated sex and gender medicine in more than 2 medical subjects. In 13 faculties, the teachers are responsible for integrating new research findings on sex and gender differences and ensuring the sustainability of the integrated aspects.

## 5. Conclusions

Overarching concepts to improve the integration of sex and gender aspects into medical curricula and to establish supporting structures are necessary.

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# A Reversed Gender Pattern? A Meta-Analysis of Sex Differences in the Prevalence of Non-Suicidal Self-Injurious Behaviour Among Chinese Adolescents

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Keywords: *Reversed Gender Pattern; NSSI Behavior; Chinese Adolescents; College Students; Middle School Students*

This study estimates the prevalence of NSSI behaviour by sex among Chinese adolescents with a literature review and meta-analysis. A unique gender pattern was found with a male bias in prevalence of NSSI among college students, but a female bias among middle school students.

## 1. Relevance

Although the suicide rate in China has decreased greatly since 1990, there is a reversed gender pattern in China compared with other countries worldwide; specifically, the suicide rate among females is higher than that among males[1,2]. Like suicidal behaviour, non-suicidal self-injury (NSSI) is also a health-risk behaviour, and similarities exist between these two behaviours[3]. In studies from Western countries, NSSI is usually viewed as primarily a female behaviour and mostly found in adolescents[4]. Most studies on NSSI in China are conducted among adolescents, including college students and middle school students. It is unclear if the prevalence of NSSI behaviour among Chinese adolescents is still following the female pattern or a reversed gender pattern compared to other countries.

## 2. Aims & Objectives

We examined if a reversed gender pattern existed in the prevalence of Non-Suicidal Self-Injurious behaviour (namely the among Chinese adolescents as with the suicide rate in China compared to other countries.

## 3. Methods

The articles in English and Chinese on NSSI behavior among Chinese were searched on line from the literature database. A meta-analysis method was adopted to analyze the sex difference in the prevalence of NSSI behavior among Chinese adolescents.

## 4. Results

The prevalence of NSSI behavior among males is higher than among females, but this is only true among college students. Among middle school students the NSSI behavior follow the usual female bias, at least to some extent.

## 5. Conclusions

Our analysis indicated the existence of a unique gender pattern in NSSI behaviour among adolescents, with the prevalence of NSSI behaviour among males being higher than among females, but only for college students. For middle school students, the prevalence of NSSI behaviour followed the usual female bias, at least to some extent, which is in accordance with findings obtained from studies in Western countries.

Our findings emphasize the need for continued efforts to conduct surveys on NSSI behaviour among the Chinese population by gender and age. These efforts will be of great significance to enrich studies on NSSI across different societies and cultures. Furthermore, our results also address the need to develop a gender-specific intervention strategy for NSSI among Chinese adolescents of different ages.

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**PARALLEL 1B: TRANSFORMING ORGANIZATIONAL STRUCTURES, PRACTICES, AND  
WORKING CONDITIONS IN A SYSTEMATIC WAY**

# Time to Care in Research Funding: Exploring the Paradox Between "Time to Care" Allowances and the "Ideal Academic"

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Keywords: *Gender, Care Responsibilities, Research Funding, Allowances, Ideal Academic*

We aim to expose and address the underlying paradox between stereotypical notions of the "ideal academic" and compensating for time to care in research funding (e.g. extensions of the eligibility window for grants). Interventions that fail to address this paradox will result in ironic effects for both men and women.

## 1. Relevance

To promote gender equity in research funding, both research producing and research funding organization have developed various measures. Among such measures, compensating for time to care may have unintended or ironic consequences and in fact reproduces rather than resolve inequalities between men and women in research funding. To prevent such ironic effects, and to effectively facilitate combining career and care in research funding we will explore the underlying paradox between (often implicit) notions of the ideal academic (and the ideal academic career) and various measures to compensate for time to care such as extension (time), adaptation (criteria), and supplementation (resources).

## 2. Aims & Objectives

By working through this paradox, measures to compensate for time to care will become more effective in promoting gender equity in research funding. By moving away from an obsolete breadwinner career model toward the realities of dual earners who combine career and care (including elder care), research funders send a strong signal that there are various routes to excellence.

## 3. Methods

Based on the ERCAREER CSA project, we collected examples of existing measures to compensate for time to care in research funding organizations and their consequences for application and success rates of men and women. We also collected published articles, stories and anecdotal evidence of such measures and their ironic effects in research producing organizations, such as "stopping the tenure clock" (STC) in the US context.

## 4. Results

We will illustrate evidence-based examples of three kinds of measures to compensate for time to care in research funding (both in the application phase and when funded), including some ironic effects.

## 5. Conclusions

We will explain how the underlying paradox can be exposed and addressed, to prevent ironic effects from occurring.

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# EDGE Initiative at Elsevier: Leading the Way Through Diversity

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*Keywords: diversity, inclusion, workforce, HR, benchmark, employee engagement*

As an industry leader and scientific information solutions provider, Elsevier has embraced the business case for gender diversity, working with EDGE, a business certification standard to benchmark and improve gender balance across the organization and particularly within our senior management. Embedding gender equality (from research practices to recruitment and retention) into our core strategy has been embraced as a business imperative. We are now among the first information solutions and technology companies to be EDGE certified.”

## 1. Relevance

The business case for the advancement and promotion of women is compelling. Companies with more women in top management and board positions not only better reflect the profiles of their customers and employees and benefit from more diverse views, but they also receive a higher return on investments in the long run. It gets even more impressive when you look at companies with more than three women on their board over the past four years: 84 percent more return on sales, 60 percent more on invested capital and 46 percent more on equity, according to a 2011 study by Catalyst. This was a rationale that resonated strongly with Elsevier’s senior leaders and led them to support our involvement with EDGE. In addition, the 2015 launch of the UN’s sustainable development goals, proved an important catalyst for change for us.

## 2. Aims & Objectives

Our goal was to make Elsevier more gender balanced across the organization and to foster a more inclusive environment in order to achieve outstanding business results. EDGE’s business centric, scientific approach to measuring and improving gender diversity was based on benchmarked practices with a strong track record in large, global organizations. They are now working with us to define not only the issues and capture the data, but also the best practice interventions needed to improve gender balance, commit to actions and enhance the Elsevier employer brand through global certification by an external auditor.

## 3. Methods

Elsevier started working with EDGE in 2015. EDGE certification requires a rigorous and comprehensive assessment of five key areas: recruitment and promotion, leadership development training, mentoring, equal pay, flexible working, and company culture. The results of the assessment provide a clear benchmark for measuring progress and help embed gender equality in our core operational strategy and practices. We have formed an action plan based on the results and are implementing these actions globally. We have now earned EDGE Assess, the first level of certification, after an independent verification of the findings by a third-party auditor across our eight core business operations in the US, UK, the Netherlands, Germany, France, India, China and Japan. However, our EDGE certification is not happening in isolation. We have established a gender working group within Elsevier to examine key processes and provide targeted interventions in eight other focus areas including gender diversity on editorial boards, panellists at conferences, analytics in research and publishing.

## 4. Results

EDGE assessment includes three sources of information: 1) company statistical data 2) policies and practices that help create the infrastructure for gender balance and 3) the employee survey capturing the workplace experience and perception of employees surrounding these practices across key areas of analysis. We found a varying degree of practices and policies that support gender equality across all the eight geographies. Our aim is to bring consistency in the implementation of practices related to recruitment, leadership development, flexible working and equal pay. One of the objectives is also to educate our employees and management regarding the impact of biases on the decision-making and organizational culture. We are also tracking specific targets with regards to gender breakdown in recruitment, succession planning and talent composition within senior management roles.

We are now among the among the first information solutions and technology companies to be EDGE certified for making a strong public commitment to gender balance and identifying a concrete action plan. This first level of certification is called EDGE ASSESS, part of a three-tier system. We are now working towards the next level with EDGE MOVE certification (achieving a framework for change and achieving



significant milestones as outlined in our action plan) and possibly towards our longer term goals with EDGE LEAD certification achieving a complete gender parity with regards to the talent pipeline, pay equity, a strong policy-enabling framework and an inclusive workplace culture. As we navigate this process, we will share our experiences with our industry and academic peers.

## 5. Conclusions

As a leading scientific information solutions provider and industry leader, Elsevier has a responsibility—and a business imperative—to achieve gender balance in our own organization, while at the same time applying a gender lens in research and establishing best practices externally. The impact of establishing an industry-wide framework for these processes can be considerable. Publishers are the stewards of the world's research—research which must be solicited, managed and judged to be as robust and relevant as possible to tackle the great challenges of our time. We are also increasingly an information solutions provider, sitting at the intersection of technology and academia. In light of our company's positioning, Elsevier's experience with EDGE certification is an important achievement to share. Our goal in presenting this work is to also to learn from a dialogue with the Gender Summit's rich cross section of participants.

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# Fix the System - Not Women: Gender Equality in Irish Higher Education

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Keywords: *System-Wide Approach, Cascade-Model, Organisational Culture*

In 2015-16, the HEA commissioned a ground-breaking review of gender equality in Irish higher education institutions, utilising quantitative (unprecedented data collection in Irish context) and qualitative methods (wide stakeholder consultation, including a national survey which received 4,835 responses). Recommendations, on how gender equality will be achieved, are linked to funding.

## 1. Relevance

This review can provide a valuable example to other European countries, and we are keen to share our findings and recommendations. Significantly, the review concerned itself with the entire higher education community, as true gender equality cannot be achieved in academia if administrative, support, and other staff continue to work on horizontally and vertically segregated sectors. The recommendations are linked to institutional funding and address all key stakeholders in the Irish education system. It is anticipated that the implementation of these recommendations will address long-standing inequalities in Irish higher education, and in turn will increase the success of Irish higher education institutions.

## 2. Aims & Objectives

The Expert Group, chaired by former European Commissioner Māire Geoghegan-Quinn (former European Commissioner for Research, Innovation and Science from 2010-2014), aimed to identify the nature of the problem, and in turn to develop a vision for Irish Higher Education.

Vision: By investing in gender equality, Irish higher education institutions (HEIs) will maximise their pursuit of excellence and successfully meet the many social, economic and social challenges of the future’.

Ireland will have achieved gender equality in higher education when: the most talented women and men are employed at all levels in Irish HEIs, in both academic and non-academic roles; there is no perceived gender inequality amongst staff members; Irish HEIs have successfully achieved and retained Gold Institutional Athena SWAN awards [1].

The Expert Group identified 61 key actions to be implemented if gender equality is to be achieved. The report was launched on 27 June 2016 [2].

## 3. Methods

The approach taken in conducting the review involved the following stages:

- Policy-context research;
- Literature review of the international and national challenges and emerging solutions;
- Unprecedented data collection to establish figures on the gender breakdown of Higher Education Institution (HEI) staff;
- Collection of HEI institutional equality policies, and where applicable, HEI Athena SWAN applications or institutional statements on their gender equality initiatives;
- Wide consultation with stakeholders involving face-to-face meetings with the Expert Group, written submissions from interest groups, and a public online survey;
- Development of recommendations.

## 4. Results

Only 19% of heads of Irish publicly-funded higher education institutions were women in 2016. There has never been a female university president. While 52% of entry-level academic positions are filled by women, men fill 81% of professorial positions. While women fill 62% of non-academic positions, the lowest paid of such positions are mainly held by women (72%), and the highest-paid non-academic positions are mainly held by men (72%).

The majority of the 4,835 respondents to the first national online survey on gender equality in higher education institutions believe that there is gender inequality in Irish higher education institutions.

Key areas for improvement included:

- 67% Promotion/progression
- 61% Gender balance on senior management teams at institutional level
- 60% Overall culture
- 52% Career development opportunities
- 51% Transparent procedures/processes; senior management’s leadership on gender equality
- 50% Representation of men and women on key committees; Childcare/carers’ provision and supports.

## 5. Conclusions

Having considered the literature and data, the Expert Group concluded that a 'fix-the-women' approach cannot achieve gender equality. Instead, organisational culture must be altered to ensure that talent in women and men is valued equally.

The Expert Group made wide ranging recommendations to:

- Higher education institutions (HEIs): regarding leadership, governance and management, recruitment and promotion, organisational culture, gender action plans, Athena SWAN;
- The Higher Education Authority;
- Irish research funding agencies;
- Government departments and other stakeholders, including those concerned with assessing 'excellence'.

Failure to implement meaningful measures to combat gender inequality will be penalised in HEIs' funding allocation. The Expert Group support the Athena SWAN charter as a valuable means of encouraging progress towards gender equality. They therefore recommend that in the future, research funding agencies should require higher education institutions to hold a silver Athena SWAN award if they are to be eligible for funding.

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- [2] <http://www.hea.ie/news/higher-education-institutions-will-risk-funding-penalties-if-they-fail-address-gender>

PARALLEL 1C: COMMUNICATING GENDER TO INFORM POLICY AND CHANGE SOCIETAL ATTITUDES

# Sex and Gender Requirements in Biomedical and Public Health Funding

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Keywords: *Scientific Research Funding; Sex; Gender; Research Methods*

This paper will critically analyse national and regional grant policy and guidance documents introduced in Canada, the United States and Europe which require biomedical and public health researchers to integrate the concepts of sex and gender into their research designs.

## 1. Relevance

The integration of sex and gender analysis into national and regional policies has been heralded by many as a significant step toward better, more innovative research and ensuring that needs of women and men are equally considered and equally benefit from research (Sharman and Johnson, 2011). Integrating sex and gender into biomedical and public health research, however, requires these categories to be conceptually constructed beforehand. Subsequently how they are conceived becomes a fundamental feature of the knowledge that is produced. Several studies have noted significant conceptual problems related to the use of these concepts in biomedical and public health research (King, 2010). Although some have attributed these conceptual problems to the failing of researchers and publishers, government funding frameworks play a crucial role, as regulators of research on human subjects, in determining how similarities and differences between men and women will be explored, studied and compared.

## 2. Aims & Objectives

By identifying the conceptual frameworks that underpin sex and gender funding requirements, it is hoped that policy-makers and researchers can develop better funding guidelines and research methods for sex and gender analysis in biomedical and public health research. Choosing one term over the other seem like an innocent matter of semantics, but conceptual and theoretical understandings of the terms have serious implications for future research, clinical practice, and treatment, as well as for understandings of nature outcomes and status differences that are studied. Further research exploring efforts to use sex and gender in biomedical and public research studies is needed. Such research could assist produce more effective research policies, protocols, designs and methodologies and ensure that biomedical and public health research better accounts for the complexity of factors that affects the health of both men and women.

## 3. Methods

We analysed different national and regional biomedical and public health research funding policies, requirements and guidance documents, using a qualitative content analysis informed Bacchi's (2009) 'What's the Problem Represented to be' (WPR) theoretical approach to policy analysis. Coveney (2010) identifies the WPR approach as a one of three key approaches to analyzing public policy. Due to resource and time constraints, we limited our analysis to most recent documents that would be used by grant applicants and evaluators in the grant award process. These included guidance documents, evaluation manuals and policy documents. We conducted a deductive and inductive qualitative content analysis as described by Forman and Damschroder (2008). We used Nvivo software to search, organize and code the data into the hierarchical themes.

## 4. Results

How we conceive of the problem and the concepts that inform the problem representation matter. Each institution has conceptualized the concepts of sex and gender differently and these conceptual understandings have informed how the problem has been framed and subsequently the solution- the research requirements. Although the CIHR and EC both promote the integration of a gender analysis their definitions of gender, how they define the concept provides very different conceptual frameworks for conducting the research. The NIH's narrow focus on biological sex differences not only limits approaches to the biological analysis but also has the potential to produce results that over-emphasize sex differences and ignore critical overlap and variations among females and males. In this way, these different funding requirements inform how sex and gender analysis is conducted in biomedical and public health research and ultimately what we can know about the role of sex and gender in health.

## 5. Conclusions

Our research on sex and gender funding requirements introduced by the NIH, CIHR and EC draws attention to multiple meanings given to the concepts of sex and gender and the critical importance of deciding how these concepts should be understood. By teasing out key distinctions in how sex and/or gender analysis is being governed in biomedical and public health research, we open up conceptual space for new approaches and new understanding about the role of sex and gender in health.

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# Policy Learning through a Gender Equality Online Platform

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Keywords: *policy learning, online services, gender equality policy, social media*

The online community genderportal.eu offers a user-generated repository of gender equality resources and networking options for actors in gender equality, including a twitter account. Policy learning for users facilitated through genderportal.eu and its twitter account will be discussed in this talk

## 1. Relevance

An increasing number of online platforms promote the implementation and monitoring of gender equality policies in science. Such online services facilitate policy learning for researchers and policy-makers. The areas of gender research and gender equality policy hold an extensive and constantly growing body of professional knowledge and expertise, as well as scientific and policy resources that need to be bundled and made accessible for a growing community of experts. These platforms for networking and information exchange in academia ease communication among policy-makers and researchers beyond organizational and geographical borders. Services include networks, blogging services, content-sharing and cloud services, email newsletters and databases. The FP7-funded project GenPORT initiates such an online community, amplified by a twitter account.

## 2. Aims & Objectives

The presentation will discuss how genderportal.eu contributes to policy learning for actors in the field of gender equality in science by offering a blogging service, a user-generated online repository for resources on gender and science, networking possibilities for gender experts, as well as gender statistics and policy papers. The portal's output is amplified by its Twitter account @GenderPORTal through which resources uploaded to the portal, events, and gender and science related information are promoted. The proposed talk explores learning for gender equality policy-actors through genderportal.eu. This will be exemplified by an analysis of GenPORT's twitter account. The analysis aims to compare twitter data generated through @GenderPORTal one month before and after the official launch event of genderportal.eu in Brussels on April 21st 2016. We will show that an increased traffic to GenPORT's twitter account can be related to possible gender equality and policy learning for users.

## 3. Methods

Numbers and demographics of followers, numbers of tweets on @GenderPORTal from one month before and after the launch of genderportal.eu will be contrasted using data collection software tools Twitter Analytics and Tweet Archivist, the latter gathering detailed information on the source of tweets. This allows for a differentiation between tweets by policy-makers, organizations, and researchers. An increased reference to the @GenderPORTal by policy-actors and related institutions will display the extent to which genderportal.eu is being used by policy-makers. Tweets will be investigated by means of qualitative content analysis (see Kuckartz 2012; Mayring 2007; Schreier 2012) and the dominant topics thereof identified.

## 4. Results

Results will display the impact of genderportal.eu and of its launch event on the twitter community @GenderPORTal, its demographics and preferred contents of users. This will allow for conclusions regarding the user intake into the online community of genderportal.eu and lead to an analysis of the use of the portal and related twitter activity by policy-makers. Genderportal.eu fills the gap in web 2.0-based services for gender experts and policy-makers and opens up new possibilities for them to connect and share expert knowledge. In addition to twitter, the portal also offers a blogging service, a user-generated online repository for resources on gender and science, networking possibilities, as well as an online community of gender experts, providing expert advice on integrating the gender dimension in research. An increased reference to the @GenderPORTal twitter account by policy-makers and related institutions will display one aspect of how genderportal.eu is being used by policy-makers.

## 5. Conclusions

In this presentation user behaviour will be discussed as a crucial aspect of virtual policy learning with a view to the perceived benefits of online services, such as twitter as a source of information and an

understanding of gender equality. Correlations between an increased use of social media platforms and policy learning will be uncovered and possible implications for the needs of policy-makers identified.

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# How to Make a Case for Gender Diversity to People Who Don't Know Why They Should Care

Dr Alison Bert<sup>1</sup>

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Keywords: *Diversity, Gender Equality, Gender Balance, STEM, Women In Science, Advocacy, Science Communication, Writing Tips, Messaging*

To promote change and get funding, it's essential to convince people of the value of gender equality in science, including people who are skeptical. With humor and real-life examples, Dr Alison Bert demonstrates the dos and don'ts of communicating gender issues to a broader audience.

## 1. Relevance

There are many compelling arguments for gender diversity in science. However, these messages are often aimed at people who already understand the issues and support the need for change. And sometimes the messaging is too academic for a broader audience that may include policymakers, funders, and the ultimate funders & taxpayers.

## 2. Aims & Objectives

The goal of this presentation is to help people in academia and other areas of science advocate even more effectively for gender balance policies and funding.

## 3. Methods

Dr Alison Bert writes:

"As Editor-in-Chief of Elsevier Connect for the past four years, I'm constantly evaluating data on reader engagement for our stories, such as which stories are viewed and shared the most. Also, many people who speak and write about gender issues suffer from 'the curse of knowledge.' For example, they may use terms such as 'gendered innovations,' which need further explanation to make sense to most people, or they may 'bury the lead' in terms of why everyone benefits from gender balance, not just women."

## 4. Results

Viewing the messages of gender advocates through the lens of a journalist and lay persons in the realm of gender in science can help catch jargon and other missed opportunities and make the messaging more effective.

## 5. Conclusions

To make a strong case for gender equality to policymakers, funders, employers and the public, it's very helpful to use best practices from journalism and the broader field of communications.

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- [3] Alison Bert: Translating life into science; five women tell their stories: Elsevier Connect (February 2016)

**PARALLEL 2A: DEVELOPING AND TESTING GENDER EQUALITY PLANS AND INTERVENTIONS  
FOR STRUCTURAL CHANGE IN RESEARCH PERFORMING ORGANISATIONS**

# Genovate Model for Gender Equality in Transforming Research And Innovation

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Keywords: *Gender Equality, Change Management, Gender Academy Model*

This presentation provides an overview of the structure and phases of the GENOVATE Model for Gender Equality in Transforming Research and Innovation. The model is underpinned by Change Academy principles, the social process and complex adaptive system theories and informed by data collected and analysed throughout the GENOVATE project

## 1. Relevance

The GENOVATE project aims to transform organizational structures, to promote more gender-competent management, to further the achievement of robust, substantial, and sustainable gender equality research systems, such that gaps between policies and outcomes can be effectively reduced. Explanations of gender inequalities have evolved over time, but have centred on the role of key elements: individual factors, organisational structures and institutional cultures. GENOVATE recognises the relationality and interdependency between and among these elements as being at the heart of organisational change, which first and foremost emerges from the felt need for change by individuals, institutions and wider society and which is a powerful driver for change. Both external and internal factors (e.g., predominance of men's voice in decision-making processes; underrepresentation of women in specific disciplines; institutional insensitivity towards gender discrimination) are important drivers that stir stakeholders' questioning of existing gender dynamics, and open up possibilities for profound structural and organisational transformations.

## 2. Aims & Objectives

The GENOVATE model for Gender Equality in Transforming Research and Innovation is based on the outcomes of the GENOVATE project processes and activities. The model aims to make a key contribution to holistic understanding of the issues, processes and outcomes of gender inequality in research within a diverse mix of universities and national contexts with three key features: draws from four specific but diverse cases giving a whole-institution perspective on the issues and activity of all work packages; reflects gender equality change in the GENOVATE institutions, emerges from the on-going documentation of the implementation process at ground level for each project team; and provides details of the process of implementation and the potential barriers and innovative

## 3. Methods

This model was developed through focussed GEAP implementation activities in the six core GENOVATE institutions and input and feedback from the evaluation team, input from GENOVATE International Advisory Board members and other key stakeholders was of great significance. The model has been developed by using a variety of methods: Consultation via the Guided Reflections, at micro and macro institutional levels; Establishment of the GENOVATE Community (online platform) (developed and maintained by UNINA); GENOVATE Community is a basis for collecting written reflections; Contextualising institutional practices, analysis and synthesis of the findings of the GEAP implementation and Work package activities; 6 Stop and Share Sessions - October/November 2013, November 2015 and December 2015; Workpackage presentations and Consortium discussions at 4 annual GENOVATE Conventions 2013, 2014, 2015, 2016; Regular [from M3] and then Weekly virtual meetings [from M37] between Trnava and Bradford Universities to fine-tune the model.

## 4. Results

The GENOVATE Model rests on and comprises five overlapping and mutually influential phases: Investigate Plan, Act, Outcome, Reflect. Each of these phases both involve diverse and wide spectrum of stakeholders, as well as the development of a number of activities, measures, strategies, and actions to ensure a participative, inclusive, thorough and active transformation of organisational cultures towards effective gender equality. Central to the implementation of the GENOVATE Model is an overarching Gender Equality Change Academy Framework [GECAF] which emphasises the importance of creating a supportive environment for conversation, discussion and learning on gender equality. The model recognises the specificity, different contextual realities, and uniqueness of different actors, whose structures, systems and cultures have evolved in different ways, and relate to the wider structures, systems and cultures of which they are a part.

## 5. Conclusions

The GENOVATE model demonstrates the way of supporting institutions to make significant change, furthermore it is not only changing the way that organisations work, but changing mind-sets and the way that people think, especially those higher in management. It embraces the synergies between top-down and bottom-up actions and approaches, and which delivers innovative, locally/appropriate, structural, cultural and sustainable change for gender equality in research, innovation, and organisational cultures. Learning about change is an experiential process: those involved in the process will learn about how an organisation can change from within, based on a diverse range of agreement and disagreement, personality clashing and harmonising, compromise and bargaining.

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# COST Action the String Theory Universe MP1210

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Keywords: *String Theory, Theoretical Physics, Gender and Science*

In this action we have implemented different measures in order for the gender issue to be discussed in our community. Most remarkably, we have held two workshops on String Theory and Gender, with increased success, and a third one is already being prepared.

## 1. Relevance

This COST action, now approaching to an end, was the first one in Theoretical Physics and it had a strong commitment to deal with gender issues. Women are about 10% of researchers in the field of string theory and things seem not to be improving in the younger generations.

## 2. Aims & Objectives

The goals of the Action was to discuss issues that up to now had been a tabu in our field, increase the presence of women and their visibility in conferences and workshops and drive the selection, scientific and organizing committees towards an acknowledgement of gender bias.

## 3. Methods

We have included gender activities in every conference organized and we have started a series of workshops on 'String Theory and Gender'. We have held already two such conferences and have exposed the community to the knowledge of gender experts. The discussions were generally quite alive and we think that have made a deep impression in our community.

## 4. Results

The main goal achieved is to establish the idea that this is an issue of primordial importance, sociologically but also scientifically. A discussion has been opened and awareness has been raised. Also, we have improved women's visibility by monitoring scientific and organizing committees in our workshops, but also in conferences not directly related to the Action.

## 5. Conclusions

We think that we have made a first step in an environment traditionally very reluctant to accept any of the premises of the gender bias. Even among women, speaking about discrimination was hard because the negative tag that colleagues could attach to the women complaining about it. The key to the success was the union and coordination of all the women in the field, something that was kind of difficult because of the dispersion of the few women among different countries and institutes. Being the only woman in a department or research group is a rather common situation in our field. We succeeded first in jumping that barrier and then we were able to act coordinately.

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[2] Second Workshop on String and Gender (Paris, France): <https://indico.in2p3.fr/event/12356/>

# PLOTINA: Gender Balance in Research, Innovation and Training

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**Keywords:** *Gender In Research And Teaching, Gender Equality Plans, Sex And Gender In STEM, Research Performing Organisations, Gender-Aware Culture*

PLOTINA will improve gender equality in academia at all levels. Gender Equality Plans (GEPs) based on innovative self-tailored and sustainable strategies will be carried out in six European Research Performing Organizations (RPOs) with the aim of stimulating a gender-aware cultural change; promoting career-development of female researchers; ensuring diversification of methodologies.

## 1. Relevance

The comparative pre-analysis of the 6 RPOs involved in PLOTINA shows that there is an average gender gap (male 60%-66%) in the academic staff, while a reverse gender gap (male 26%-47%) is detected in the administrative staff. At the Assistant Professor rank, there is a balanced picture in three RPOs, a slight majority (1-3%) of women in 2, a distinct majority of men (65%) in one. At Associate Professor level, the ratio of women decreases from < 30% to 37%. In the Full Professor rank, the share of women drops to < 35%. In Governing bodies, women represent less than 1/3 and only one RPO has a female Rector. Consistent with European data [1] and with the phenomenon of vertical segregation, this analysis demonstrates a decrease in the women share as they progress to more senior academic positions. Therefore, the PLOTINA's relevance is very high.

## 2. Aims & Objectives

PLOTINA aims to: prevent underutilization of qualified female researchers by removing barriers to recruitment, retention and career progression; improve decision making by addressing gender imbalances to meet new opportunities for scientific innovation, excellence and productivity; incorporate the sex/gender dimension variable in research contents and teaching curricula especially where it is traditionally not applied (as in the STEM area). This objective is based on the vision to foster excellence and the social value of innovations [2], by: stimulating a gender-aware culture change; promoting career-development of both female and male researchers to prevent the waste of talent, particularly for women; ensuring diversification of views and methodologies (considering the gender/sex dimension and analysis) in research and teaching [3].

## 3. Methods

An Audit procedure of each RPOs, to identify gender bias, has been implemented in the first phase of the project, by collecting qualitative and quantitative data. On the basis of the critical review of existing practices and the insights gained through the gender audit, each RPO will then design a self-tailored GEP. Each GEP will be based on a series of common pillars: recruitment, retention and career progression of female researchers, gender imbalances in decision making processes and integration of the gender dimension in research contents and teaching curricula.

The workplan will proceed in four overall stages: assessment of the current situation (gender audit); design of GEPs for each RPO; implementation and evaluation of Actions to address the targets of the GEPs; creation of a platform of resources that can be used by RPOs across Europe (Tools, GEPs Library of Actions, a Good Practice Guide, research and teaching Case Studies).

## 4. Results

In this first year a list of previous actions in Europe and in the involved RPOs has been delivered by PLOTINA. A Gender Equality Audit Tool and a Catalogue of Core Indicators to monitor the progress are being defined. The final results of PLOTINA will be a complete set of resources for European RPOs to design, implement and evaluate their own GEPs. PLOTINA strategy is to have a short-term impact on six RPOs and medium-term impact on many other. Resources include: Tools (two mentioned above and a user-friendly self-assessment and monitoring software); Library (including specific actions in: recruitment,

career progression and participation in decision making bodies, raising awareness about biases and supporting the careers of women researchers and their capacity to attain key positions, work-life balance); Case Studies Database (teaching material and examples of integrating sex and gender in research) [4]; Good Practices Database (GEPs and successfully implemented Actions).

## 5. Conclusions

Strongly aligned with European Research Area (ERA) objectives on gender equality, PLOTINA will contribute to increase the number of female researchers, promote their careers and integrate the gender dimension into the design, evaluation and implementation of research, to enhance its quality and relevance in order to foster excellence and the social value of innovations. Additionally, PLOTINA will contribute to making research activity in Europe more competitive on the world scene by creating cultures that value and benefit from diversity in the workplace.

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[1] EC (2016), She Figures 2015.

# Careers in Physics: Which Perspectives for Women?

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Keywords: *Women, Physics, Career, GEPs*

We present the results of statistical data mining related to career progression of researchers in physics working at CNR the main public research institution in Italy, as part of the EU project GENERA aiming at monitoring and improving the Gender Equality Plans of Research and Funding Organizations in physics.

## 1. Relevance

The implementation of Gender Equality Plans has been recently considered one of the best tools to foster female participation in research organizations both at the institutional and at the European level. Within the GENERA Project a common framework to collect data has been proposed to enable not only an analysis of female representation and career in each participant institution, but also a comparison between European countries participating in the project. One of the most relevant results of this project will be the implementation of a monitoring system to assess the status of gender issues, thus determining specific needs and actions to be taken to enhance gender equality and women careers in physics.

This study intends to be a first step to spread the model of data collection in other disciplines and European organizations and countries.

## 2. Aims & Objectives

The study intends to explore career progression of physics researchers as a prerequisite for the future development of CNR tailored Gender Equality Plan, in line with GENERA objectives. The time period analysed (from 1985 to 2014) makes it also possible to relate the results with the introduction of relevant research policies implemented to support gender equity at CNR. Moreover, qualitative interviews will highlight the interactions between external factors (such as economic, political and structural/organizational constraints), with social, individual and scientific aspects.

## 3. Methods

Our work uses a mix of qualitative and quantitative research approaches to analyze career progression of researchers in physics. A secondary quantitative data analysis was performed on 793 physics researchers using the official database that allowed us to reconstruct career path from 1985 to 2014, including time period of temporary work, recruitment and career progression. Moreover, qualitative interviews of female researchers in leadership positions were carried out to analyze reasons of professional choices, career and work-life balance.

## 4. Results

Our studies show that female situation professional career advancement is worst than men one. Women in responsibility positions are underrepresented and life-work balance factors probably affect this low rate. Undergoing analysis will also link these data to those on work leaves due to family reasons, as well as to scientific outputs. All these aspects influence professional skills, personal attitudes on competition and work load as resulted from the interviews underlining direct and indirect factors affecting a balanced participation of women in physics.

## 5. Conclusions

Women representation in physics research has increased in the last decades (SHE Figures, 2015), but still women's presence in apical positions is not gender balanced (Avveduto, Pisacane, 2013). Continuing monitoring of these data are necessary together with the analysis of qualitative interviews to gain a deeper insight of interrelated aspects that bias the important women contribution in science. Therefore, the development Gender Equality Plans as well as the analysis of their effects, once they have been implemented, should be based on a renewed attention on the development of policies and their continuing monitoring. Tools that track gender equality progress and identifies gaps are therefore necessary at local and international level.

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PARALLEL 2B: INTERVENTIONS TO IMPROVE PARTICIPATION, RETENTION, AND LEADERSHIP

# Sex in Science at the Wellcome Trust Sanger Institute and European Molecular Biology Laboratory European Bioinformatics Institute: Embedding Gender Equality Within Leadership

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Keywords: *Gender, Equality, Science, Leadership*

The Sex in Science (SiS) Programme is a joint initiative of the Wellcome Trust Sanger Institute (WTSI) and European Molecular Biology Laboratory-European Bioinformatics Institute (EMBL-EBI). Highlighted are some of the many initiatives and activities that are improving gender equality and empowerment of women on Campus, with a focus on leadership.

## 1. Relevance

The leaky pipeline is a well-documented phenomenon. In the Biological Sciences, there is an attrition of women along the academic career-path, from 61% women at PhD level to 18% women at professorial level<sup>1</sup>. Some 55% of PhD students at WTSI and 31% at EMBL-EBI are female (students across the two institutes include wet lab scientists, mathematical and computational scientists, these disciplines having different gender profiles nationally - 38% female in the Mathematical Sciences and 17% female in Computer Science<sup>2</sup>). Some 55% of Post-Doctoral Fellows at WTSI and 35% at EMBL-EBI are women, with women making up only 17% of WTSI and 21% of EMBL-EBI scientific leadership roles ("Group Leaders"). The paucity of women in senior leadership positions at the Institutes is an area that we are committed to addressing.

## 2. Aims & Objectives

The Wellcome Genome Campus SiS Programme, established in 2011, brings WTSI and EMBL-EBI together to ameliorate gender inequality at a strategic level by raising awareness of issues that traditionally face women in science, inspiring women and men at different stages of their scientific careers to progress to more senior levels and driving change in practice and policy. The work is underpinned by WTSI's commitment to the Athena SWAN Charter, for which they hold the Bronze Award. Both Institutes have committed to address the stark imbalance in the number of women in scientific leadership roles and have specific actions that they are implementing. Key goals include: increasing the proportion of female applications for scientific leadership positions; improving the recruitment process by embedding unconscious bias training into the process, and supporting women to progress in seniority. This is underpinned by improving awareness and increasing the take-up of flexible working/family-friendly policies.

## 3. Methods

Changes include: specific consideration and outreach by search committees to the potential female applicant pool; mentoring and nurturing budding scientists internally; educating recruitment panels on unconscious bias; taking into account career breaks when reviewing job applications (WTSI); affirmative action statements in recruitment adverts; promoting internally and externally a women-friendly, family-friendly culture; Not progressing to interview stage if the shortlist does not contain at least one female (EMBL-EBI). Gender equality is embedded into the heart of the review process for Group Leaders (WTSI), which includes explicit consideration of career-breaks/periods of part-time working and extending the review period by one year per maternity leave. Scientific leadership positions can be held part-time. Support available to Post-Doctoral Fellows who want to transition to independence through dedicated pathway programmes has expanded and WTSI has developed a bespoke programme for high-potential future women leaders, the "Talented Women's Impact Programme".

## 4. Results

The numbers of women in scientific leadership roles has increased from three at WTSI (2013) to seven (2016) and remains at seven at EMBL-EBI. Proportions of applications by women to these positions have increased, from 26% to 31% at WTSI and 10% to 23% at EMBL-EBI. The most recent recruitment round at WTSI saw no difference in the success rate between women and men when they apply for Group Leader positions. Over the past three years WTSI has not seen any women progressing within the Group Leader levels, due to timing of the review cycles. There is a high success rate of Post-Doctoral Fellows obtaining independence following attendance at WTSI's bespoke leadership courses. Of four women who attended a course in 2013, two have already achieved independence. 100% of women who have attended the "Talented Women's Impact Programme" have rated the programme "excellent", and the provision will be expanded.

## 5. Conclusions

Women are critical to the success of WTSI and EMBL-EBI and addressing gender balance at the highest levels has been prioritised, with this ambition being linked to core funding at WTSI. Impactful changes that have transformed the Genome Campus into a more attractive place to work have been catalysed by the Sex in Science Programme, such as strengthening aspects of recruitment, retention and workplace satisfaction. Career and leadership opportunities for women have been improved; with enhanced policies and better family friendly on-site facilities. By shining a spotlight on the Institutes' existing processes and practices and challenging the status quo, we demonstrate that it is possible to drive institutional and cultural change and shift the demographic of existing scientific leadership. Aspiring to become beacons of good practice and influence change in the culture of science is the shared aim of both WTSI and EMBL-EBI.

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# Gender in Research Content: Experiences from an Austrian Programme

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Keywords: *Gender, Research Funding, Research Content, Gender Expertise*

The paper is based on a review of projects funded within the Austrian programme 'FEMtech research projects' which aims at initiating projects which specifically focus on gender aspects in research content. The review aims at describing the gender dimension in research projects funded and its effects.

## 1. Relevance

Gender equality policy in science and research pursues three main goals at European as well as national level: (1) to increase female participation in male dominated fields and in leading positions (reduction of vertical and horizontal segregation). (2) to abolish barriers for women in their career development (organisational change). (3) to integrate a gender dimension in research content. To pursue these goals, several measures have been implemented during the last decade in the European Union as well as in Austria. Empirical evidence is available for the first two of the three gender equality dimensions in science and research. The development of female participation in all fields or in leading positions is represented by quantitative indicators and monitored on a regular basis (e.g. SheFigures). Furthermore several studies focus on organisational and cultural change in research organisations (e.g. EU-funded projects addressing structural change in research organisations like INTEGER, STAGES, GENOVATE).

## 2. Aims & Objectives

A review of gender equality policies in ERA countries shows that several countries introduced gender criteria in research funding or supported the consideration of gender in research content through specific programmes (see Lipinsky 2014 or EC 2014). Although policies are in place there is hardly any evidence about effects of the integration of gender dimension in research content. How is gender operationalised? How are research questions formulated when gender is considered? Do research questions formulated indicate a change of gendered norms? How is gender expertise integrated in research teams? How do different settings to integrate gender expertise influence research organisation or focus of research? The paper addresses these questions referring to experiences made with a national programme to integrate gender in research content (FEMtech research projects).

## 3. Methods

The paper refers to a review of projects funded within the programme FEMtech research projects commissioned by the Austrian Ministry for Transport, Innovation and Technology. The analysis is based on research proposals, self-description of projects (e.g. webpages) and qualitative interviews with project leaders and gender experts involved in the projects. These empirical findings will be contrasted with an ideal scenario of the integration of the gender dimension in research projects.

## 4. Results

This comparison depicts that most research designs do not support the ideal scenario. There are several reasons for deviation: e.g. because gender concepts used are not explicated, because gender expertise is restricted to specific partners or because of a lack of reflection of results or research process. On the other hand good practice cases come up in the analysis. They are characterised by a strong position of the gender expert in the project as well as a clear definition of her/his tasks in the project. Based on these cases recommendations for the further development of the programme are formulated.

## 5. Conclusions

Based on the empirical findings recommendations for further development of the programme are formulated. They focus on the one hand on strengthening the gender dimension in research content and on the other hand on strengthening a reflection of the research process. Both aspects are identified preconditions for a sustainable integration of gender in research at an individual as well as organisational level.

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# 50:50 Participation in Pre-19 Engineering Education

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Keywords: *Engineering Education, Diversity, Networks*

We have implemented a policy of 50:50 gender balance in all of our outreach activities to school students. Participation is now competitive, with high levels of applications. Gender balance is achieved throughout, including facilitators and leaders of the activities, which are chosen to be relevant to the diverse participants.

## 1. Relevance

The eventual aim of many Engineering companies and Universities is to have roughly equal gender balance in their organisations. To encourage students to consider engineering as a career, in common with many other Universities, UCL runs many outreach activities for school students over a wide range of ages. However over the last 2 years we have implemented a policy of 50:50 gender balance in all groups attending courses and other activities in the faculty. We have worked with schools to ensure this mixed attendance which is seen as inherently fair to the students.

## 2. Aims & Objectives

One of our aims is to increase the number of female students studying engineering at UCL, we are also aiming to disseminate information generally about what engineers do, that this is diverse and requires a diversity of backgrounds in order to work successfully. By asking teachers to think carefully about who they are encouraging to attend courses on engineering we are also challenging their stereotypes and unconscious bias around who does engineering. Not only are the participants on the courses 50:50 male and female, but the facilitators running events are also as far as possible diverse, both by gender and ethnicity. This fulfils another aim of the project which is to form informal networks across the faculty of undergraduate, graduate students, researchers and academic staff, which provides role models and informal mentoring throughout the faculty.

## 3. Methods

Three challenges were: 1) Getting support from teachers. We attended teacher meetings, listened to their concerns and supported them in embedding gender equality in their conversations with students about STEM. 2) Changing misconceptions about engineering in young people. Designing activities that would show them what engineers actually do. We based activities on cutting edge research occurring in our labs with a strong social context or environmental mission. 3) Partnering with industry, organisations and other institutions to maximise our impact and sharing good practice, towards a common cause of advancing diversity in STEM. A dedicated Engineering Education Developer & Coordinator liaised with the schools and sponsoring organisations and led the discussion about embedding gender equality into the activities.

## 4. Results

The 50.50 initiative has made a difference to girls and boys on our programmes and to the schools where the students come from, shown from the feedback obtained after all of our events. It has raised awareness that STEM and engineering are relevant and rewarding careers. It has clearly also made a difference to our staff and students, reinforcing UCL's founding ethos of intellectually rigorous education open to all irrespective of race, gender, religion or social background.

## 5. Conclusions

A deceptively simple criterion for all of our pre-19 engineering education activities of 50:50 gender balance sends a clear message that engineering is diverse, both in its application and participation. We have enabled teachers and participants to challenge stereotypes and unconscious bias and formed a sustainable network of diverse students and staff throughout the faculty.

# Women in Academia: Living Outside of the Average

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Keywords: *Gender Equality, Departmental Approach, Mixed Methods, Academia*

Research on gender equality in academia is preoccupied with the average proportions of women at different career stages often using the leaky pipeline construct. Getting to know more about the 'spread' of experiences that female academics have in HEIs enriches our understanding about the significance of context on their careers.

## 1. Relevance

Literature on gender equality has demonstrated that women are still under-represented in senior academic posts in higher education institutions in UK and Europe (ECU, 2012; SHE figures, 2015). According to a European report on gender equality measures (EC, 2012), it is recommended to shift the emphasis from general to discipline specific measures, which might be more effective in addressing gender inequality. Thus, this study employs a disciplinary/departmental approach contrary to previous research focused on national and institutional data analysis and gender equality practices.

## 2. Aims & Objectives

Initially, the intention of this ESRC-funded project was to use this construct to identify patterns across institutions that would shed some light into disciplinary and organisational patterns in relation to the share of women and men across the different ranks. These patterns will inform how policy measures and initiatives will be designed appropriately to address potential disciplinary/organisational particularities

## 3. Methods

The methodology is based on a mixed methods study which includes: secondary analysis of national and institutional data using three institutional case studies from UK higher education institutions; analysis of focus groups and interviews with women academics in their early career stages in one institution.

## 4. Results

The use of quantitative methods analysis demonstrates there is great heterogeneity in the data that does not allow for consistent patterns suggesting looking closer into each institutional case. While studies and data on leaky pipeline provide an overview of what is happening in higher education institutions in relation to the representation of women, they do not inform us about the experiences of women at an 'institution' living beyond the average. Getting to know more about the 'spread' or the range of experiences that female academics have in higher education institutions enriches our understanding about the importance of context that these women operate and develop their careers in.

## 5. Conclusions

The implications of this study are pertinent to design policy actions and practices that are worthwhile undertaking (with the aim of organisational transformation in the context of gendered organisations (Acker, 1990)) and the methodology required to evaluate effectiveness of initiatives and address gender inequality in the higher education sector.

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# Female Retention in Engineering & Technology Using Problem Based Learning

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Keywords: *Engineering, Technology, Retention, Underrepresented, Problem Based Learning*

The Regional Centre for Next Generation Manufacturing (RCNGM), a National Science Foundation Centre of Excellence, partners with the Manufacturing & Mechanical Engineering Technologies (MET2) Program to address the need for interest and retention in engineering and technology career fields, especially for females.

## 1. Relevance

Women often face barriers when choosing college majors and careers, especially in engineering and technology fields, leading to underrepresentation. Although there have been research studies regarding the factors that discourage women from pursuing careers in these disciplines, specific strategies that have been successfully implemented to increase both the recruitment and persistence of women in engineering and technology disciplines have been limited. The MET2 Program provides a structure that allows both male and female students the chance to work together on projects that they have an interest in, building the skills needed to ultimately work with members of the opposite gender in engineering fields, eliminating barriers that discourage females from continuing on in those fields.

## 2. Aims & Objectives

The goal of the MET2 Program is student retention in engineering and technology fields by allowing students the chance to explore these fields beyond lectures and labs in the classroom. The goal is for students of any gender and one objective is to teach students professional skills including how to assess the behavioral styles of colleagues and teammates and how to work with each particular style.

## 3. Methods

Students are recruited from engineering and technology programs in community colleges and universities in Connecticut. Projects are presented to the students by faculty and industry representatives, with the students selecting which project they will work on. Once the student teams are formed, they take over all management of the project from planning to prototype, production plans, and patents. In addition to learning technical skills, students also learn professional skills such as teambuilding and project management.

## 4. Results

In the MET2 Program for 2016, females represented 26% of the participants with 95% of overall community college participants matriculating to four-year universities to continue in engineering and technology fields. Females in the program are able to build more confidence in the fact that they can not only work with, but also lead males in what are sometimes intimidating fields for females. as well as building their technical skills.

## 5. Conclusions

Extracurricular activities such as the MET2 Program provide training in the skills needed for different genders to work with each other in engineering and technology fields. By providing training in these skills, programs can also build the confidence of females and encourage them to remain in engineering and technology fields.

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# POSTERS



# Closing Leadership Gender Gap in Research, Industry and Business

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Keywords: *Female Leadership, Role Models, Gender-Gap*

Main issue addressed is why women remain underrepresented in leadership and what we can do to raise the number of women leaders in research, industry and business. The aim is not to solve the issues but to identify best practices, such as Role Models, to guide current and future leaders.

## 1. Relevance

The background of this research is based on understanding the differences among male and female leadership. Female leadership has shown to be same or more efficient than male leadership, but acknowledgement is not give as for male leadership. There exist some aspects of the female character that can play an important role to implement innovation strategies. These are part of the outcomes reported from the workshop on female leadership organised in May 2016 by ITWIIN (Italian Women Innovators and Inventors Network), University of Bari, University of Salento, Marie Curie Alumni Association, Marie Curie Fellows Association, Business Professional Women and TECNOPOLIS Science Park. The gathering had been hosted by the University of Bari, Italy, with more than 50 participants among managers, engineers, researchers and technology leaders to share the success experiences in the scientific and entrepreneurial fields and to give lessons of female leadership through the Role Models.

## 2. Aims and Objectives

Our aim is to demonstrate that there is not only one good recipe to build strong leaders. It is necessary to give space to the passion and creativity of female leaders. Passion is a key word to any effective leadership: be sure that in your group every member of your team is encouraged and motivated to follow their own dreams. A leader should aim to let the own team to transmit passion, to use this as access key to the market. We will address these objectives as follows:

- Why do women choose only some research fields and ignore others? (Horizontal segregation)
- How to explain the obstacles faced by the women in some sectors?
- What are the obstacles met by women for what concern the upward mobility? (Vertical Segregation)
- Which policies can be put in place? Which of them work?

## 3. Methods

Traditional high-potential, mentoring and leadership education programs are necessary but not sufficient. In the literature there are three additional actions companies can take to improve the chances for women to gain a sense of themselves as leaders:

1. educate women and men about second-generation gender bias,
2. create safe "identity workspaces" to support transitions to bigger roles,
3. anchor women's development efforts in a sense of leadership purpose, rather than in how women are perceived.

We followed the assumptions below to implement our research:

1. Continuing to affect female stereotypes and a traditional educational setting, especially for girls, because is not adapted to the challenges of the Knowledge Society;
2. Counteract the negative female models offered daily by the media system (the lack of role
3. Build a cultural climate that sees women as user's inventive, innovative, creative and active potagonists of innovation.

## 5. Results

The workshop recognized that the state of female leadership in research, industry and business is less than ideal when it comes to gender balance. Increasing the presence of female leaders and role models could give more young women the confidence to demonstrate strong leadership skills in a world where men still hold the vast majority of leadership positions. The roots of such challenges are tangled and run deep: key factors are culture, history and simple force of habit to be changed. Some scientific studies also reported that physiological differences between the male and the female brain could help to explain why women and men often take quite different approaches to communicating, problem solving, decision making, and team building. Women do not have access to the same support networks of mentors and

peers that men enjoy and their businesses and opportunities for professional growth are less likely to thrive and prosper.

## 6. Conclusions

Promoting female leadership across research, industry and business still being a task to do and using Role Models can be one way to reach more awareness for both genders.

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# Robocamp - K12 Computer Science Program for Girls

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Keywords: *Coding, Gender Education, STEM, Romania*

RoboCamp @Transylvania College K12 research and outreach program aims to increase IT literacy among girls aged 10 - 16 and foster their interest in Computer Science (CS) by providing an engaging and active programming experience. The curriculum is using educational computer and robotics applications.

## 1. Relevance

The Romanian pre-university education system lacks competent IT teachers, proper infrastructure, and the curriculum has not been updated in over a decade, with IT classes being optional in schools. The number of girls pursuing careers in IT has significantly grown in the last years, but not enough to fill the gap in the labour market. CS has become a universal language young women need to speak in order to be equally successful. Girls should also be introduced to Computational Thinking and know how to implement it developing computing and robotics applications. 'Various robotics platforms and programming environments are used to develop students' reflective problem solving skills through employing logic, cooperation and accuracy'(D. Marghitu).

## 2. Aims & Objectives

1. Organize coding summer camps and after-school coding clubs for girls, meant to develop IT and leadership skills, and enhanced self-confidence for young women toward pursuing leadership positions in the IT field.
2. Change the general paradigm that coding is a traditional man only occupation by default and emphasize the importance of gender education. We will start by raising parents' awareness that CS is a valid option to consider when choosing the direction of their daughters' education. Girls are more likely to engage in exploratory activities when they are asked to participate in real life tasks that are related to their interests such as utilization of technology for storytelling and communication.
3. Organize professional development trainings for middle- and high-school teachers in Cluj to facilitate a deeper understanding of CS concepts.
4. Research and gather statistical information about CS gender education in Romania to create the first relevant database.

## 3. Methods

'Using structured guidance, authentic tasks, and peer mentoring, the RoboCamp curriculum provides a hands-on learning environment that enables girls to reflect on their learning, share ideas, and build confidence in their abilities and future'(D. Marghitu). The girls will develop new CS skills while the parents will see the connection between such skills and the world around them, including Math and Science courses that they take in school (as IT courses are optional in schools). Female mentors will explain reasons for which they decided to pursue a CS degree, courses that they have taken, and their career plans, will provide girls with advice on college major selection. Teachers will be taught to fully utilise the available IT resources and infrastructure.

## 4. Results

In the ex-ante and ex-post program evaluations, we will survey the students and their parents, as well as the teachers who attended the training. We will be able certify that girls are as curious and passionate about technology as boys, and that they have the determination and patience to code and build robots. Parents will be impressed by their daughters' potential and progress, which will determine them to encourage learning CS. Teachers will have gained more knowledge about CS and will have learned different innovative ways of teaching it in class, after-school clubs and camps.

## 5. Conclusions

There will be a change girls' mentality that CS is purely abstract thinking. Supporting women from very young ages to pursue careers in CS can be an incredible opportunity for them to close the gender equity gaps that we see in Romania due to the high wages in the IT field. This initiative can help schools match the instruction they provide with the skills employers are looking for. Moreover, regular K12 CS camps and clubs are a great instrument for schools to adapt as fast as the market needs are changing, because they are not bound to the bureaucracy of updating a national curriculum.

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# Developing a Platform for Gender Equity in a Faculty of Science

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Keywords: *Women, Stem, Science, Academia, Policy*

Women remain under-represented across Science, with multiple factors impacting women's participation. The Faculty of Science (University of Auckland) researched women academics' experiences in the Faculty. On the basis of that, and a review of gender in academia/STEM [1], we developed and implemented a platform for gender equity.

## 1. Relevance

Science remains profoundly gender unequal, with many diverse barriers to entry, participation and engagement, success and retention. These barriers range from the impacts of gendered role stereotypes and assumptions and implicit biases, through to inflexible and even hostile working environments [1]. Increasingly, it is recognised that top-down policy and practice interventions are needed if we are drastically to improve the level and experience of women's participation in Science. Developing an evidence base comprised of a scholarly literature review [1], combined with experiential research within our Faculty, provided a foundation for developing an intervention.

## 2. Aims & Objectives

Led by the Faculty of Science Equity Committee, and supported by Faculty Leadership, we aimed to develop and implement a multi-pronged policy and practice platform that provided a foundation for inclusive and gender-equity-driven practice. The platform aimed to intervene from the very pragmatic levels (e.g., funding opportunity) through to the ephemeral (e.g., the 'culture' of the workplace).

## 3. Methods

The platform was launched with five target domains: 1) Operational Guidelines that promote gender equity in Faculty practice; 2) Training that facilitates awareness, and removal, of gender-based biases across all aspects of Faculty life; 3) Reporting on gender equity within key domains of Faculty life; 4) Mentoring of academic women to achieve success; and 5) Developing cultures of gender excellence across Schools, Departments, and the Faculty.

## 4. Results

Implementation hasn't formally been evaluated yet, and the strategy is still in implementation mode. Anecdotal evidence suggests some of the intangible 'culture' shifts are happening. The presentation will present three brief 'cases' of what we did, and why, and what impact it appears to be having, and reflect on what has been easier, and what has been harder, to implement.

## 5. Conclusions

Gender inequities within academia, and women's under-representation within STEM, are unlikely to dramatically change without the development of top-down and structural interventions. In this case, the support of leadership has been crucial to implementation of a platform that attempts that, in the absence of wider organisational or professional requirements in the local and national context (e.g., there is currently nothing like Athena Swan in New Zealand). However, challenges still remain.

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# Gender Aspects of the H2020 Project CABRISS

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Keywords: *Photovoltaics, Recycling, Critical Materials, Gender Aspects, H2020*

CABRISS ('Implementation of a circular economy based on recycled, reused and recovered Indium, Silicon and Silver materials for photovoltaic and other applications') aims at developing a circular economy mainly for the photovoltaic, but also for electronic and glass industry.

## 1. Relevance

The originality of CABRISS relates to the cross-sectorial approach associating together different sectors like the powder metallurgy (fabrication of Si powder based low cost substrate), the PV industry (innovative PV cells) and the industry of recycling (hydrometallurgy and pyrometallurgy) with a common aim : make use of recycled waste materials.

## 2. Aims & Objectives

The consortium supports the findings of the 'Strategic Engagement for Gender Equality 2016-2019: [http://ec.europa.eu/justice/gender-equality/document/files/strategic\\_engagement\\_en.pdf](http://ec.europa.eu/justice/gender-equality/document/files/strategic_engagement_en.pdf)'. As part of the M18 and M36 reports, gender details of researchers employed in the frame of the project will be documented. The WP leaders have, as part of their set objectives, the tasks of encouraging the participation of women in the management of the project and the resolution of any gender-related issues that arise. The project coordinator is responsible of monitoring that all project progresses are performed under a "same equality of chances for men and women" basis. Currently, 17 female researchers have been identified to participate to CABRISS, among them Nadj Adamovic (TUW).

## 3. Methods

All partners launch specific actions to promote participation of women in CABRISS but also rely on their internal policies. At every opportunity, the executive committee encourages the partners to offer vacations with equal opportunities for men and women so as to promote gender equality in each targeted sector. Studies about the impact of technology developments on people's professional life will be analyzed, studies that include gender, age and culture variable.

The gender action plan will be elaborated by TU Wien and updated throughout the duration of the project. The public opinion (end-user groups, stakeholders, taking account gender issues) will be evaluated. CABRISS will promote greater awareness of the vital goals of young people entering the technology sector, their vital concept, their career goals, etc.

## 4. Results

A gender action plan will be prepared during the project execution (led by TU Wien). A specific element of the project action plan relates to the public image presented by the project through its dissemination activities within the international scientific and wider community. All material will give a balanced representation of all social groupings to prevent any 'gender stereotyping'. It is essential that any gender implications in this area are assessed and clearly understood before any public statements are made. The Project Coordinator is responsible to ensure that this takes place and that the project makes a full contribution to the goals of the ERA.

## 5. Conclusions

Moreover, it is the policy of the partners to provide good links into the national educational systems, promoting awareness of the nanoscale technologies, applications and associated career potential. This encourages all social groupings in the population to join the industry with specific attention paid to women. This aims to attract more women, not just into science, but also into the industry on completion of their studies. Demonstrating research and technology activities is a key part of this exercise that can be exploited by the Project CABRISS.

## References

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# A Sex Approach on Lipid and Cholesterol Oxidation Research in Lamb Meat

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Keywords: *Sex in Research, Lipid Oxidation, Cholesterol, Meat, Lamb*

Gender/sex analysis is not widely considered as variable into food research, even though the effect of sex on meat composition is sometimes reported. To foster excellence in research and project design, the inclusion of gender/sex as a variable could represent a key strategy

## 1. Relevance

Meat sexing is a timely issue in food quality and authentication; for instance, in certain cases, male meat (such as male beef meat) are considered of higher quality than female meat [1]. For this reason, it is important to have a deeper knowledge about the effect of sex on meat quality. Sexual hormones are naturally occurring compounds in animals, which are related with their sex, but they have also an impact on the nutritional and healthiness properties of meat that reflect on diverse marbling degree, skeletal and lean maturity. Moreover, the sex could also affect the lipid composition, as well as its oxidative behavior, leading to the formation of different potential toxic compounds [2-4]. For all these reasons, it is important to investigate the effect of sex on meat lipids

## 2. Aims & Objectives

The main aim of this research was to investigate the lipid oxidative behavior on lamb meat hamburger patties as related to sex. In order to define if sex could have a key role on the formation of hazardous compounds, the cholesterol oxidation products (COPs) were also investigated.

## 3. Methods

In the present preliminary research work, 8 weaned Segureña lambs with  $13 \pm 1$  kg of live weight were fed on a basal diet ad libitum with the corresponding fattening feed until they reached a live weight of 241 kg ( $50 \pm 8$  days). Minced meat samples from lamb thigh (about 20 g) were used to obtain hamburger patties, which were cooked on an electric hot plate until the internal temperature reached  $72^\circ\text{C}$ . The content of lipid and cholesterol oxidation products (peroxide value (PV), thiobarbituric acid reactive substances (TBARs), oxysterols (COPs)) was investigated [5] as related to sex.

## 4. Results

In general, the female animal reported a higher content of TBARs and PV, while a lower amount of cholesterol and its total oxidized products was detected; in particular,  $7\beta$ -hydroxycholesterol and cholestanetriol were significantly ( $p < 0.05$ ) lower in female samples. The Principal component analysis (PCA) was carried out to better understand the impact of sex on the extent of meat oxidation. Male meat samples were completely separated from female ones, showing a higher correlation with the cholesterol content. Regarding its oxidation products, male meat samples were more characterized by their COPs content, except for  $7\alpha$ -hydroxycholesterol; on the other hand, the female meat samples were more correlated to PV, TBARs and oxidized cholesterol ratio.

## 5. Conclusions

On the basis of these preliminary results, the gender/sex variable can be relevant to evaluate the quality and the possible differences in the cooked meat; however, a deeper investigation should be carried out, to consider possible effects and/or interactions with feeding and its eventual antioxidant supplementation.

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# Women's Synergistic Collaboration in Interdisciplinary STEM

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Keywords: *Women, Collaboration, Interdisciplinary, STEM, Universities*

This study examines women's research teams and their professional socialization as an important mechanism for women's inclusion and success in interdisciplinary STEM fields. These women's advising relationships operate as an integrating process in which advisors and advisees have synergistic opportunities to overcome conflicting disciplinary subcultures for their professional success.

## 1. Relevance

Women's under-representation in the science, technology, engineering and mathematics (STEM) is known to result from exclusionary practices based on professional socialization of masculine STEM culture. Despite the recent trend of women's advancement and success in STEM academia, discipline-specific subcultures facilitate the differential inclusion of women across STEM subfields and even exacerbate the existing gender imbalance and segregation through various exclusionary practices. As interdisciplinary research teams face cross-disciplinary cultural conflicts, these women in advising relationships in interdisciplinary STEM fields illustrate that effective policies and programs are in great need for achieving the equal gender representation and inclusive climate in STEM academia.

## 2. Aims & Objectives

This study had three objectives. Firstly, it aimed to identify the cross-disciplinary cultural conflicts in an interdisciplinary STEM field. Next, this study pursued to clarify how advising relationships among women researchers facilitate a variety of opportunities in which both advisors and advisees can explore and strategize over cultural conflicts in their professional settings. Lastly, this study aimed to illustrate how these advising relationships both aid successful interdisciplinary research activities and promote an inclusive STEM culture in the long run for women's equal representation and their success.

## 3. Methods

In-depth interviews were conducted with purposefully selected eight women advising pairs in public universities in the US and South Korea. Biomedical engineering was chosen as an interdisciplinary STEM subfield that combines biological science of an approximately equal gender representation and engineering of a strong male overrepresentation. Drawing on interviews on both sides of the advisor-advisee relationships, this study obtained informative details regarding advising experiences of sharing strategies about being a successful scientist/engineer, research practices, and urgent issues in interdisciplinary areas. During data analysis, interview notes and audio-recordings complemented each other for possible variations across Eastern and Western countries.

## 4. Results

The study found international similarities in the interdisciplinary culture of 'synergistic collaboration' and cross-national variations in the extent to which an inclusive biology subculture wins over 'engineering masculinity'. In both countries, biomedical engineering was found to have its professional culture of 'synergistic collaboration'. In this interdisciplinary culture, norms of biology that supports more inclusive, interdependent research activities were found to override 'engineering masculinities' of independent, competitive activities. Advising was found to offer women researchers daily opportunities to strategize with cultural conflicts in their research activities and to make use of these cross-disciplinary cultural differences to their advantages of professional participation and success. Furthermore, advising relationships serve as a significant tool for these women researchers to access better positions and statuses in broader professional networks beyond their own discipline and university and, thus, to expand their inclusive disciplinary culture to other STEM subfields and universities over time.

## 5. Conclusions

This study found advising relationships among women researchers as a significant mechanism for overcoming cultural differences in an interdisciplinary STEM field. Advising operates professional socialization process in which both advisors and advisees strategize with different mixtures of gender inclusivity and disciplinary culture. Advising relationships not only promote women's participation and success but also drive STEM fields towards more inclusive cultures and synergistic research at the same time.



# Research Careers in Times of Crisis and New Managerialism

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Keywords: *Research, New Managerialism, Austerity Policies, Retention, Leadership*

New managerial demands, such as internationalization, accountability of research indicators and mobility, have been extended across research institutions in Europe. We compare Spanish public universities and research centres that entail diverse models of excellence and managerial practices, in the context of economic crisis, to observe vertical segregation.

## 1. Relevance

There are two main factors of relevance in our work. Firstly, the introduction of neoliberalism in academia and austerity policy that provoke harder conditions for early and intermediate researchers. Despite they have enough objective merits, they are affected by high pressures and lack of job opportunities in promotion ladder. Secondly, women are facing new challenges that impede their access to leadership positions. New managerialism and austerity policies are interfering personal issues and careers of men and women researchers. Thus, it is necessary to assess research policies from a critical perspective.

## 2. Aims & Objectives

Our aim is to analyse pressure and instability in workplaces affecting research careers. We compare two environments where excellence and economic issues are modelling diverse culture. Knowing these different contexts we examine impact of precariousness in men and women careers, as well as the access of women to leadership positions.

## 3. Methods

We conducted six case studies in life sciences, STEM fields and humanities in three research centres and three universities. We plan a multilevel design based on qualitative methodology. Firstly, we examined web discourses and legal regulations regarding hiring and promotion processes of each institution. Secondly, we conducted 8-10 interviews in each case study of men and women researchers in every stage of their career (different positions from postdoc to full professor/group leader). During these interviews we explore life trajectories regarding professional and personal main events. We carried out a total of 58 personal interviews. Thirdly, we conducted a focus group interview with senior researchers who had participated on selection processes. As senior managers, they have a complete vision about what talent means and who will progress to leadership positions.

## 4. Results

Different dynamics appear in the two institutions, since research centres develop a global competition for talent and universities are linked to teaching commitments. Researchers are subjected to higher pressures regarding mobility between centres to find grants and successive professional appointments. Lack of resources due to austerity policies affect both institutions particularly in enlargement of leadership positions. Moreover, some women express rejection to apply for group leader or full professor discouraged by competitiveness, the nature of leadership positions and because they must stop their focus on research. We find some women (and few men) shifting research careers to manager or technicians to achieve a permanent position. In university, talented researchers are trapped by assistant positions doing support tasks without opportunities for promotion. Planning personal and professional issues together is still a complicated hardship for women having to manage mobility, laboratory movements, instability, and self and other people caring roles.

## 5. Conclusions

There is a great number of researchers in temporary jobs, doing science in a precarious situations and nearly null possibilities of promotion. Hard competitiveness intersects with gender roles dispelling women from leadership positions as well as remaining hostile environments. We need gender and human resources policies to secure and foster stabilization of research careers, to find a space for doing research instead of fill out a group of indicators. In addition, strategies for leaderships are needed, oriented to attract more women into the highest positions. Since we still find few women in higher research positions and decision-making committee boards (i.e. selection committees and boards of trustees), strong measures need to be promoted in order to stop hostile culture and male hegemonic environments to tackle discrimination, and to strengthen women attitudes towards the most relevant positions of responsibility.

# Millennia2025 She4Innovation

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Keywords: *Millennia2025 She4education, She4equality, She4justice, She4economic-Leadership*

Millennia2025 She4Innovation is a concrete action of the Millennia2025 Women & Innovation Foundation: we invite you to participate in the foresight process to find out how to implement UN SDGs 4 Education, 5 Equality, 16 Justice for women's empowerment. They lead us to an essential key: 8 Economic Leadership! Ideas?

## 1. Relevance

From the six strategic axes (SA) for the human society resulting from the Millennia2015 Action plan for women's empowerment and gender equality produced with the patronage of the UNESCO, the International Working Group Millennia2025 She4Innovation has chosen the following four axes: SA-1 Justice, SA-2 Empowerment, SA-5 Education and Equality, and SA-6 Economic Power. These will be devoted to innovative actions considering the needs and values of women and girls up to the year 2025: <http://www.millennia2015.org/She4Innovation>.

## 2. Aims & Objectives

The mission of the Millennia2025 Women and Innovation Foundation is to examine strategies that will lead towards more equality and solidarity, while respecting cultural and linguistic diversity. It also works on the results produced by the International Voluntary Researchers' Network in the Millennia2015 foresight research process since 2008: [http://www.millennia2015.org/Foresight\\_Process](http://www.millennia2015.org/Foresight_Process).

## 3. Methods

The Millennia2025 She4Innovation survey uses the Millennia2025 Strategic Axes (SA) which are now uniquely combined with the UN Sustainable Development Goals 2030 (SDG): She4Education (SDG-4 and SA-2), She4Equality (SDG-5 and SA-5) and She4Justice (SDG-16 and SA-1). The foresight process that led us to combine the three SA/SDGs provides the basic assumption that She4Economic-Leadership (SDG-8 and SA-6) is the very innovative solution to develop by women for women's and girls' futures: this is why we need your input and responses to the international survey of Millennia2025 She4Innovation.

We invite you to participate and to provide your answers:

Q1 - Definition of the issue

Q2 - Retrospective assessment

Q3 - Actual issues

Q4 - Uncertainty and discontinuities

Q5 - Possible assumptions for next 10 years

Q6 - Emerging issues

Q7 - Concrete proposals

Q8 - Sources, bibliography and links:

[http://www.millennia2015.org/She4Innovation\\_Foresight\\_Survey](http://www.millennia2015.org/She4Innovation_Foresight_Survey). We will discuss these together during our session at the Gender Summit.

## 4. Results

The Millennia2025 She4Innovation concrete action and survey are in full process: we will present our key findings at the Gender Summit. The main insight of our study is that economic leadership is absolutely necessary for women's empowerment. This was also a result of the Millennia2025 Solidarity-Women concrete action, which produced a Memorandum and Resolutions proposing innovative solutions to help women in situations of precarity out of poverty: [http://www.millennia2015.org/Solidarity\\_Women](http://www.millennia2015.org/Solidarity_Women)

## 5. Conclusions

Millennia2025 She4Innovation aims at:

- She4Education: SDG-4. Quality Education: Ensure inclusive, equitable quality education, promote lifelong learning opportunities for all; SA-2. Help women to build personal, collective capital of freedom of movement and decision, quality of life, education, training, work.

- She4Equality: SDG-5. Gender Equality: Achieve gender equality, empower all women and girls. SA-5. Give same rights to girls and boys in education, training, commit them in common projects.

- She4Justice: SDG-16. Peace, justice, strong institutions: Promote peaceful inclusive societies for sustainable development, provide access to justice for all, build effective, accountable inclusive institutions. SA-1. Better respect, protect women's physical, moral, psychological integrity. Reinforce their juridical capacities, assure the non-impunity of their aggressors.

- She4Economic-Leadership: SDG 8. Promote sustained, inclusive, sustainable economic growth, full, productive employment, decent work for all. SA-6. Improve women's access in social, economic activities, carrying performance, efficiency, equity, social responsibilities.

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[2] Team: Marie-Anne Delahaut, Director of research at The Destree Institute, Head and founder of Millennia2015, President, founder & CEO of the Millennia2025 Women and Innovation Foundation, PUF, Namur, Wallonia, Belgium [www.millennia2015.org](http://www.millennia2015.org), [delahaut.marie-anne \[at\] millennia2025.org](mailto:delahaut.marie-anne@millennia2025.org) Leena-Maija Laurén, Creative Director, Millennia2025 She4Innovation International Working Group [www.millennia2015.org/She4Innovation](http://www.millennia2015.org/She4Innovation) [lauren.leena-maija \[at\] millennia2025.org](mailto:lauren.leena-maija@millennia2025.org) the Millennia2025 International Voluntary Researchers' Network: <http://www.millennia2015.org/Organization>

# Women in Academia: Between Fulfillment and Compromise

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Keywords: *Women In Academia; Work Life Conflict; Subjective Well Being*

Less women than men PhD students choose an academic career post graduation. The current research explores a diversity of considerations regarding the career choices of women PhD students after graduation in general and tries to understand whether it is a preference or a compromise in particular.

## 1. Relevance

Women today comprise about half of all doctoral students in Western research universities. However, upon graduation, less women than men choose to pursue careers as researchers in academia. While barriers standing in women's path to academic careers have been described in depth in other research, whereas research aimed at understanding the considerations regarding career choices of women PhD students after graduation have been scarce.

## 2. Aims & Objectives

The central goal of the current study is to examine the career choices of women PhD students after graduation. We were primarily interested in understanding women that chose an academic career path and examined the factors leading to this decision (e.g. career aspects, preferences and compromises). We further examined levels of 'work-life conflict' and 'subjective well-being' of women that chose an academic career compared to women that chose different career paths.

## 3. Methods

829 questionnaires were sent to all women who completed their doctoral studies at Tel-Aviv University over the last five years (2010-2014), out of which 193 returned the questionnaires. This sample was shown to be a representative due to a comparison with the distribution of women that completed their doctoral studies over these years across the nine faculties of Tel Aviv university.

## 4. Results

The findings showed that upon graduation about a quarter of the participants chose an academic career path. This includes either post-doc fellows or faculty members at research universities. About half of the participants chose alternative research paths such as faculty positions in colleges, laboratory administration, or research in the private or public sector. The remaining quarter chose different career paths entirely outside of the field.

In general, we found a gap between women's aspirations for a high salary and advancement opportunities and what the opportunities allow for in reality.

We also found that while those who chose an academic career path reported a lower level of compromise with respect to their career aspirations, they have experienced higher levels of work-life conflict. Nevertheless, their subjective well being remained high and relatively similar to women who chose alternative careers.

## 5. Conclusions

We argued that following one's aspirations regarding the quest for new knowledge, do a 'greater good', 'refusing' to compromise as well as flexibility in working hours, independent and divergent work etc., created a 'buffer' from the negative effects of high levels of work-life conflict.

The current research has the potential to improve the professional socialization process of women during their doctoral studies as well as contribute to career counseling of this unique group. In addition, it has the potential to increase the number of women PhD students who consider pursuit of an academic career after graduation due to the conceptual understanding behind their decision-making processes.

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# In What Way Can the Government Work to Promote Gender Balance and Diversity in Research?

Heidi Holt Zachariassen<sup>1</sup>

<sup>1</sup>Committee for Gender Balance and Diversity in Research, Norway

The Norwegian government has since 2004 appointed a committee to promote gender balance in research. In 2014 the committee was appointed for its 4th period. With an expanded mandate also including ethnic diversity and gender and diversity perspectives in research, the committee is now called Committee for Gender Balance and Diversity in Research (KIF).

The Kif- Committee 2014-2017 was given the mandate to: “support and give recommendations regarding measures that promote the integration of gender balance and diversity activities at universities, university colleges and research institutes, thus helping to increase diversity among the staff and in research. The Committee shall seek to raise the overall level of awareness of problems related to diversity and inclusion in the research system. Its most important task during the period is to address issues of gender and ethnicity. Its activities are to encompass diversity perspectives, including gender perspectives, in research”.

In our presentation we wish to present how the Kif-committee works to promote gender balance and ethnic diversity in Norwegian academia as an example of how a government can work to promote this issue in higher education institutions. We will give examples of how we work specifically with institutions, but also how KIF works with research dissemination, advocacy and seminars for universities and research institutes. As KIFs mandate has expanded, we will also focus on how we work to promote ethnic diversity in research and how the experience from working to promote women in academia is an asset when identifying barriers for ethnic minorities and tools to counter these in the university sector.

# Gender-Aligned Sustainable Urban Mobility: A Mixed Methods Approach

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Keywords: *E-mobility, Sustainable urban mobility, Carsharing with BEV, Female early adopters, Mobility related attitudes*

This research is part of a mixed-methods PhD project to answer the question how women can be addressed as target groups for carsharing with battery electric vehicles in urban areas.

## 1. Relevance

Transportation affects nearly every person almost every day. There are crucial gender related differences for the requirements of transportation, though. Not only different travel pattern in day-to-day life, but also differences in socialization have a high impact on mode choice. Previous literature shows a higher affinity to local public transportation and sustainability for women. Men, on the other hand, show a higher affinity towards cars, technology and innovation. However, sex and gender factors are still rarely considered when planning innovative and sustainable transportation systems. Especially in the field of transportation, there is a biased perspective of men planning for men. Women are significantly underrepresented, although, they could provide a different and valuable perspective. This is the reason why my research is of great relevance for increasing the possibility of using sustainable modes of transportation and, therefore, improving the quality of life in larger cities.

## 2. Aims & Objectives

The research aims for presenting differences in the acceptance of e-carsharing for people from German major cities according to gender aspects. One focus lies on revealing gender specific socio-demographic and -economic differences in mobility related factors such as vehicle availability and driving license holding. Gender leads to different reasons of trips and trips chains, showing while comparing the differences between women and men. Another focus is put on mobility related attitudes, focusing on those attitudes that were used to generate mobility types of people. The effect of relevant attitudes on the mode choice and the preferences for e-carsharing services is modeled according to gender differences. Particularly the relation between the affinity towards local public transportation, bike and car affinity and socialized mobility related attitudes are examined, since strong differences can be found in previous studies.

## 3. Methods

Previous literature shows a higher affinity to local public transportation and sustainability for women. Men, on the other hand, show a higher affinity towards cars, technology and innovation. However, sex and gender factors are still rarely considered when planning innovative and sustainable transportation systems. Especially in the field of transportation, there is a biased perspective of men planning for men. Women are significantly underrepresented, although, they could provide a different and valuable perspective.

## 4. Results

Generally, the results of the first research part confirm socio-demographic and economic findings from previous literature about women and men in general and about early adopters of e-carsharing. The majority of latter with 85% is male. Comparing female and male early adopters, revealed differences in income, employment status and age. Females used battery electric vehicles more often than vehicles with an internal combustion engine and evaluate handling BEVs more positively. They show a higher bike affinity and lower affinities towards technology and innovation than male respondents. Women combine public transportation and bicycling with the use of (e-)carsharing services as an additional part of urban mobility. Children do not seem to have an impact of the respective topics, although the findings suggest that services are not actually used with children.

## 5. Conclusions

This research improves the understanding of sustainable urban transportation requirements and preference with respect to gender differences. The planning of carsharing schemes with battery electric vehicles needs to focus on specific gender-based requirements of each trip (e.g. transporting or accompanying children or running errands) in order to make sustainable urban mobility an option for others than one 'typical early adopter'. Only then, it will be possible to improve the quality of living in urban areas by reducing urban space scarcity, local and global emissions and noise exposure.

# Women in Public Life Development Scheme

Amy Kordiak<sup>1</sup>, Emma Tamplin<sup>1</sup>  
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Keywords: *Public Life, Gender Pay Gap, Decision-Making, Leadership*

The Women in Public Life Development Scheme engaged women in Wales who were interested in senior level public appointments and offered them personal development, skills training, mentoring support and role shadowing. The Scheme provided mentees with the skills and confidence to apply for positions in public life.

## 1. Relevance

With women in Wales being significantly underrepresented in public life this scheme had an important role to play. It helped to ensure the effective development and progression of women into roles that have a direct influence on people's lives across Wales. This was an initiative from the National Assembly for Wales who recruited Chwarae Teg and Cardiff Business School to deliver the scheme because of their knowledge and experience in the field of women's progression in the workplace.

## 2. Aims & Objectives

The Scheme aimed to provide a mentoring, shadowing and training opportunity for 10-12 women in Wales for a period of up to 18 months.

Mentees were provided with the skills and confidence to apply for positions in public life through a programme inclusive of intense personal development and skills training, one to one mentoring support, and role shadowing opportunities at the highest levels in public bodies.

The outcome of this project was to have developed and delivered a mentoring scheme for women with a target of 80% applying for at least one public appointment.

Upon successful delivery, the publicity, findings and success of the Scheme could be shared with others as best practice in increasing the participation of women in public life in Wales.

## 3. Methods

The aims of the Scheme were achieved by employing the following methodology:

- Promotion of the Scheme through networks of contacts in a variety of methods e.g. online marketing campaign and social media
- Recruitment of mentors and mentees based on their suitability for the scheme
- A rigorous pairing process; matching on a variety of criteria
- Mentoring including 1:1 support
- -A development programme of tailored sessions
- Over 60 role models were invited to talk about their journeys from a variety of positions in public life
- Role shadowing - up to 3 positions per mentee
- A steering group to develop, monitor and evaluate the scheme
- A robust evaluation process

## 4. Results

The Scheme was incredibly successful and there is a view to continue this work. Following completion of the Scheme in January 2016, all mentees achieved some or all of the following outcomes:

- Developed the confidence and skills to apply for positions in public life
- Applied and achieved promotions at work
- Identified their career plan and goals (where they fit in public life)
- Achieved their first public appointment/s.

85% (11/13) of Mentees have applied for a position in public life

31% (4/13) of Mentees have applied for more than one position in public life

54% (7/13) of Mentees have achieved a position in public life

15% (2/13) of Mentees have achieved more than one position in public life

15% (2/13) of Mentees are still awaiting the outcome of their applications

## 5. Conclusions

The Scheme highlighted the under-representation of women in public life in Wales and raised awareness of some of the barriers to women's progression in influential and decision-making roles. The success of the Scheme demonstrated the importance of mentoring, sharing of personal experiences and positive role models in engaging women into an area dominated by men.

This Scheme was part of a larger 'Women on Board' campaign which was an excellent reflection of democracy in Wales.

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[1] Scheme overview: <http://www.wmad.org.uk/powipl-scheme>; <https://www.cteg.org.uk/powipl/>



# How to Implement Gender in Research: Approaches at an Engineering Faculties in Austria

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Keywords: *Gender in Research, Training, Didactics, Communication, Engineering*

In Austria, over the last 20 years 'Gender Studies' have become part of the curricula also at technical universities. Most of the universities have implemented gender studies lectures as a non-compulsory or an 'elective' course. The paper provides an overview on the work and teaching experiences of an long-term lecturer.

## 1. Relevance

Since 2001 the author has held various teaching assignments (seminars and lectures) at different universities in Austria in the field of gender planning and geography as well as in the field of gender studies and engineering. Based on her experience she wrote together with Brigitte Ratzler a textbook (in German language) providing an elementary overview on gender studies and their relevance for engineering and technology.

## 2. Aims & Objectives

Definitions, facts, and figures: During the classes the students are always very surprised about the lack information and explanations of the 17 to 25 percent gender pay gap that is common: also when taking into account the professional background, full time equivalents, previous professional experiences as so forth. During the lectures an overview on the European women's liberation movement and its relation to women's education as well as science and technology is provided. These historical background and facts show the development of female education in secondary and higher education which, overall, has impacted our lives as well as had an impact on opportunities in engineering that exist today. A main focus of the courses is dedicated to case studies and research findings. The author presents research on the day-to-day gender - stereotypes and assumptions concerning technical competences and abilities of women/girls and men/boys at various educational levels.

## 3. Methods

Since 2008, the author Bente Knoll has given basic ex-cathedra lectures on gender studies, engineering, an technology at the Johannes Kepler University in Linz. These lectures are compulsory for all students at the Faculty of Engineering & Natural Sciences and all together the author has held 15 lectures. Each of them was organised in a block of a 2-days-lecture followed by a 1-day lecture. Over the last several years she did short term lectures and interactive seminars providing basic information on gender studies in engineering as well as basic gender awareness trainings. These courses were given at several other universities, such as the University of Applied Sciences in Eisenstadt and the University of Applied Sciences Technikum Wien, and in several postgraduate course s, such as sustainable mobility management at the Donau University in Krems and energy management at the Energy Institute of Linz.

## 4. Results

As probably all lectures teaching gender studies in higher education institutions as well as vocational gender trainers are aware of: it is common fact that, when teaching gender studies and discussing gender (in-)equality, students tend to communicate their individual opinions and their individual day-to-day life experiences, e.g. with their boy- or girlfriends or with their own children and/or parents. It seems that, when debating gender issues, students neglect the academic discourse and gender theories.

## 5. Conclusions

The author aims to contribute to a 'de-emotionalisation' of gender and gender studies in the STEM-field.

# Facilitated Modeling to Increase Gender Knowledge of Academic Leadership

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Keywords: *Gender Training, Academic Leadership, Gender Knowledge, Facilitated Modeling, Involving Stakeholders*

Increasing the gender knowledge of academic leadership is key in gender equality interventions. A case study in a natural sciences faculty shows that the method of facilitated modeling increases the knowledge of participating academic leadership of the systemic character of gender inequality.

## 1. Relevance

Effective gender equality interventions need to involve leadership in order to increase their understanding of gender inequality processes (1,2,3). However, the effectiveness of methods to increase gender knowledge needs more research (4,5). One of these methods is group model building, a participative modeling method that supports team learning and decision making (6). It is used in structuring messy problems, in which different stakeholders have conflicting opinions on the definition, causes and consequences of a problem. Group model building supports groups of stakeholders to understand the systemic structure underlying the problem, identifying possible levers for change. Previous studies suggest that group model building enables a systemic analysis of the problem of enduring gender inequality, and that it is capable of meaningfully involving academic leadership (7,8,9).

## 2. Aims & Objectives

The overall objective of paper is to examine if and to what extent group model building is able to increase gender knowledge of stakeholders. In this study specifically, we focus upon gender knowledge of academic leadership. We first expand on the specific characteristics of the gender knowledge that interventions should provide stakeholders with. To this end we coin the concept of systemic gender knowledge, combining gender literature (10, 11) and system dynamics literature (12), defining it as an endogenous view on interacting feedback processes (re)producing gender inequality in organizations. Systemic gender knowledge implies acknowledging that organizational, societal and individual processes are feedback processes. This concept enables us to examine if and to what extent group model building strengthens the gender knowledge of participants to the intervention.

## 3. Methods

Case studies of group model building interventions in two research institutes of the natural sciences faculty of a Dutch University. Participants in these interventions were academic leadership and faculty, both men and women. Data consist of (a) verbatim transcriptions of the audiotaped intervention sessions, (b) open questionnaires on perceived causes and consequences of gender inequality, filled in by participants before and after the intervention, and (c) researcher notes. Using methods to visualize participants' knowledge in causal loop diagrams (13), we systematically translated the answers that individual participants gave to the open questionnaires into these causal loop diagrams. For each participant, we compared the causal loop diagrams, enabling us to spot shifts in systemic gender knowledge of individual participants.

## 4. Results

Overall, participating in group model building on the issue of gender inequality partially increased the systemic gender knowledge of stakeholders. The number of participants describing gender inequality feedback loops, involving processes on societal, organizational and/or individual levels, increased after the intervention. The total sum of gender inequality processes that participants described, increased as well. In addition, participants focus on organizational processes increased after the intervention; however, the number of participants identifying relevant processes on all three levels decreased.

## 5. Conclusions

The first contribution of this paper is conceptual, by developing the concept of systemic gender knowledge and developing the concept in methodic detail, describing what this knowledge entails and how to measure changes. Secondly, this study offers insights in the capacity of the intervention method group model building to strengthen the systemic gender knowledge of stakeholders. The interventions

showed a partial increase of this knowledge, implying a strengthening of participants systems understanding of gender inequality. Such a systemic understanding supports identifying leverages for change, empowering the organization to intervene in organizational processes, and ultimately providing opportunities for the organization to affect processes at societal, organizational and individual levels.

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# Scaling Research Results and Leaving No One Behind: The Case of Including Gender Along the Pathway To Scale.

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Keywords: *Scale-Up, Research For Development, Gender Transformative, Research Impacts*

Gender transformative scientific research is a key to achieving SDG 5. But how do we scale research results sustainably, while addressing gender equality? This paper aims to unpack gender issues across the process of scaling ideas and innovations.

## 1. Relevance

Going to scale' is commonly understood as a process of growing impact to some wider level, which can be geographic, policy, partnership, demographic, social change or even at a commercial level (Termeer, Dewulf, and Lieshout 2016). Some strategies involve the replicability of an innovative or successful findings (system, method, technique, programs, etc.) and others are non-replicable options and rather aim to be adopted by the 'right' stakeholders. Despite the rising interest in the process of scaling for researchers and research funders in the global development sector, few studies have addressed the issues and challenges of bringing research results to scale while remaining responsive to gender objectives (Health Policy Project (2014).

How do we ensure our research-level gender analysis strategy extends to a full scaling strategy?

## 2. Aims & Objectives

Many research funders have developed guidance and tools - sex-disaggregated data, gender sensitive indicators and gender analysis - to help researchers integrate gender dimensions (European Commission 2011; DFID 2008). Do these tools and strategies adapt to, and perhaps enhance, a scaling process?

The main objective of this research is to uncover, unpack, and critically examine and document successful strategies (active ingredients) that have worked to facilitate the integration of gender and research scaling strategies. The study also aim to enhance the understanding of the role of gender research strategies and tools in designing effective and constructive scaling strategies.

At an operational level, this study seeks to help research program managers to design their program in a way that integrates gender into the pathway to scale. At a more theoretical level, the intent is to explore the interconnection/integration of the concepts of scaling and gender through a gender transformative research approach.

## 3. Methods

The study adopts a multiple case study design - drawing on various data sources both primary and secondary, using three collecting methods: document review, interviews with key stakeholders and focus group discussion. This research examines two projects funded by Canada's International Development Research Centre (IDRC). Both projects were gender aware and aimed to challenge norms, practices or policies by using gender transformative or accommodative strategies (Rottach et al. 2012).

For this study, I have reviewed material on gender and scaling, including: tools, approaches, and designs. Program and/or project level documents associated with the selected case study were also included in the document review. I have conducted semi-structured, one-on-one interviews with key stakeholders involved in the design, planning, delivery and/or monitoring of the project. Focus group was organized at the headquarters and at the regional office in New Delhi during the field work with subject area experts involved in similar projects.

## 4. Results

The main results from the data collection methods still need to be determined since the data analysis of the study is underway and will culminate in the fall of 2016. A presentation at the Gender summit would provide the opportunity to share the results/findings of the study with likeminded organizations and individuals [if my abstract is accepted, I would be pleased to update this section for the Book of Abstracts].

Still, early processes already yield interesting considerations for research funders and managers. Besides the identification of the case studies, the rigorous process of case selection (approximately 130 potential cases reviewed) has helped IDRC to consider: : 1) A better understanding of scaling typology and the type of scaling strategies adapted to research findings; 2) A broad view of the cross-integration of scaling and gender process within IDRC from 2010 to 2015.

## 5. Conclusions

As the study is not complete, conclusions are not yet available. However, the findings will help research funding agencies to better understand the process of scaling research results while upholding gender principles. By using the Gender Integration Continuum (GIC) developed by the Interagency Gender

Working Group (IGWG), a network funded by USAID, this study will categorize approaches (gender transformative approach and accommodative) by how they integrate gender in the design, implementation, and evaluation of a research project.

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# Gender and Science Policy Briefs: "From Where to Start" to "How to Innovate"

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The GenPORT policy brief series is geared to national level policy makers and institutional science leaders in research performing organisations (RPOs) and research funding organisations (RFOs). It consists of twenty-five policy briefs promoting gender equality in research organisations.

## 1. Relevance

The GenPORT Policy Brief series is geared to national level policy makers and institutional science leaders in research performing organisations and research funding organisations. They are targeted at different country groups according to levels of implementation as reported by research organisations and the presence or absence of measures at the national level as detailed in the European Research Area (ERA) 2014 survey.

## 2. Aims & Objectives

This paper attempts to give an overview of examples of legislation, policies, initiatives and measures that can be taken at the national level to promote gender equality at the institutional level as well as tailored recommendations for countries clustered by levels of implementation around: Recruitment and Promotion, GEPs, Gender Dimension in Research Content and Gender Balance in Decision-Making.

## 3. Methods

The policy briefs are structured on the basis of the ERA Survey 2014. The limitations of the survey include that it was a self-assessment and only concerns those RPOs that answered the ERA survey. Despite these limitations, structuring the policy briefs along these lines meant we were able to cover the range of countries from 'proactive' countries to 'inactive' countries as regards gender equality policies in R&I, i.e. those with measures and those without.

## 4. Results

The policy briefs provide examples of legislation, policies, initiatives and measures that can be taken at both the national and institutional levels. Examples have been taken from a variety of key sources including the GenPORT Policy Environment Report (2015), EC (2014) Gender Equality Policies in Public Research Report, GENDER-NET Analysis Reports (2015), the Gender Summit Conference Reports amongst others. Findings include:

- An innovative example of encouraging the recruitment and promotion of female researchers is the Laura Bassi Centres of Expertise in Austria.
- An innovative example of encouraging the implementation of gender equality plans in RPOs is the German Research Foundation's- research orientated standards on Gender Equality and it's online toolbox.
- An innovative example of integrating the gender dimension into research content for RPOs are competence building activities in Canada and the USA - sex and gender training for grant evaluators and researchers. , It highlights how different country clusters can focus on different ways of pursuing gender equality in research organisations. Those countries with well-developed gender equality legislation along with a well-developed gender mainstreaming framework – could focus on competence building by strengthening training and raising awareness- for effective management practices. A focus on implementation – through monitoring and evaluation is also needed. Those countries however with a less developed legislative framework could do well to develop, enact, and enforce gender equality legislative provisions and link gender equality performance with financial incentives.

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# The impact of Women Writing Weeks in Research Performance

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Keywords: *balancing family and working life, glass ceiling, writing retreats, academic empowerment, women*

An innovative experience in which 30 academic women (junior and senior) get together to achieve their writing goals is presented. After organizing this Women Writing Week (WWW) in the University of the Basque Country (UPV/EHU) in 2015 and 2016, the rationale and results of the initiative are provided.

## 1. Relevance

Numerous studies covering a variety of social and physical sciences have regularly reported two major facts about women in academia: women publish less than men, and women make up declining percentages of the professorate as we move up the academic ladder. (1) This data may vary locally, but sex-difference patterns persist. The University of the Basque Country (UPV/EHU) (Spain) is no exception, and in its 2nd Gender Equality Plan (2014-2017) several actions are contemplated to reverse that trend. (3) One of those actions has been inspired by a series of writing retreats in New Zealand in which academic women gathered to write together. (2) In the Basque case, the retreat used on-campus facilities during summertime. Such activities have proven to be effective and empowering for women and they could be easily replicated in other academic environments.

## 2. Aims & Objectives

- To assess the costs and benefits of organizing a Writing Week open only to academic women
- To provide guidelines for similar events to take place.

## 3. Methods

Quantitative data provided by the Office for Equality of the University of the Basque Country (UPV/EHU) was used to determine whether there was a need for such an initiative. After analyzing the participant questionnaires, hypothesis were checked against semi-structured interviews with 3 representative participants and a member of the organizing committee.

## 4. Results

30 women attending 2 different editions of the WWW provided quantitative and qualitative anonymous data about their experience in the retreat. Participants reported a high level of satisfaction with the outcomes. They achieved significant advances in their writing. The experience of sharing together the retreat helped in several ways: sharing of information and “know-how”, breaking the “writer’s block”, and so on. Participants expressed the need to have some “protected” space and time at the end of the academic year, so that they could finish the writing related to their research activities. The retreat was not a top-down initiative. The University of the Basque Country provided support, coordination and infrastructures, but participants self-organized the retreat in several ways.

## 5. Conclusions

This WWW retreat is easy to organize and uses existing resources in an innovative way. With a low cost, it makes much in terms of impact in the individual careers of the participants. Women researchers need more positive action measures such as this. The WWW is a model which could be adapted in other universities.

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# Residential Area and Category of Women Leaders in Education in India and Job Satisfaction

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Keywords: *Job Satisfaction, Educational Leadership, Category, Sc, St, Sebc, Open/General*

Women are living in male dominated society and strong category system (SC, ST, SEBC and Open/General) in India. Hence the aim is to study leadership by women in the context of residential area and category. The non-standardized questionnaire consisted of 13 different components were given samples from North Gujarat Region.

## 1. Relevance

We can define job satisfaction, influenced by various factors in modern time, as how content an individual is with his or her current job. The main focus of this paper is on job satisfaction of women leaders in education in the context of their residential area: Rural leaders and Urban leaders. Women leaders in education may not have equal opportunity in towns and rural parts. India has a strong social, caste and creed system hence the study is focused on women leadership in the context of category. Indian social system is also based on categories like SC, ST, SEBC and Open/General. Job satisfaction is a much wider term, but it has been studied from 13 various components. The researcher tried to concentrate on the relative importance of job satisfaction factors and their impacts on the overall job satisfaction of women leaders in education in North Gujarat, India.

## 2. Aims & Objectives

To study the job satisfaction level of women leaders in the field of education in the context of residential area. To study the job satisfaction level of women leaders in the field of education in the context of category and (C) To study the job satisfaction level of women leaders in the field of education in the context of interactive variables of residential area\*category.

## 3. Methods

Non-standardised, four-point-scale Questionnaire on Job Satisfaction (QJS) was developed and used in both on-line and off-line form. The 13 components are: Work place/physical condition, Nature of work, Remuneration, Promotion, Authority/senior, Job security, Work interest, Social satisfaction, Colleague, Welfare facilities, Communication, Contingent rewards and Operating conditions. Women leaders in the field of education from the North Gujarat state were the population. The final sample consisted of 219 participants- 113 (51.60 %) Rural and 106 (48.40%) Urban leaders whereas 108 (49.32 %) Open/General, 23 (10.50%) SC, 48 (21.92 %) SEBC and 40 (18.26%) SC category women leaders. The data was calculated in ANOVA with the help of SPSS version 21. The effect of variables was analysed at 0.05 level. The data is prepared in % calculation in tabular form wherever necessary.

## 4. Results

For the first objective of impact of residential area the calculated value of rural and urban women leaders is 0.004 for component of communication hence the residential area of women leaders in the field of education affects the components. For the second objective of impact of the category of women leaders in the field of education affects the components of work place/physical condition, nature of work, promotion, authority/senior, job security and welfare facilities as the calculated values are less than at 05 level. For the third objective the interaction of residential area \* category of women leaders in the field of education affects the components of work place/physical condition, remuneration, authority/senior, job security, work interest, social satisfaction, colleague and welfare facilities as the calculated values are less than at 05 level.

## 5. Conclusions

The component of communication of the job satisfaction of leaders has been significantly affected by residential area. The components of nature and promotion of work of the job satisfaction of leaders have been significantly affected by category. The components of remuneration, work interest, social satisfaction and colleague of the job satisfaction of leaders have been significantly affected by interaction of residential area\*category. The components of work place/physical condition, authority/seniors, job security and welfare facilities of the job satisfaction of leaders have been significantly affected by category and interaction of residential area\*category. The components of contingent rewards and Operating Conditions of the job satisfaction of leaders have not been significantly affected by any of the variables. Having considered the literature and data, the Expert

Group concluded that a 'fix-the-women' approach cannot achieve gender equality. Instead, organisational culture must be altered to ensure that talent in women and men is valued equally. The Expert Group made wide ranging recommendations to: Higher education institutions (HEIs): regarding leadership, governance and management, recruitment and promotion, organisational culture, gender action plans, Athena SWAN; The Higher Education Authority; Irish research funding agencies; Government departments and other stakeholders, including those concerned with assessing 'excellence'. Failure to implement meaningful measures to combat gender inequality will be penalised in HEI funding allocation. The Expert Group support the Athena SWAN charter as a valuable means of encouraging progress towards gender equality.

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# Gender Equality and Career Progression of Indian Women in IT Sector: Women's Views and Perspectives

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Keywords: *IT Sector, Glass-Ceiling, Career progression, Work-life Balance, promotions*

This proposed research project will examine Indian women's experiences of 'career progression' in the fast growing, dynamic IT sector in India. It examines and analyses factors influencing career progression of women. It also critically evaluates the organizational policies of promotion and equal opportunities.

## 1. Relevance

The under representation of women in Information and Technology (IT) sector is a much lamented and discussed researched topic across the globe. India too is confronted with the issue of under representation of women in IT sector but on promotional levels. India has fair representation of women in IT workforce (47%) but the under representation of women at the promotional level and scant opportunities appear to be available for women's progression in IT. This proposed research will be one of the first comprehensive and extensive studies of possible multi-layered factors (i.e. the cultural factors, structural factors and the subjective factors) influencing women's career progression. This project will perhaps be more comprehensive inquiry into gender and career progression of women in IT sector in India.

## 2. Aims & Objectives

The study sets out to explore following: What factors do women believe affect their career progression? What strategies do individual women adopt to address the factors that negatively influence their career progression? To what extent have equal opportunity laws and organizational policies been effective in facilitating women's career progression in the IT sector in India? How women do employed in the Indian IT sector experience and evaluate governmental policies and organisational policies and practices designed to facilitate career progression? By undertaking this research project, the researcher aims to contribute to a trans cultural theoretical understanding of women's participation in the Indian IT workforce. The researcher will also contribute to identifying effective strategies facilitating women's advancement and promotion in the Indian IT sector.

## 3. Methods

The nature of this research project, which aims to exploring through women's experiences the factors influencing their career progression in the Indian IT sector, demands a qualitative method of examination. The research employed a qualitative methodology involving semi-structured interviews with 40 women employed at different levels in IT organizations in India. Women employed at different levels of promotion in three IT organizations in India were interviewed and their experiences are explored. The sample comprises a mix of single women, married women with children, married women yet to start family, occupying positions at each level within the organizational hierarchy, from software engineers (entry level) to team leaders, and consultant (middle level) to project manager (senior level). This type of sampling was chosen as women at different levels and of different marital status will have varied perspectives about career.

## 4. Results

This project is at analysis stage. Field work is complete and it has entered the analysis stage. The researchers have preliminary findings.

## 5. Conclusions

women in technology is rather a neglected area of research in India; this project is an attempt to initiate more comprehensive research around this theme. This study will be the first to address this issue and therefore will make an original contribution to the literature. The under representation of women in the so-called STEM subjects (i.e. Science, Technology, Engineering and Mathematics) is a matter of concern across the globe, and academics, government agencies and research scholars are working towards improving women's representation in these subjects. This research project contributes to that cause. This research also will make a significant contribution towards the formulation of policies that could facilitate women's career progression in the IT sector. Although this study will be conducted in an Indian context, given that IT organizations in India are global organizations, the findings of this research will have global implications.

# Gender Differences in Mendeley Readership Altmetrics

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Keywords: *Altmetrics, Bibliometrics, Gender Differences, Mendeley, Readership*

Several studies investigated gender differences regarding the number of publications and citations. Traditionally, citations have been used to evaluate research impact. However, as citations need time to accrue, altmetrics, which measures citations in social media, have been introduced. Thus, we examine whether there are gender differences in Mendeley readership altmetrics.

## 1. Relevance

The web has provided new opportunities for academics to disseminate their research results, and the impact of scientific publications can now be measured in social media (Wouters and Costas, 2012; Bar-Ilan and van der Weijden, 2015). Social web metrics, also called altmetrics, aim to go further in the analysis of scientific activities, e.g. by analyzing the impact of outputs in different formats (e.g. blogs, datasets, etc.), as opposed to the analysis of only journal papers (Costas, Zahedi, and Wouters, 2014). Given the democratic nature of the digital world, it is expected that the web will provide a sexually-neutral milieu, where both genders benefit from the increase in their recognition with regards to web citations (Kretschmer and Aguillo, 2005), event counts from Twitter, blogs, and profile views (Thelwall and Kousha, 2015). To best of our knowledge, this is among the first studies that investigate gender differences in relation to altmetrics.

## 2. Aims & Objectives

This study has two main objectives. The first is to examine the relationship between the number of readership counts and proportion of female authors per paper. Second, to investigate the relationship between gender composition of authorship teams (for which the proxy was male-male, female-female, male-female authorship teams) and the number of readerships received per paper.

## 3. Methods

The data set used in the study comprised 1007 articles in the field of Neuroscience indexed in the Web of Science database between 2009 and 2013, using stratified random sampling. For each paper, the gender of authors and the proportion of female authors per paper were determined. Gender composition of author teams was studied by examining whether male and female authors had the same gender collaborators in authorship teams (i.e. female-only teams, male-only teams, female-male teams). To get the Mendeley readership data, we used Webometric Analyst ([lexiurl.wlv.ac.uk](http://lexiurl.wlv.ac.uk)) to automatically extract Mendeley readership counts for the downloaded articles from WoS via the Mendeley API. The search was conducted on 11th of June 2015 using a query containing the title, authors, publication year and DOI.

## 4. Results

With regard to the first objective, the results indicated a weak negative correlation [ $r(1007) = -0.06$ ,  $p = 0.048$ ]. Regarding the second objective, the papers with the largest mean of readership counts were those written by male-male authorship teams (27.12), followed by female-female (24.24) and male-female (22.46). However, an analysis of variance (One-way ANOVA) showed no effect of gender composition of authorship teams on the number of readership counts received per paper, [ $F(2, 1004) = 1.747$ ,  $P = 0.175$ ].

## 5. Conclusions

This paper provides an insight into the research impact of female and male scholars in a social reference site, Mendeley. The results indicated a slight bias in the number of received readership per paper in favour of men. In other words, an increase in the proportion of female authors per paper was slightly correlated with a decrease in the number of readership counts received.

However, the gender composition of authorship teams did not show any bias in terms of Mendeley readership altmetrics. Further studies are needed to corroborate these conclusions.

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# Gender Lens Analysis: Peace Building Roles in Naga Armed Movement

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Keywords: *Gender, Peace Building, Agency*

Naga women's leadership roles in peace building have led to a redefinition of peace in negotiating with conflict. Addressing issues on gender inequality and unequal power relations transformed definition of peace and it was possible through Naga women's traditional roles as 'ambassadors of peace' during headhunting days.

## 1. Relevance

Gender roles in Peace building differs as men and women contribute and participate in peace processes differently. Gender lens analysis is important in understating peace building methods and experiences since positioning women through stereotypical gender roles may exist. Peace building work of women in Naga Armed movement is significant since traditionally during head hunting practice days of Naga community, women were known as 'ambassadors of peace' who acted as mediating agents during inter-village clashes and conflict. They were known as Phukreila and Demi and it was therefore a taboo to kill them since they were given significant position as trusted peace agents those days. It is through such traditional role as agents of peace, Naga women were able to negotiate spaces and use this tool as an effective means in addressing gender disparities and unequal power relations in present armed conflict.

## 2. Aims & Objectives

To examine peace building leadership roles as a process in which peace works of any particular group influences to accomplish an objective and directs in more inclusive and cohesive society can be analysed through gender perspective. One of the main aims in this study is to bring out how women's peace work addresses unequal power relations in property inheritance rights of women, unequal representation in village councils, equal reservation for women in state Legislature and Municipal Councils and equal representation in formal peace talks and settlement. Due to deeply embedded patriarchal and patrilineal social, economic and political structure of Naga society, the marginalised, sub-ordinated position and role of women in Naga society seem possible and viable to address only through women's agency as peace building agents which can act as a catalyst in addressing larger gender disparities (Banerjee, 2000)

## 3. Methods

Within the Naga Armed conflict, peace building work carried out by two main civil society groups namely the Naga Mother's Association (NMA) and Naga Hoho will be analysed. These two groups are the two most dominant peace building agent working in Nagaland. Naga Hoho being an all made member group and Naga Mother's Association as all female group makes gender roles in peace building even more distinguishable. The role of civil society as peace building agents in Naga Armed movement have greater mediating roles and they represent much more encompassing voices and experiences of the general public than formal peace agents. Interviews of leaders from both the group will be undertaken with un-structured open ended questions so as to allow interviewee space to reconsider key research questions and the flexibility to adjust questions considering time, location and emotional and political attachment of an individual from both the group

## 4. Results

Peace building role of Naga women's group like Naga Mother's Association (NMA) have produced a social consciousness in Naga society and has earned the title as 'iconic' and 'women of peace in South Asia'. The position validates women as making a difference in reaching on to bitterly divided armed faction and fostering reconciliation and healing with understanding that peaceful condition is the pre-requisite for any human development (Biswas & Thomas, 2006 ) patriarchal institutions kept women from formal peace processes, but NMA are playing a positive role and are articulating and putting across their views on peace with social justice, women's rights, economic rights and particularly democracy as its core agenda (Dutta, 2004 ) the relational association of women and peace as synonymous entity often may rather reflect a different implications in Naga society. For traditional leverage, peace activism have open up for women a recognised space in civil society (Manchanda, 2005)

## 5. Conclusions

The horizons of peace building work primarily in conflict zones needs revamping and a new road map that can redefine peace which encompasses the totality of women's needs and interests and put the accent on structural change towards justice and representatively in political decision making. And it is possible through constructive platforms like Gender Summit that can act as the adjoining link to integrate and intervene through exchange of ideas and deliberations. Exchange of deliberative discourses can redefine leadership roles through women's peace agency and in the process contest public spaces and for better

representation. Such contestations needs constructive reconsideration as all pervasive normative believe to essentialise women's peace roles primarily in conflict zones as an extension of women's private roles of care giver, nurturer may prevail. Naga women's leadership roles in directing it to more gender just and equal distribution of power relations in Naga society is needed

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# Questioning the Male-Mover / Female-Follower Model of Academic Mobility Patterns

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Keywords: *Careers, Academics, Mobility, Family*

The gender gap in geographical mobility is often seen as a contributing factor to the academic leaky pipeline. Family configurations and gender identities probably play a role in decisions about moving (or not) abroad, but the experience of transnational mobility can contribute to (re)structuring the gender dynamics amongst young researchers.

## 1. Relevance

Several studies have described the gendered character of academic mobility, and its role in maintaining the gender gap at the top of the academic hierarchy. However, few studies have described how male and female researchers personally experience pressures to be geographically mobile during the early stages of their academic careers, either by embracing or rejecting them; sometimes successively. Mobility decisions commonly affect not only the researcher but also his or her closest relatives. For this reason, our study explores how people articulate and negotiate the external incentives for broadening their horizons with considerations relative to their private lives.

A better understanding of this topic should be of a particular interest to people involved in higher education mobility policies, as well as to anyone trying to ensure that talented researchers have equal chances to fulfil their potential, regardless of their gender and family configuration.

## 2. Aims & Objectives

We seek to better understand the mechanisms underlying the differentiation of mobility practices amongst young researchers, particularly in relation to gender, social origin and family configurations at the time of the PhD.

We focus on people's motivations and personal experiences of transnational mobility relative to patterns of personal relationships, representations of academic excellence and of academic professional norms in a broader sense. We are also interested in better understanding how the family configurations of young researchers influence the mobility arrangements they adopt and in demonstrating how these personal arrangements are in turn influenced by the mobility experience.

## 3. Methods

The paper is based on the qualitative analysis of a sample of 65 semi-structured interviews conducted in Switzerland within two European research projects in 2013 and 2015. The cases have been selected to ensure a high level of diversity in terms of scientific fields, types of position occupied, age, gender and family arrangements. Our population includes single and married men and women, with or without children. We explore the career and mobility paths of young researchers working as postdoc or newly-tenured academics, but also those PhDs who decided to work in the non-academic public or private sector. A thematic and comparative approach enables us to describe the multiple dynamics at stake.

## 4. Results

Our study challenges the conventional wisdom, whereby the professional mobility of a male mover is made possible by the services of 'trailing wife'. Although this pattern existed, it wasn't dominant in our sample. Instead, we found a variety of gender dynamics. Thus, whilst the mobility of one partner does seem to require different forms of adaptation by the other (e.g. changing jobs, postponing a job application, reducing working hours) this holds true whether the 'mover' is male or female. Furthermore, the move itself may sometimes be more beneficial to the career of the 'follower' than to that of the initial 'mover', regardless of gender. Our analysis also allows us to identify the wide range of strategies adopted by mobile academics, such as weekly commuting from abroad, or officially 'living apart together'. However, even these apparently innovative practices can be accompanied by deep-seated conventional gender norms and practices.

## 5. Conclusions

The findings presented here are important for the audience of the Gender Summit because they question a number of ingrained beliefs about the geographical mobility patterns of male and female PhDs, and their influence on the under-representation of women at the higher levels of the academic career hierarchy. We show that women are no longer excluded from international mobility programmes, usually at post-doc level, but that bringing their practices closer to those historically associated with men is not enough to ensure increased gender equality at the beginning of an academic career path. Women's mobility patterns remain partly distinct from those of the majority of their male counterparts and they do not imply the same symbolic 'price-to-pay' in the short or medium term for the women concerned, or for their personal relationships.

# The role of the law as an instrument for gender equal recruitment

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*Keywords: recruitment, gender equality, appointment regulations*

The role of the law as an instrument for gender equality is contested. Based on an interdisciplinary legal & sociological approach, the paper analyses the influence of legal regulations on gender equality in appointment procedures. The main focus will lie on the analysis of appointment provisions, gender quota & policies.

## 1. Relevance

Legal regulations on gender equality, such as quotas, are considered a threat to excellence and the principle of meritocracy, but little research has been done to prove it (wrong).

## 2. Aims & Objectives

My main objective is to reconsider the power of legal regulations as an instrument to foster gender equality in higher education.

## 3. Methods

The analysis consists of a study on the appointment procedures in research institutions in Germany as well as on the evaluation of the recent trends in the laws on higher education in the 16 German Länder.

## 4. Results

The most important result is that the rhetoric of gender equality does not correspond to the actual level of implementation in the appointment procedures. As far as discrimination is concerned, there is evidence that men feel discriminated against because of the existence of gender equality regulations.

## 5. Conclusions

The impact of gender equality regulations and policies has to be considered more on the meso/micro-level in order to avoid resistance against them.



# Women in the Carbon Chain: Village Monitors in Rural Rajasthan Facilitating Environment Mitigation

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Keywords: *Gender Barriers, Identity, Leadership, Technology, Mitigation*

The study looks at ways in which women reinterpret notions of 'leadership' by participating in the planning, distribution and consumption of improved, efficient cookstoves in rural hamlets of Rajasthan, India. Using new firewood-saving technologies, the women are countering their local patriarchal settings by partaking in the global carbon trading project.

## 1. Relevance

With a per capita forest area of only 0.06 ha (one of the lowest in India), forest ecosystems of Rajasthan are characterized by arid, scanty vegetation. At present, nearly 61% of Rajasthan is covered in desert. The increased pressure from human and livestock population, besides indiscriminate exploitation of forest resources have been destroying living ecosystems.

Residing in this geographical framework, women from Bhil tribes engage in the tedious activity of firewood harvesting from forests to cook meals. Both, the act of 'cooking' as well as the area demarcated as 'kitchen' in a household are socio-culturally identified only with women (usually the wife). While cooking, the women have inadvertently been exposed to toxic emissions emitted from the cook stoves. These burnt carbon emissions are adding up globally. The 2010 Global Burden of Disease Report established that indoor air pollution from cook stoves is a primary cause of disease and death in South Asia.

## 2. Aims & Objectives

The study is anchored in the global debate on the need to mitigate black carbon emissions from indoor air pollution, and fuelled by the myriad perspectives of tribal, marginalized women, who are channeling their efforts at a hyper-local level. The women are appointed as 'Village Monitors' by Rajasthan-based producer company, Udaipur Urja. The credit-based financing model of the project involves distribution of the improved cook stoves at a subsidized rate to households. The role of the monitor is to distribute the stoves, create awareness about the hazards of black carbon, and monitor its usage in individual households. The study thus, looks at the ways in which the women leaders are looking at the improved cook stoves as a means to claim their own right to good health and livelihood: is it enabling them to bust patriarchal norms in a society where the women are otherwise barely seen and rarely heard?

## 3. Methods

Spanning 23 remote villages, the project covers more than 2,500 households. There are 20 local women, who are working as Monitors in their respective villages. Through in-depth interviews and focus group discussions, this paper will draw from their existing socio-economic and cultural backgrounds and challenges. The questions will be pointed at understanding the impact of their employability- as influencers and decision makers in the global carbon credit project- on their relationship with the village-folk in general, and their families in particular. In order to obtain a more nuanced understanding of their lived experiences, the researchers will accompany a select few monitors on their household visits. This will also enable casual interactions with some of the female consumers, thereby providing greater insights into the consumption of fuel-efficient technology. The researchers will also access the monitoring diaries in order to trace the general consumption pattern of the cooking stoves and responses generated.

## 4. Results

The study is currently in the process of analysis. However, data collected so far indicates that the village monitors are using this project on as a means and medium to tackle gender norms and practice in their own settings. The women monitors said that they had become household names in the village, and locals (including men) associated them with the cook stoves even when they were not on their monitoring visits. Moreover, some women also claimed that considering they were now financially contributing to the family's income, their respect and status in the household had also augmented.

For not having obtained any formal training in environmental studies, the monitors' drew from the experiences of their field visits to understand the implications of 'climate change' and 'global warming'.

## 5. Conclusions

The study aims to translate the understanding of 'climate change mitigation' from a global debate and policy into a hyper-local project and practice as seen through the lens of gender, health and livelihood. Even as the technology of improved efficient cook stoves is increasingly being used by marginalized communities cutting across geographies, very little work has been done on documenting its inter-relationship with the practice and performance of gender. It is a conscious attempt to understand the use of technology through

a sociological lens in order to initiate and further new dialogues. Moreover, this study shifts from the popular top-down approach of research; it is hinged completely on the everyday realities of women, who are a part of the process and implications.

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# Gender, Medical Regulation and Policy

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Keywords: *Gender, Medical Regulation, Policy, Gendered Labour, Revalidation*

The introduction of medical revalidation in the United Kingdom (UK) in 2012 marked a significant change in the regulation of the medical profession. An understanding of the gendered impact of revalidation is needed, especially given the significant horizontal and vertical gender segregation in the medical profession.

## 1. Relevance

In 2012 the General Medical Council introduced medical revalidation in the UK marking a significant change to medical regulation [1]. To maintain their license doctors are required to regularly demonstrate that they are up to date and fit to practice in their chosen field by bringing evidence of continuous professional development (CPD), peer and patient feedback, and significant events to their annual appraisal. It is a policy that affects all licensed doctors in the UK, 45% of whom are women. This is a number likely to increase as women make up 55% of medical students. Despite their presence in numbers, there is significant gender segregation both horizontally and vertically within the medical profession, which is borne out in our data [2]. Though this gender segregation in the medical profession has been acknowledged, revalidation as a policy did not and does not take gender into consideration in its design and implementation.

## 2. Aims & Objectives

As part of the UMbRELLA research collaboration investigating medical revalidation in the UK, this study aims to analyse the differences in gendered experiences of the policy and assess the potential impact on the UK medical profession and workforce.

## 3. Methods

An online survey sent to all doctors licensed to practise in the UK, except those in specialist training, conducted between June and August 2015.

## 4. Results

Revalidation has increased workload and requires the same CPD evidence regardless of whether the doctor is full or part time. These results demonstrate gendered differences in doctors' experiences of medical revalidation in terms of the frequency and reason for career breaks, reasons for non-engagement with the policy, and rates and reasons for delays in revalidation because of insufficient evidence, or on-going human resource or disciplinary procedures.

## 5. Conclusions

These findings illustrate the impact of gender on doctors' experiences of revalidation in the UK medical profession. Part-time work and gendered labour means meeting the requirements of revalidation is more difficult for some women, in comparison to their male counterparts.

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# Improving Gender-Role Attitudes of Japanese Physicians in Academic Hospitals

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Keywords: *Gender-Role Attitudes, Japanese Physicians, Balancing Family and Career, Underrepresentation In High Positions Of Female, Workplace Diversity*

This study investigated factors related to openness towards improving gender-role attitudes of Japanese physicians in academic hospitals. Of all factors, providing career education on life events to young physicians was considered most effective in improving gender-role attitudes in the clinical field.

## 1. Relevance

More female physicians are participating at the workplace in Japan. However, 70 % of female physicians in Japan forgo their promising careers because of difficulties in balancing work and childrearing. This low retention among female physicians leads to their underrepresentation in high positions and academic settings as well as an unbalanced gender distribution in clinical settings [1, 2]. Furthermore, with the Japanese population aging and the number of Japanese physicians per 1,000 population well below other developed countries' average, but patient visits being two times higher, Japan needs its female physicians to practice medicine. Policies are needed to improve gender-role attitudes and eliminate gender barriers that form obstacles to female physicians who continue working as well as rearing children.

## 2. Aims & Objectives

This study investigated factors related to openness towards improving gender-role attitudes of Japanese physicians in academic hospitals. Identifying those factors could promote improvements in the clinical field's gender-role attitudes and workplace diversity.

## 3. Methods

A cross-sectional, self-administered questionnaire with 34 items was distributed to medical school alumni of Tokyo Medical and Dental University, Tokyo, Japan, in 2011. A sample of 2,159 individuals was assembled, and 536 returned the questionnaire. Currently unemployed physicians and graduate students were excluded from the study. Thus, study participants (N=454) were alumni who had graduated from the university during the 30 years. The primary outcome measures were "openness towards improving gender-role attitudes in academic hospitals", "openness towards providing career education to young physicians in academic hospitals", "openness towards extending work-term appointments for childrearing in academic hospitals", and "openness towards optimizing adequate work hours in academic hospitals".

## 4. Results

Of 454 participants, 72% of female physicians and 54.9% of male physicians agreed with improving "gender-role attitudes" in academic hospitals. Chi-square tests were performed for demographic characteristic with "openness towards improving gender-role attitudes in academic hospitals". The variables that showed statistical significance were "sex", "not having children", "providing career education on life events to young physicians", "extending work-term appointments for childrearing in academic hospitals", and "optimizing adequate work hours in academic hospitals". Logistic regression was performed stratified by sex. Both female and male physicians (Odds Ratio: 4.957, 3.057, respectively) who agreed with providing career education on life events to young physicians were more likely to show greater openness towards improving gender role attitudes ( $p < 0.000$ ) than those who disagreed. Furthermore, male physicians who agreed with optimizing adequate work hours were 3.624 times more likely to show greater openness towards improving gender-role attitudes in academic hospitals ( $p < 0.002$ ) than those who disagreed.

## 5. Conclusions

Of all factors, providing career education on life events to young physicians was considered most effective in improving gender-role attitudes in the clinical field. Identifying those factors related to openness towards improving gender-role attitudes of Japanese physicians in academic hospitals could promote improvements in the clinical field's gender-role attitudes and workplace diversity.

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# Beyond Dimorphism: Intersex Persons and a Non-Binary Conceptualization of Sex-Gender

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Keywords: *Intersex Persons, Transgender Persons, Non-Binary Persons, New Concept Of Sex-Gender, Third Sex-Gender*

Medical practitioners have problems with gender assignment of intersex/DSD newborns, non-binary persons suffer from being forced to choose between two genders when their self-identify is neither male nor female. A third gender category in the law is needed.

## 1. Relevance

This work brings the arguments against dimorphism and develops the structure of a new concept of sex-gender. A new concept is needed to solve the medical problems with sex assignment for intersex/DSD newborns. It is also needed to solve the problems of non-binary persons who are legally forced to declare as male or female when they feel as neither a man nor a woman.

## 2. Aims & Objectives

The aim is to show that sex-gender dimorphism is inadequate because of the existence of intersex and non-binary people. The current medical and legal situation is harmful to these groups. They are organized in Intersex Societies and Non-Binary movements. The work argues for introducing a third category of sex-gender and presents a new non-binary, flexible and processual concept of sex-gender.

## 3. Methods

The work collects medical data about intersex (DSD) newborns [1], psychological data about their future life after surgical correction of genitalia in their infancy [2], data about social movements of intersex [3] and non-binary people [4], [5]. After collecting the data, I develop an argument against the binary gender division of people and develop a theoretical answer for the situation by presenting a structure of a new concept of sex-gender.

## 4. Results

The explanation of the existence of intersex and non-binary people comes from ontology of process where the human body and its sex-gender is taken as a process rather than as materialistically static. First of all, I describe the process as comprising of many layers and focus my attention on the 'reproduction layer', because reproductive function has been central in reifying sexed and gendered dimorphism. Secondly, I develop a non-binary and processual concept of sex-gender. The concept contains many levels with male, female, and non-binary spectra on every level. Lastly, I conclude that the non-binary spectrum, located in the space where the spectra of maleness and femaleness overlap, is the third category for people who are in between, both or neither.

## 5. Conclusions

My results are important for medical practitioners, social scientists, lawmakers, politicians, and the general public to better understand gender minorities, to produce less harmful laws, to arrange better medical and psychological treatments, to demythologize sex dimorphism.

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# COMPENDIUM

# Gender as a Continuum - What We Are Speaking About When We Are Speaking About Gender?

Prof Christel Baltes-Löhr<sup>1</sup>

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Keywords: *Theoretical Framework For "Gender"; Plurality Of Gender; Gender Equality*

Gender as continuum will be defined with four dimensions: physical (body: sex), psychological (emotion/affect: identity), social (behavior: gender), and sexual (desire: sexual orientation). This concept opens the possibility to discuss femininity, masculinity as well as inter- and transgender of even importance - as equal.

## 1. Relevance

In order to overcome existing dualistic and heteronormative concepts of gender, new theoretical frameworks are needed, bringing together the insights of the last decades of feminist, gender and queer theories.

The concept "Gender as a continuum" is based on the assumption that the borders between the gender related categories become more and more porous and permeable. Such a perspective can open the door for a better theoretical understanding for the existing plurality of genders.

## 2. Aims & Objectives

Developing a new concept of gender in order to explain systematically the existing plurality of gender is to be considered as the main aim of this idea. The concept of Gender as Continuum allows to overcome traditional borders between femininity and masculinity by not considering inter- and transgender additional gender in-between the two "main" gender female and male but as equal ones.

## 3. Methods

Starting from the reflection of what can be considered as femininity and masculinity and in a critical perspective to categorical oriented schemes which are dividing the word into a bipolar setting, the theoretical conception of gender as continuum was developed in order to overcome this borders.

## 4. Results

Gender as continuum is based on the four dimensions:

- physical: biomorphological, genital, chromosomal, gonadal and hormonal characteristics (corporal or also physical gender);
- psychological: emotions and cognition; describing the feeling and self-perception of gender; oscillating between attribution and appropriation; turns into self-designations which more or less agree with the definitions by others (psychological gender);
- social: gender roles describing a person's behaviour as belonging to a gender; this role behaviour includes facial expressions, gestures, vocal volume, body comporment and societal presence (social gender),
- sexual: sexual desire/sexual orientation such as monosexual, asexual, bisexual, heterosexual, pansexual, but also different sexual practices and relational and institutionalized forms of sexual gender (sexual gender).

A person's gender can comprise the four dimensions and is considered alterable, poly polar, plural and intersectional during the whole life and differing between cultures and time periods.

## 5. Conclusions

Within the concept of "Gender as a Continuum" the logic of the 'both - and' is applied; normative patterns emerging in the construction process are considered open and reversible and make no universalistic claims to validity. Such a new theoretical framework could open the discussions toward a more borderless conception of genders by reflecting the existing plurality. Hereby discussions and conclusions of the Gender Summit could be enriched by such a broader theoretical framework.

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# Gender, Policy and Financial Inclusion

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Keywords: *Financial Inclusion, Gender Analysis, Policy Design, Policy Agendas*

This study looks at the efforts of policymakers and financial regulators in different countries who are fine-tuning an enabling environment for the financial inclusion of women. Evidence shows that policies to increase female financial inclusion need to be country-specific, based on each country's gender gap and unique challenges and opportunities.

## 1. Relevance

The importance of expanding women's financial inclusion is receiving an increasing amount of attention. Recent studies provides strong evidence that when women—50% of the world's population—participate in the financial system, there are important benefits in terms of greater equality, societal well-being and economic growth. Yet, despite significant advances in financial inclusion for both men and women between 2011 and 2014, women still lag behind in access and usage of financial products and services.

## 2. Aims & Objectives

This paper analyzes the significance of women's financial inclusion and lays out effective country-level policies to promote female financial inclusion. Seven policy measures are particularly examined: (1) explicit policy objectives and quantitative targets, (2) gender-disaggregated data collection and research, (3) reforms to legal and regulatory frameworks, (4) development of financial infrastructure, (5) refined and strengthened financial consumer protection, (6) financial education and financial literacy programs, and (7) legislation and regulations, addressing social norms that constrain women's financial inclusion.

## 3. Methods

This research assesses current thinking and policies promoting women's financial inclusion based on recent studies in this field, interviews with renowned policymakers and thought leaders, and an analysis of 12 national financial inclusion strategies released over the last four years by members of the Alliance for Financial Inclusion (AFI).

## 4. Results

Based on my research and analysis, there are examples of gender being integrated in national financial inclusion strategies, but overall, the integration of the objective of women's financial inclusion (and resulting policies) is not widespread. However, improvement is being made in five key policy areas (out of the seven analyzed in this paper), which are gaining momentum and producing good examples of sound practice.

## 5. Conclusions

Across the board, there seems to be room for changes in both international and national policy frameworks to close the financial inclusion gender gap. Only a few national strategies have female financial inclusion as an explicit goal. Framing women's financial inclusion as a fundamental issue and emphasizing it as an objective is an important starting point for addressing more specific, technical issues. It is not just policymakers who have a role in tackling this issue, however. The private sector, donor community and global organizations all play a crucial role in building a more prosperous world for women through true financial inclusion.



# 3-Lingual Sex-Gender Knowledge with Anti-Bias In Canada & Germany

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Keywords: Anti-Bias, Human Rights, language

While teaching in the province of Québec at a French university, an English college and at universities in Germany, I applied the anti-bias approach to teach Human Rights and sex-gender with respect to diversity aspects like language, culture-ethnic background. The process was inter-active, self-reflective and empathy promoting.

## 1. Relevance

Working and teaching in different countries requires profound understanding of the concept and theories of sex-gender as a global social and cultural construct in the working languages German, French and English. I have found out that the meaning of the terms may vary from one language to the other, and that there exist also cultural-ethnic aspects that are specific for one country, e.g. the term 'bi-spiritual' for Trans\* First Nations persons in Canada. Both countries still have patriarchal societies, with gender-based discrimination towards women and persons of other genders. To prevent discrimination, not only theoretical knowledge has to be provided in the relevant language. Further an anti-discrimination approach is needed where people can develop empathy and learn non-discriminating behavior. The anti-bias approach, created in the US, was used as transmitter for knowledge and behaviour. It had to be adapted to the Québec context, where literature did not exist in French.

## 2. Aims & Objectives

The key goals were to teach international Human Rights standards about sex-gender, adapted to the specific national context through the anti-bias approach. Through my teaching experience in Germany, I had already developed course material in German. To adapt it for Québec, some exercises could be found online in English and French. The anti-bias approach as anti-discrimination concept was instead not yet introduced to the French academic field, because literature could only be found either in English or German. The objective was to adapt the anti-bias concept to the scientific environment in French. Further, I wanted to achieve, while applying anti-bias, that the capacity of developing empathy and self-reflection are abilities of each human being overcoming language, cultural-ethnic or other boundaries.

## 3. Methods

The applied method is the anti-bias-concept. The word 'bias' means prejudice. The aim is to create balance, out of an inequality based on one-sidedness and bias, and to gradually reduce discrimination. It is one of the most inclusive approaches within the anti-discriminatory field of education as it includes the individual and the social level. Anti-bias workshops are an intensive experience-orientated examination of dominance and discrimination and refer to a lifelong process. They aim on the un-learning of oppressive and discriminating forms of communication and interaction. The approach assumes that everyone has prejudices. This is based on the consideration that prejudices and discriminations are not individual misjudgements, but institutionalized in society as ideologies, which are learned by the individuals. The behaviour based on those prejudices can be un-learned, and institutionalized oppressive ideologies can be discovered and analysed. Anti-bias aims to bring into consciousness those various dimensions of discrimination.

## 4. Results

I found out while teaching in both countries that Human Rights with sex-gender related aspects have so far not been an element of the curriculum. The principle of non-discrimination based on sex-gender is of particular importance in this regard but also a central principle of Human Rights. The core finding in both countries, was definitely, while doing interactive exercises, that prejudices and stereotypes could be unveiled. Further my students and me developed exercises for the French Québec context, e.g. to teach the summer camp animators about sex-gender and to promote awareness of sex-gender stereotypes in the education sector. An exercise was used with the name 'gender puzzle'. Here a variety of terms had to be explained bilingually and to discuss the different meanings used in the national context, e.g. 'intersexué\_e - intersexuel\_le' in French and 'intersex' in English.

## 5. Conclusions

Language is an important aspect to prevent discrimination. A lot of effort had been made to develop gender-neutral language in each country. Besides a gender-neutral language there is still confusion about the used terms due to translation, misperception or national specific aspects. It is also important to demonstrate that some literature can only be found in one language, e.g. English. This can lead in an education system with

French and English universities in the province like Québec to a lack of literature in a specific field. Moreover a core conclusion is, that the development of empathy, respect and tolerance can be taught very effectively with interactive and self-reflective exercises where emotions and needs of the individual have priority. It is necessary to not only teach mere theory about sex-gender, but to combine it with approaches like anti-bias where people can feel that it addresses themselves and every human being.

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# Patriarchy 2.0: Female Talent Retention in ICT

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Keywords: *ICT, Gender, STEM, Employment, Patriarchy 2.0*

Society is increasingly digitized and ICT companies define our future. Their decisions impact the way we communicate, do business, manage cities as well as our lifestyle. However, women are underrepresented in ICT companies and even more so at decision-making roles. Are women participating in the definition of our future world?

## 1. Relevance

Society is increasingly digitized and ICT companies define our future. Their decisions impact the way we communicate, do business, manage cities as well as our lifestyle. However, women are underrepresented in ICT companies and even more so at decision-making roles. Are women participating in the definition of our future world? The structures of patriarchy have managed to settle down comfortably in the digital age. Sociologist Judy Wajcman described as naive the initial feminist movement in relation to technology and the possibilities offered by a world without identities, neutral and yet to be build. Instead, the patriarchal system has reproduced comfortably in that other virtual world, hierarchies and privileges are perpetuated and invisibilize women. Within the digital context, breaking with established structures is not a utopia; it is necessary to promote the participation of women in technical careers and to remove barriers to access decision-making positions.

## 2. Aims & Objectives

The aim is to reveal the underlying barriers of female talent in ICT organisations. Understanding the real barriers women face will help ICT companies overcome the lack of female representation in decision taking roles.

## 3. Methods

There is a vast literature concerning quantitative methods, as well as qualitative (mostly based in semi-structured interviews), yet there is a lack of in-depth interview and discourse theory analysis. The research is mainly centred in these methods that will hopefully underline the factor that lay underneath. 24 men and women, of 15 years work experience and STEM career. Selected for such research, company is Anglo-Saxon origin, with its headquarters in the United States and more than 350,000 employees worldwide. Established in Spain since 1965, it has 9 offices in the territory and with a turnover of 823 million euros in 2015. It has 10,000 employees and employees, of which 87% have advanced degrees. The organization focuses its business in computer services and business consulting and outsourcing services. Currently, the Executive Committee has a woman, representing X%. Women Managing Directors account for 9% and middle management levels by 25%.

## 4. Results

While research has not concluded, some first results explain the low presence of women in the ICT sector. According to research, women are still intruders in a male-dominated workplace. A corporate world that reflects the power structures of patriarchy, which grants privileges to men - in the form of opportunities, power, salary, type of contract, participation in decision making, among others - and makes women invisible. There are several factors that influence and that can be identified: the management of opportunities and power, tokenism, the lack of critical mass, the "men's club", unconscious biases and the organizational culture.

## 5. Conclusions

Based on the research findings, strategies for retention of female talent in the ICT sector have failed to date, in general. Solutions based on individual support models must give way to solutions based on models of structural change. The problem does not lie in the departments of Human Resources, Diversity and Corporate Social Responsibility of organisations; the problem is inherent in the organization and especially its organizational culture. The values and beliefs advocated by the organization are incompatible with the alleged strategy of retention of female talent and equal opportunities. The organizational culture promotes a single measure and model, men, as a reference of success in the organization.

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