# Abstract Compendium


***From Ideas to Markets: Excellence in mainstreaming gender into research, innovation, and policy***

Quality Research and Innovation through Equality
30 June - 1 July 2014, Brussels

Abstract Compendium: Gender Summit 4 EU 2014

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## SCIENTIFIC COMMITTEE

## INTRODUCTION: FROM GENDER EQUALITY TO GENDER BALANCE AND SEX/GENDER DIVERSITY

Terminology, concepts and focus are changing in the field of gender. The lesson learnt is that in spite of gender equality rights in place, gender balance is still poor, especially in leading and influential senior researcher positions (1). Even when 59% of EU graduate students were female (2010), and the share of women graduating with PhD was 46%, in EU-27 only 33% of researchers were women, just 15% were heads of higher education (HEI) institutions, and only 10% were university rectors. Since men and women have the same research potential, this is not only unfair and un-ethical, but a large-scale waste of talent. There seems to be ”sticky floors” and invisible “glass ceilings” preventing the career development of women (2). Attention has therefore moved in the direction of identifying which structural, institutional and cultural changes are needed to improve gender balance in research (3). In addition, there is increasing demand to include sex/gender issues in research questions and content across fields to reduce male gender bias. Knowledge on sex/gender differences may influence how challenges should be tackled, not only in medicine, to ensure equal benefit of research and innovation for women and men (4, 5).

Interestingly, increasing evidence from such studies indicates that diversity of research groups, including sex/gender balance, may have positive influence on team performance and scientific quality (cf below). This gives the traditional equality/fairness/ethics arguments for ensuring gender balance an additional dimension: gender balance and diversity as means to enhance scientific quality. This may indeed accelerate gender balance - few people are against excellence. Notably, Science Europe has recently established a Working Group on Gender and Diversity (5). It also increases interest in identifying sex/gender differences, making such studies less “touchy”. The programme of the 4th Gender Summit, like previous events, helps demonstrate the many areas and levels of inquiry where addressing sex/gender differences contributes to better understanding of the phenomena studied.

**Presence and effects of sex/gender differences – examples from the peer reviewed research literature and recent reports**

An analysis of bibliometric studies in *www.pubmed.gov*, and Google reveals a variety of insights into sex/gender differences as a scientific phenomenon:

Scientific quality: In a controlled study of around 2000 publications within a certain research area (ecology) gender-heterogenous research teams were cited 34% more times than gender-uniform teams, indicating higher scientific quality by gender-diverse groups (6).

Group performance: Gender-balanced teams of two to five people showed a "collective intelligence factor" (c-factor) not strongly correlated with average group intelligence but with the proportion of females in the group (7). Companies with high share of women in senior management teams tend to show better business performance (8, 9). Improved gender balance in research teams can have positive effects on scientific productivity and quality, most likely partly by increasing heterogeneity of ideas leading to new results, partly by improving group dynamics and performance (10).

Cognitive profiles: Since the Binet-Simon Intelligence Test (1905), sex differences have been documented for many cognitive ability measures. The later revisions of the Stanford-Binet

Intelligence Scale ensured equal mean IQ levels for boys and girls by eliminating individual scales in which large gender differences were found (11). Mathematics and reading: Large US student samples studied over decades show that by age 13 a male advantage was found in mathematical reasoning, especially pronounced (13:1) at the highest end of the distribution (12). PISA data: Across-nations 10 years PISA data for 1.5 million 15-year olds in 75 countries showed that boys on average scored higher than girls in mathematics. Interestingly, this was most expressed at advanced levels, in line with the above US data. However, the average female advantage in reading was three times as large as the average male advantage in mathematics (13). Mental spatial rotation shows large male advantage both for 2D and 3D rotation. Female advantages include verbal abilities, word generation, verbal memory, verbal fluency and story recall (14, 15).

Brain anatomy and function: Modern imaging techniques (e.g. fMRI, PET, MEG, ERP) show sex differences in brain structure and function, across populations, related to corresponding differences in cognitive styles (16).

Prevalence and development of disease show sex differences in psychiatric and neurologic disease, including Alzheimer, attention deficit disorder, autism, fibromyalgia, multiple sclerosis, post-traumatic stress disorder (PTSD), anxiety, schizophrenia, stroke, eating disorders (14, 15, 17). Autoimmune disease shows increased female response with female-to-male frequencies up to 10:1 (cf 18 Orstavik, this conference). Cancer risk/incidence – human data: Excluding genital and breast cancer, data for the period 1960-2002 in 7.6 million women and 7.1 million men showed a significantly higher incidence rate for men in 32 of 35 types of cancer, including 13 cancers not related to smoking, alcohol and certain occupational exposures. Sex disparities were >2-fold for 15 sites/organs and >4-fold for 5 sites/organs (19). Animal data: 68 of 278 chemical cancer-agents induced cancer tumors only in males (20). This shows that disease mechanisms may be different in females and males, which may imply differences in optimal treatment and prevention strategies.

**Conclusion:** Thus, to improve gender balance, both for fairness and ethical reason, and for making better use of (senior) female researchers' potential, there is still a need for structural, institutional and cultural change. Integrating the sex/gender dimension in research design and content across fields is necessary to reduce male bias in results and identify sex/gender differences that may optimize strategies of action, including composition of high-performance teams and research groups. The 4th Gender Summit addresses these issues and this effort will continue in future summits.

H.M. Borchgrevink, The Research Council of Norway (RCN) – retired

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# ABSTRACTS SELECTED FOR PRESENTATION IN THE PLENARY

# Gender and Innovation

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*Keywords: patents, innovation, productivity,gender.*

**1. Relevance:**

The impact of women's patents on companies productivity and profitability is insufficiently investigated.

**2. Aims & Objectives:**

Traditional research on gender differences in patent activity focuses on explaining the causes underlying these differences. Some authors stress the potential for gender stereotypes to impact on the decision of women of obtaining science degrees. Some authors focus on the role of organization of scientist's work settings in explaining gender differences in patent activity. Differently from the traditional research, we analyse the role of female inventors in the Italian innovation process by focusing instead on the impact that women innovation may have on firms' productivity and profitability. The research aims to measure the impact of innovation, measured by patents in the period 2004-2008, on the companies profitability and productivity in the period 2009-2011.

**3. Methods:**

To test our hypothesis we use two different sources of database: 1) Aida Bureau Van Dijk dataset provides all the Balance Sheets for the 131 most innovative Italian manufacturing and service companies during the period 2004-2011.

2) the European patent Office Kites-Bocconi Dataset provides detailed information on the patent activity of European firms.

Preliminary to the analysis, we matched the two databases in order of having full correspondence among patents, companies balance sheets and inventors. In the first step, we perform robust cross section analysis. In the second step, we take into account the longitudinal nature of the data. We estimate several models by considering both different dependent variables and specifications. As dependent variables we consider the labour productivity and the following profitability indicators: ROE, ROI, ROA, ROS, EBIt/sales.

**4. Results:**

The principal results show that the share of women in patents team is significant and positive in explaining both companies labour productivity and profitability. Moreover, we show that the positive impact of the share of women in patent team on the profitability/productivity diminishes as the share of women increases. This evidence stresses the fact that the best way of increasing companies profitability is to rely on gender balance patent team.

**5. Conclusions:**

Supporting women participation to patenting activity could lead to sizeable economic advantages. Moreover, our research emphasizes the positive implications of a coordination of women and men in the patents team.

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# How to measure progress towards gender equality?

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*Keywords: comparative research, international comparisons, methodology, research policy, indexes*

This paper is based on the experience of research in EU-funded projects about gender and science over the last ten years and present epistemological reflections on the creation of indicators and indexes. Measuring tools are experimented in the current GenderTime project.

Translating the real world into numbers is a key task for providing policy makers and governments with appropriate monitoring tools. Defining the indicators is not only a technical issue, but also implies philosophical considerations about policy making. Moreover, replacing a description in words by a description in numbers creates a new social reality (Desrosières 2008). It also produces new possibilities for comparison through the commensuration process (Espeland & Stevens 1998). New spaces for equivalence and comparison are created, where ranking and benchmarking become possible. The effects of such equivalence making may be the idea of equal opportunities between the different terms; it may be also competition, ranking and the requirement to achieve a given norm. Statistical data is therefore used as evidence and as an instrument of governance (Porter 1995).

Such a perspective must be challenged at different levels. At the level of the construction of classifications, translation into numbers does not construct a reflection of the world; it transforms the world and reconfigures it a different way. This process requires discussion and consensus on adopted conventions (Desrosières 2008).

GenderTime project (2012-2016) has collected various sets of data, two sets are examined here: a multiple choice staff cultural survey and quantitative data about human ressources (positions, salaries, status, disciplines, etc.).

Expected final output is common measurement tools to monitor gender equality policies. At the time of the gender summit, tools are experimented and tested, and we will discuss their relevance.

Measuring tools to assess gender equality progress are essential tools for research policy making, one of GenderTime objectives is to provide common measurement standards to improve gender equality governance at local level and to allow cross-national comparisons et the same time, which is a challenge due to the diversity of the academic landscape.

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# Male cancer survivors' barriers towards participation in cancer rehabilitation - a qualitative study

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*Keywords: Gender, Sex, Men, Cancer, Rehabilitation*

## 1. Relevance:

Men develop and die sooner from cancer than women.
Men have rehabilitation needs, but are underrepresented in current cancer rehabilitation programs.
Cancer survivors experience unmet needs for rehabilitation.
Lack of male cancer rehabilitation can result in long-term sequelae and consequences.

## 2. Aims & Objectives:

To describe male cancer survivors' perspectives on their lack of participation in cancer rehabilitation and to establish a specific research-based strategy for male cancer survivors in rehabilitation.

## 3. Methods:

The study was designed as a qualitative field study. The theoretical framework is Symbolic Interactionism and the methodology Interpretive Description.
Data were generated in three oncology departments and three municipalities in Denmark and include participant observation, semi-structured and ad hoc interviews and documents.
The informants are 43 male cancer survivors with an average age of 64 and representing nine varies types of cancer.

## 4. Results:

The analysis revealed 2 overarching categories and 6 relating categorical themes.
Overarching categories:
'Fear of loosing control' and 'Striving for normality'

Categorical themes symbolizing what rehabilitation would enforce:
'Isolation and independence'
'Affected manliness'
'Confrontation with death'

Categorical themes representing what rehabilitation would hinder:
'Responsibility and usefulness'
'Solidarity and fellowship by choice'
'Forget and move on'

The findings offer insight into men's perspectives on participation in cancer rehabilitation and highlights the interrelationship between the two overarching categories and the 6 themes.

## 5. Conclusions:

The findings are substantial to consider in relation to practice implications for planning and executing cancer rehabilitation for male cancer survivors.

# A systematic approach to integrate gender dimensions and perspectives into a newly developed medical curriculum

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*Keywords: Gender, Gender Mainstreaming in Medicine, Gender Medicine, Curriculum Development, Medical Education*

**1. Relevance**

Gender and sex aspects are not yet systematically integrated into medical curricula. In order to improve and guarantee a high quality of medical care for men and women, future doctors need to have adequate knowledge, practical and communicative skills on gender differences as far as the development, diagnosis and therapy of diseases is concerned and be able to consider gender dimensions in their research.

**2. Aims and Objectives:**

Along with the introduction of a modular outcome-based, interdisciplinary medical curriculum in 2010 Charité - Universitätsmedizin Berlin declared the goal to systematically integrate gender and sex aspects into the new medical curriculum including the Scientific Approaches Modules. Another objective was to improve the learning and study environment with focus on students with children and improve the compatibility of family, studies and work for students and university teachers.

**3. Methods:**

A gender change agent was directly appointed into the curriculum development team to ensure direct interactions with the key players of the curricular change process of the faculty. The change agent implemented and followed a systematic approach. Basis was a wide-ranging research on potential sex and gender-related knowledge, skills and attitudes to be integrated in a specific module theme to be planned. During the faculty-wide module planning process, the change agent constantly participated in the planning sessions and consulted with faculty members involved. In addition, a close cooperation with the Equal Opportunities Officer, the office of family affairs and the representatives of the students with children was established with the goal to improve the study and learning environment for students with children.

**4. Results:**

Compulsory gender-related courses, gender-related knowledge and skills and gender-sensitive language were widely implemented throughout the curriculum including the Scientific Approaches Modules in all teaching formats ranging from lectures and seminars to clinical skills courses, problem-based learning, communication trainings and students' assessment and feedback. Furthermore, it was achieved that family-compatible course schedules were available and students with children were supported by childcare facilities.

**5. Conclusions:**

A systematic approach and the appointment of a gender change agent can be key to successfully integrate gender dimensions and perspectives into a new medical curriculum. The change agent played a dual role. First, to identify sex and gender issues relevant to the curriculum, place them in the appropriate module session and provide counseling to module planners. Second, to build a network of stakeholders such as the Deans office, sex and gender issue researchers and clinicians, equal opportunities officer, the office of Family Affairs and students with children.

# Guide to indicators for measuring gender inequalities in health and its determinants in the Spanish context

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**1. Relevance:**
In Andalusia (Spain), we did not have a gender-sensitive indicators system of health disaggregated at local level, to enable us to monitor the situation of gender equality in health and its evolution over the time. This guide of indicators system is focused to fill this gap, providing a useful tool for the research and for the design of policies aimed at reducing gender inequalities in health.

**2. Aims & Objectives:**
To develop a system of gender- sensitive indicators, disaggregated at the local level, to monitor gender inequalities in health and its social determinants. The first specific objective was to develop a detailed list with the most relevant indicators to measure these inequalities, identifying all necessary data in our context. The second objective was to provide a list of prioritized indicators and ranked according to their gender sensitivity and availability.

**3. Methods:**
An expert consultation was made by the Delphi Technique, in order to reach consensus on the most appropriate system of indicators to measure gender inequalities in health and its social determinants. We selected 20 expert people from different areas of health, welfare, research on gender inequalities and citizenship, from national and international level. By a questionnaire designed ad hoc, two rounds of talks were held on the basis of a shortlist of topics and dimensions. In the first round we asked them to validate the structure of topics and dimensions and to propose indicators. In the second one, we asked them to prioritize the proposed indicators based on their gender sensitivity and availability. We analyzed the scores received for each indicator by the arithmetic mean.

**4. Results:**
The “Guide to indicators for measuring gender inequalities in health and its determinants in the Spanish context”, resulting of this process, provides a proposal of a system of indicators to measure these inequalities, through four specific products: 1 ) Scheme with the structure of dimensions, 2) Full list of proposed indicators to measure gender inequalities in health and its social determinants at local level 3) List of prioritized indicators; 4) List of prioritized indicators ranked by sensitivity and availability of sources for obtaining data locally. All products are classified into the following dimensions: health, structural determinants, intermediate determinants, empowerment and decision making.

**5. Conclusions:**
This guide provide an useful tool for planning research projects, as well as policies and actions aimed at reducing inequalities in health, adapted to the needs of each specific context and time. The methodology can be replicated in other national and international contexts.

# Reanalyzing sex/gender specific portion sizes of dish items for a dish-based, semi-quantitative FFQ for Korean adults

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*Keywords: analyzing with sex and gender, portion size, semi-quantitative FFQ*

**1. Relevance:**
The development of valid dietary assessment tools is important to understand diet-disease relationship since diet is one of the critical factors related to non-communicable diseases including cancer. A dish-based, semi-quantitative food frequency questionnaire (FFQ), which is one of dietary assessment tools, measures usual intake by asking average intake frequencies and portion sizes of specific dish items during the reference period. Previous studies have reported sex/gender differences in dietary intake, as well as in the way to report frequencies and amounts of dish items consumed on the FFQ. However, sex/gender factors are rarely considered when determining the portion sizes for the FFQ.

**2. Aims & Objectives:**
For accurate estimation of nutrient intake by using the dish-based, semi-quantitative FFQ developed for Korean diet and cancer research, this study aimed to reanalyze sex/gender specific portion size of each dish item in the FFQ.

**3. Methods:**
Sex/gender specific portion size of each dish item were recalculated using the 24 hour recall data from among 6,490 subjects (46.1% men and 53.9% women) aged over 30 years in Korean national dietary monitoring data, which were same datasets used in development of the dish-based, semi-quantitative FFQ. The sex/gender specific portion size was calculated as the median intake of each food item by each sex group. Determining the portion size of the items with more than one dish, the weighted median intakes were recalculated based on the intake frequency of each dish considering sex/gender. The energy and nutrients content were also recalculated according to sex/gender specific portion size.

**4. Results:**
Among 112 dish items of the semi-quantitative FFQ, the portion sizes of 93 dish items (83%) were different between men and women with the differences in the energy and nutrients content. The dish item with the largest difference in portion size by sex/gender was ‘Deep-fried sea mustard (413%)’. The original portion size and its energy content of this dish item was 10.0g and 54kcal, whereas the sex/gender specific were the 40.0g and 216kcal for men and 7.8g and 39.5kcal for women, respectively. After applying sex/gender specific weights, the portion sizes of all dish items with more than one dish were different between men and women.

**5. Conclusions:**
The semi-quantitative FFQ using sex/gender specific portion size could estimate accurate nutrient intake for men and women. These results suggest that considering sex/gender factors contributes to improving validity in the development of nutritional assessment tools.

# The challenges and potentials of gendered innovation projects: an interdisciplinary perspective

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*Keywords: gender in research, interdisciplinary challenges, success factors, pitfalls*

Currently we are conducting two gender in research projects at JOANNEUM RESEARCH in the fields of sensortextiles and renal replacement therapy. In both projects we face substantial interdisciplinary challenges. In our presentation at EGS 14 we want to stay on a meta-level, taking into account experiences from both projects.

A gender sensitive perspective on science and technology is necessary for gender in research projects and is introduced in these projects by gender experts with a social science background. So these projects bring together researchers from different disciplines with specific interests, expertise and understandings. Different stocks of knowledge meet.

Under these circumstances, questions arise like: How do research teams deal with not fully understanding knowledge of other disciplines, with not being able to assess the relevance of other knowledge and with differences in methodologies and focus on research questions etc.? How can they manage to work together and not next to each other? How can the gender perspective become an integral part of the project and not just an “add on”? To answer these questions we systematically reflect challenges of interdisciplinary projects on the interface of gender studies and science and technology to improve gender in research-practice and formulate recommendations.

Our analysis will be based on research diaries we keep since the start of the projects, on group discussions of the research teams and on a qualitative study on challenges of gender in research projects in Austria commissioned by the Federal Ministry of Transport, Innovation and Technology [1].

From these sources we expect to identify success factors for taking gender fully into account in technological and medical research projects on all different steps of the project. Moreover we want to show potential pitfalls, e.g. how gender can be marginalized or misunderstood within such projects, and how to avoid them.

On the basis of our results we will formulate recommendations how to deal with these challenges within research teams and how policy makers and stakeholders can build an enabling environment for such interdisciplinary projects.

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# ABSTRACTS SELECTED FOR POSTER PRESENTATION

# Mining opinions on gender issues using social media

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*Keywords: opinion mining, social media mining, gender issues in science*

**1. Relevance:**
In the past years, the quantity of information that users share, produce and comment on in social media (e.g. social networks like Facebook, microblogging sites like Twitter, etc.) has grown dramatically. The topics they address vary from Economics, Politics to views on gender equality and its relevance to everyday professional life. This information can be employed to obtain a more accurate, unbiased and timely image of the attitudes held by the public on gender-related issues. This task can be done automatically using Opinion Mining, a subfield of Natural Language Processing that deals with the automatic treatment of text to extract and analyse information related to the opinion it expresses.

**2. Aims & Objectives:**
The goal of this research is to: a) determine to what extent we can obtain an accurate image of the real attitude of the public on gender equality using information posted in social media and b) assess the different categories of opinion and the characteristics of their sources.

**3. Methods:**
We have gathered data from Twitter for the past three months, filtering the data incoming from the Twitter API using a set of predefined keywords related to gender equality and science and computational social science methods. Subsequently, the data was classified using opinion mining methods into 3 different categories of opinion. The volume of data gathered on the subject was compared to the volume of data for other topics.

**4. Results:**
The results show that there are increasing numbers of support and awareness groups on social media that help to disseminate gender equality issues and to make their messages heard, highlighting present issues and proposing solutions.

**5. Conclusions:**
Unlike traditional approaches to gender equality in science evaluation, our interdisciplinary approach identifies in a natural, unbiased manner, the different attitudes held by a large audience on this topic. It is, as far as we know, the first attempt to gather and automatically analyse opinions and perform a sociological inquiry on social media data on this topic, useful for the European policy and decision makers.

# New technologies added value for enhancing women's empowerment and gender equality

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*Keywords: Technologies, education, empowerment, knowledge, stereotypes*

## 1. Relevance:

Sciences and new technologies play a key role in a globalized world. They are constantly evolving and they contribute to openness and evolution of societies. However, women are still underrepresented in ICTs and sciences either it is about education or career. By contributing to production of scientific and technological knowledge, women have a great impact on their design, production, use and implementation.

## 2. Aims & Objectives:

The objective of the Millennia2025 study is to identify the key elements that influence women role in research, science and technology. The study based on foresight methodology analysed the past, the present and the future relations between women and research, sciences and technology. The study also includes hypothesis of evolution for the coming years.

## 3. Methods:

The study has been conducted under Millennia2015 foresight methodology in the context of the information society. Millennia2015 foresight research process is built in three major steps:

Step 1: Information transfer (2008 – 2011): Collection of data from Millennia2015 international conference in 2008: Identification of 321 variables resources gathered in 37 variables that are the major issues for women's empowerment and realisation of an international foresight exercise with the patronage of the UNESCO.

Step 2: Knowledge process: (2011 – 2013): Data analysis to produce the vision of Millennia2015: analysis of the responses of the foresight exercise, formulation seven macro-issues for women's empowerment ("How to…?" questions), six ultimate aims and the six strategic axes, resulting in a global action plan for women's empowerment by 2025, based on the information society in solidarity.

Step 3: Intelligence Platform (2014 and beyond): Implementation of Millennia2025 action plans and evaluation of the foresight process by the international Millennia2025 Voluntary Researchers' Network .

## 4. Results:

The main results of the research underlined: the underrepresentation of women in sciences and technologies; the influence and cultural and social representation on women's role in science and technology; the strength of women's networks for mobilization; the increasing use of technologies in all fields including in developing countries.

## 5. Conclusions:

Millennia2015 recommends to encourage women to producing new technologies (governmental measures, patronage systems, companie's initiatives); reinforce the efforts to eliminate gender stereotypes; develop a culture of networking (mobilization) and of digital solidarity (sharing). The Gender Summit must consider technologies as a transverse issue for women's empowerment and as a strategic tool to reach that goal.

## References:

- Millennia2015 website (FR + EN): http://www.millennia2015.org/
- Millennia2015 foresight methodology: http://www.millennia2015.org/Method
- Millennia2025 knowledge database: http://www.millennia2015.org/Knowledge_Database

# Gender matters – co-creation between academia and external parties

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[2] Mälardalen University, Sweden

*Keywords: networking, co-creation, gender*

## 1. Relevance

Research on co-creation between university and industry or the public sector emphasizes the importance of networks, personal relationships and trust (see e.g. Barnes at al (2002) and Holi et al (2008)), but the gender aspect of such relationships is generally ignored. Since networking is often gender specific it is of relevance to bring up the subject in relation to co-creation networking.

## 2. Aims & Objectives

The aim of the article is to highlight the importance of adopting a gender perspective in research on networking activities between universities and external parties. The hypothesis is that by adopting a gender perspective it is possible to explore hidden patterns in networks and individual relationships, which can have negative impact on both research results and long-term relationships with external parties. The paper will analyse the role of trust and the implications of personal networks in relation to institutionalized collaboration including if and how personal networks are more affected by gender than the institutionalized.

## 3. Methods

The article includes a literature study of research on co-creation, networking and gender studies. Ethnographic methods are used to collect empirical data, such as interviews and three case studies of different levels of networking and co-creation in which we are focusing on the institutionalized and the "hidden" personal networking. The cases consist of platforms for co-creation between academia and external parties. In the analysis of the empirical data theories from gender studies and networking are used.

## 4. Results

The results indicate that from an individual perspective it is often positive to have a personal network, since it is a part of the scientific or cultural capital. Individual researchers invest in such networks and are not always willing to share personal business contacts with colleagues. The network is often a strong motivator to initiate and conduct research in co-creation. But from a university perspective, there is a vulnerability to collaborate through networks compared to institutionalize co-creation, particularly when someone of the opposite sex replaces a person in a network.

If a person in a key position is replaced he or she needs to create their own networks, institutionalized networks could facilitate this. However, institutionalized networking is not always the solution since trust is hard to formalize. The results indicate that even if there does exist structures for networking it is hard for women to get access to the same channels as men in the same positions. In order to really facilitate networking activities gender awareness is needed.

## 5. Conclusion

Concerning co-creation between university, industry and the public sector there is a danger in collaborating through personal networks compared to institutionalized cooperation; based on the results we hence suggest that it is necessary to bring light on the gender issue in relation to co-creation networking in order to establish efficiency in universities' long term strategic relations.

**References:**


[1] T. Barnes, I. Pashby and A. Gibbons. Effective University-Industry Interaction: A Multi-case Evaluation of Collaborative R&D Projects. *European Management Journal* 20(3), 272-285 (2002).

[2] M.T. Holi, R. Wickramasinghe, M. van Leeuwen. *Metrics for the Evaluation of Knowledge Transfer Activities at Universities*. Cambridge: Library House (2008).

# Health, Illness, Men and Masculinities (HIMM)

Dr. Blye Frank

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*Men's health, Masculinities*

Gender is one of the most important socio-cultural factors influencing health and health-related behavior. Although a large body of health research suggests that men with similar social disadvantages as women experience poorer health outcomes in relation to disability, chronic illness, injury rates and mortality, men's health is rarely deconstructed through the lens of gender. The focus of this presentation is to increase understanding of the ways in which masculinities intersect with other social determinants of health creating health disparities among men, and to provide direction for masculine affirming health interventions aimed specifically at men. With the goal of promoting the health of men and decreasing health disparities, within the Canadian context, as well as internationally, an innovative theoretical framework for men's health, Health, Illness, Men and Masculinities (HIMM), based on the influence of masculinity throughout the life-course will be presented. The HIMM Framework points to the need for research and theory development that moves us beyond a limited focus on any one individual man to consider men's health and illness practices in the larger social context within which masculinity is defined and produced. The HIMM framework provides direction for policy, education, health care delivery and health promotion initiatives aimed specifically at men in many locales, contexts and countries.

# Creating Successful Research Centers: The Impact of Gender and Leadership

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*Keywords: co-leadership, gender diversity, research centers*

It has been shown that gender diversity increases productivity of collaborative research teams but few studies exist that look at the impact of gender in research team leadership. In 2006/07, Indiana University-Purdue University Indianapolis (IUPUI) launched a research center initiative with the goal of creating research units distinctly identifiable with the campus. Over the course of six years, 189 applications for seed funding to develop new or expand existing interdisciplinary research centers were received. Seed funding for three years was awarded to 44 of these applications. Of these 44 centers, 11 were successful in attaining self-sustainability, thus earning the designation of IUPUI Signature Centers. The objective of this project was to assess the impact of leadership and gender on creating successful academic research centers. In a retrospective cohort study, center leadership structure was assessed for all IUPUI research center applications, awardees and designated Signature Centers with respect to type of leadership, gender distribution and disciplinary category (STEM schools, medical school, others). Measures of leadership impact included the securement of seed funding and the attainment of Signature Center status. Significance of data was determined by the Chi-square test. Since the launch of the research center initiative, the majority of applications requesting seed funding have listed a single center director (63%). However, there has been a significant increase ($p<0.05$) of applications describing co-leadership (2 or more co-directors) in recent years with numbers of applications being equal to those with single leadership in the past 3 years. The most successful centers, those earning Signature Center designation, were launched with co-leadership teams ($p<0.05$). Gender distribution played an important role in awarding initial seed funding to female applicants. Teams of female/male co-directors had a significantly higher chance of receiving such funding than female single directors ($p<0.05$). In contrast, single versus co-leadership had little impact on the success of male center directors to secure seed funding. Interestingly, male/female leadership teams were almost twice as likely to be awarded funding for their proposed centers than male/male teams (41% versus 25%). The number of applications listing female/female leadership teams was too small to allow for any meaningful evaluation. Discipline alone had little to no influence of funding or designation status. **Conclusions:** Our data show that co-leadership has a significant impact on the successful establishment of academic research centers particularly for women. It appears that female/male leadership teams are more likely to succeed than male/male teams although more data will need to be collected in future years to determine if the difference is statistically significant.

# Gender Imbalance in SET Organizations: The Problem of Practice

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*Keywords: gender, SET, change, translation*

**Content and Structure**
Although all over Europe much effort has been put in the attempt to increase the number of female researchers in SET (Science, Engineering and Technology), only little success was achieved in terms of numbers. This work identifies reasons for this slow change process especially in the SET context by looking at both formally imposed measures addressing gender change in organizations and its informal implementation into organizations practices.

**1. Relevance:**
Sustainable gender equality in organizations has been shown to be a difficult undertake [1]. Research identifies implementation problems in various ways, e.g. in terms of lack of power and resources, lack of understanding and significance, as well as lack of legitimation of the change process. However there is still little research shedding light on how those aspects work together, both at the formal as well as informal level of the organization in successful and/or unsuccessful ways.

**2. Aims & Objectives:**
The aim of this research was to get a better understanding of how existing politically and legally legitimated programmes and policies supposed to increase the number of female scientists in SET are translated into daily organizational practice. It is assumed that formally imposed regulations only will have a sustainable gender impact if they can be "translated" and hence get embedded into organizational daily routine and practice.

**3. Methods:**
Methodically the research is based on a case study of an Austrian SET institution in higher education. A case offers both richness of data and a holistic view of a phenomenon. Within the studied case 27 qualitative interviews with different stakeholders of the institution as well as a document and structure analyses were conducted to contrast the formal with the informal organizational level. Structural data gathering included for example official reports, staff information, as well as the mission statement, details of corporate governance and the code of conduct. The collected data was then analyzed via Atlas.ti, a qualitative data analysis software.

**4. Results:**
Based on the empirical results a model was developed explaining mechanisms of successful, less successful and unsuccessful translations of formal gender policies into daily organizational routines. We identified that only after translating external change instructions fully into organizational structures at the formal level the second translation step, the translation into organizational routine and practice could be successful. Until such a process is successfully achieved various impeding factors (lack of resources, lack of organizational legitimation or understanding of the significance) could occur and interrupt the translation process.

**5. Conclusions:**
Aiming to get a better gender balance in the research teams of Horizon 2020 projects the results of our research allow for systematically studying hindrances and "translation problems" of women promoting policies in SET organizations.

**References:**
[1] Sharp, R., Franzway, S., Mills, J., and Gill, J., Flawed Policy, Failed Politics? Challenging the Sexual Politics of Managing Diversity in Engineering Organizations. Gender, Work and Organization 19(6) (2012) 555-572.

# "Mainstreaming gender into research" means gender in the core curriculum

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*Keywords: Medical Curriculum, Gender Medicine, Research*

## 1. Relevance:

In order to get Gender into medical research it is essential for Gender and Gender Medicine to be included in all curricula offered at medical universities right from the start.

## 2. Aims & Objectives:

Gender und Gender Medicine as cross-cutting subjects must be incorporated in all medical hypotheses and disciplines. In order to achieve this goal, help must be offered to all instructors to incorporate Gender aspects into their courses and, at least in the initial phase, Gender Medicine must also be included in the core curriculum of all study phases and in all cumulative examinations. In this way Gender Medicine will become the status quo for all medical students, a subject like any other.

## 3. Methods:

On the one hand all instructors are asked to include Gender aspects in their course material and exams and are given a booklet on the subject. In addition, Gender Medicine is instructed in the core curriculum twice: in the third semester the fundamentals of Gender Medicine, and in the tenth semester its clinical and research relevance. This material is also covered in the two large cumulative exams. In addition, there is a required elective in Gender Medicine with a different subject each semester, i.e. oncology, immunology, etc., where prominent theoretical and clinical researchers present findings from their field. Gender Medicine was recently established as a compulsory subject in the PhD program: one Gender aspect must be elaborated from the PhD thesis with subsequent congress presentation or publication of a scientific paper. Furthermore, there is a compulsory course prior to applying for venia docendi, again including Gender Medicine and Gender Mainstreaming. In addition to the pure transfer of knowledge, one focus of Gender Medicine is also to convey its practical benefit, namely to make students aware of the relevant provisions of law, subsidy programs, and guidelines for research project grant applications, while providing pertinent "how-to" links for processing, wording and databases. A booklet on this subject with practical tips was also drawn up and distributed.

## 4. Results:

The rejection encountered and even verbally expressed at the introduction of compulsory courses in Gender Medicine has meanwhile disappeared. Gender Medicine appears to now be accepted as the status quo. Meanwhile, alone in 2013 more than 100 diploma theses and 13 PhD theses were registered on the subject of Gender Medicine, and in 2014 a poster prize was even awarded at a surgical congress for a PhD Gender poster, which obviously convinced many people of the usefulness of Gender Medicine.

## 5. Conclusions:

In order to get Gender and Gender Medicine into medical research they must already be included in the core curriculum if they are to be considered a "normal" subject. Another very important factor in dismantling prejudice is to emphasize the usefulness of Gender Medicine findings with regard to research possibilities, project applications, grants and resources.

# Shaping Science for a Healthier World: Introducing Sex/Gender Requirements in a National Research Funding Agency

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*Keywords: research, funding agencies, policy, sex, gender*

**1. Relevance:**
It is increasingly recognised that scientific evidence often fails to account for sex and gender; consequently it is not always clear whether results can be equally applied to men and women. To address this gap funding agencies and journals are beginning to develop policies and approaches to enhance the uptake of sex and gender considerations by health researchers. Yet, many of these approaches have not been formally evaluated. To address this gap, we assessed the impact of introducing a requirement to encourage the uptake of sex/gender in research.

**2. Aims & Objectives:**
Our key goal was to introduce and evaluate a policy approach that would require all researchers applying to CIHR, Canada's National Health Research Funding Agency, to indicate if they have taken sex/gender into account in their research.

**3. Methods:**
We describe the strategies we used to achieve, design, and implement this institutional policy change, and to encourage compliance with the policy. Over the course of seven funding cycles we examined applicants' responses to the sex/gender items. We also evaluated qualitative responses in which applicants justified their decision to consider, or not consider, sex/gender.

**4. Results:**
The arguments that were most salient in encouraging the uptake of this policy focussed on scientific excellence and innovation. We used key examples of new discoveries related to gender/sex differences to bolster our position. While we found that the integration of sex/gender increased over time, there were key areas of science, primarily in basic biomedical fields, where uptake was poor. The analysis of the qualitative responses suggests that there remains considerable confusion between the concepts of sex/gender, and that those working in male or female only populations believe sex/gender considerations are not applicable. Perhaps most surprising, is the continued belief among researchers that sex/gender consideration are "not applicable" even when they are working in areas of science where the reverse has been demonstrated (e.g., animal studies, clinical cardiovascular research).

**5. Conclusions:**
While we are heartened by the uptake of sex and gender amongst Canadian researchers, there is a great deal of work left to do. We now have excellent baseline data, and know the fields of science that require particular focus. We recognised that the research community requires education and are developing training materials for researchers and peer-reviewers.

# Qualitative mobility surveys – focussing of care-givers. Practical Experiences by an Austrian transport planner and consultant

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*Keywords: travel survey, transport planning, mobility, day-to-day trip, trip chains*

**1. Relevance:**
Using examples of completed Austrian travel surveys, the gender analysis shows that not only the interpretations of the data, but also the questionnaires reveal bias and simplifications, which veil crucial aspects in the behaviour concerning mobility, particularly the behaviour of caregivers in their everyday lives. A way to make up for this deficiency is to develop new surveying methods.

**2. Aims & Objectives:**
During several research projects, carried out by B-NK Consultancy for Sustainable Competence, gender-sensitive methods have been developed and put into practice. Our work is based on the following hypothesis: Due to common quantitative mobility survey methods, travel habits and mobility patterns of those providing child care, care for the elderly are underestimated.

**3. Methods:**
With the scope of several research projects, the author was able to carry out qualitative mobility surveys. Within the project "Mobility4Job – Gender-appropriate mobility solutions for better working opportunities in rural areas" the goal of the project was to identify obstacles within the mobility system which hinder people from obtaining gainful employment. Furthermore, preconditions and mobility services in rural areas will be defined in order to enable women and men who are responsible for the care of family members as well as their own household to have fair opportunities to participate in workforce. Within the working package "qualitative mobility survey", conducted by the author, 15 in-depth interviews in a rural area (Triestingtal and Schneebergland, both located in south-west region of Lower Austria) were conducted.
Within the project "Austrian Mobility Survey: Gender Module" six regions with various (public) transportation and geographic pre-conditions in Austria were defined and face-to-face in-depth interviews were carried out with individuals responsible for (unpaid) day-to-day care of their (own) children, parents, in-laws etc.

**4. Results:**
Within the scope of these research projects, approximately 130 in-depth interviews of about 45 to 90 minutes each were carried out by the author and her team between March 2013 and January 2014. The central questions of the interviews focus on, on the one hand, the respondent's personal attitude towards family, household, employment and the division of paid and unpaid work among family members. On the other hand, information concerning the day-to-day mobility patterns and travel purposes was also questioned. At Gender Summit interim results and recommendations for gender sensitive transport planning and mobility research shall be presented and discussed.

**5. Conclusions:**
This paper can be understood as an example on how to implement gender and diversity aspects into applied mobility research.

# Gender-UseIT - Considering Gender in the Creation of User Interfaces

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*Keywords: gender, usability, HCI*

**1. Relevance:**
In order to not unreflectedly reestablish the societal status quo online, there is a need to make sure a gender perspective is integrated in the usability engineering process and the creation of user interfaces.

**2. Aims & Objectives:**
The aim of this project was to improve research and practice regarding the creation of usable user interfaces by collecting best practices and developing guidelines for considering gender in the usability engineering process.

**3. Methods:**
Based on "Gendered Innovations" and "Discover Gender", Gender-UseIT was initiated, an interdisciplinary network to bring people together with the focus of considering gender in UX, usability and HCI. Funding was provided by the German Federal Ministry for Education and Research (BMBF). The network Gender-UseIT is dedicated to promoting gender-sensitive, innovative research cooperations in web usability and user experience. The goal is to show perspectives, methods, and means to take gender into consideration in HCI. The conference „Gender-UseIT 2014" on April 3rd and 4th 2014 in Berlin offered a platform for researchers and professionals from universities, research organizations, and companies.

**4. Results:**
Proceedings of the conference Gender-UseIT [1] will be published showing approaches, tools, and examples for integrating a gender-sensitive perspective in the usability process and the design of user experience. A first draft of the guidelines for research and practice of considering gender in the usability engineering process has been developed and was discussed at the conference.

**5. Conclusions:**
Guidelines for considering gender in the usability engineering process are helpful since making sure that user interfaces offer optimal usability for everybody affects all Horizon 2020 themes.

**References:**

[1] Nicola Marsden & Ute Kempf, *HCI, Web-Usability und UX unter Gendergesichtspunkten*, DeGruyter (forthcoming).

**GenPORT – Your Gateway to Gender and Science Resources**

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[2] Work & Equality Research, UK

*Keywords: gender and science, internet portal, knowledge transfer, policy support, policy transfer*

**1. Relevance:**
Though the wealth of gender and science resources developed in Europe over the last decade offers enormous potential for knoweldge sharing, these resources are dispersed, and having varing degrees of visibility and usability. Globally, too, major gaps in the dissemination of past and present knowledge persist, while new knowledge is constantly being produced. This information needs to be offered in accessible, timely, value-added ways to enhace the potential for its exploitation. Principally there is a huge demand in the science community to understand how to best incorporate a gender perspective in research. The leading role of the European Commission in driving forward the gender equality agenda in STI also is clearly apparent.

**2. Aims & Objectives:**
GenPORT (a FP7 Coordination and Support Action 2013-2017) creates an internet portal that fulfills this need. It aims to provide a single open entry-point to high-quality research, policy and practical materials on gender, science, technology and innovation (STI) in order to enhance the potential for their more effective exploitation.

**3. Methods:**
GenPORT aims to support existing communities working in gender and STI. In order to understand better their current needs an extensive stakeholder consultation process is being implemented. Semi-structured interviews across resource holders and different stakeholder profiles (policy makers, gender equality practitioners, and science stakeholders) are under way. An online survey among National Contact Points for Horizon 2020 has also been carried out.

**4. Results:**
Practical and conceptual expertise in advancing gender equality in science is currently very unevenly distributed among those concerned with implementing the EU science agenda. Whilst some stakeholders are already actively involved in promoting gender equality in their countries and institutions, others have not yet addressed the gender dimensions of science and research, and of how equality can be advanced.

**5. Conclusions:**
There is a huge gap between the EC's strengthened emphasis on improved gender equality in research structures and processes and the current level of activity and expertise among key science and research stakeholders in support of this EU agenda. The GenPORT portal has a key role to play in supporting this capacity building process, in addition to its mission to support existing communities of practitioners through the resources it offers, tailored to their stated requirements.

# Learning Gender for Teaching Gender

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[2] LMU Munic, Germany

*Keywords: Gender Teaching, Gender Certificate, Gender skills*

## 1. Relevance:

Although gender studies prove that different contacts among teachers and students, expectations, chances for the post-school learning and working procedure, and roles lead to unequal education there is still an unawareness of gender socialisation in primarily and secondarily education as well as at universities.

## 2. Aims & Objectives:

The aim of focussing on teaching gender is to improve the awareness of gender in education in order to arrange an equal setting during school-time socialization to prepare equal opportunities for men and women. Therefore courses for teacher trainees were developed and later on evaluated.

## 3. Methods:

Continuing education classes for students that cover gender and diversity skills bring home to course participants why our increasingly heterogeneous society makes it necessary to demonstrate diversity skills (volition). The courses convey basic knowledge of the social construction of gender stereotypes and foster a deeper understanding of communication and behavior processes that contribute to reducing social prejudices (knowledge). In application oriented exercises, participants learn methods that are helpful for integrating heterogeneous groups. Furthermore, they are given the ability to thoughtfully analyze different approaches for structurally reducing diversity, to assess these approaches, and then to develop new stimuli in existing structures (ability). By successfully participating in at least four of these courses and composing a critical essay on issues related to gender and diversity skills (on the order of 4,500 characters), the students can obtain the certificate: “Gender and Diversity Skills: Volition, Knowledge, Ability”

## 4. Results:

Seminars in the series Gender and diversity in Teaching are directed toward all lecturers at the LMU and deal with issues of gender equality in university teaching. The goal is to sensitize instructors to existing structural and stereotypical attributions related to gender or conditions of social and family upbringing. In addition, these courses can count as professional instruction toward the “Bavarian University Teaching Certificate” through *ProfiLehre*.

## 5. Conclusions:

On the one hand, the various offerings of this program want to help academics reflect on their own skills in dealing with heterogeneity, and on the other hand, there is discussion of which areas in research and day-to-day teaching might be crafted differently in the future to demonstrate more gender skills under certain circumstances. Finally, it has to do with how one’s own gender skills can be expressed in a written gender and diversity plan. By successfully participating in two of the program’s seminars and generating an individual gender and diversity plan for research and teaching that contains about 5,000 characters, the participants can obtain the certificate: “Gender and Diversity Skills in Teaching and Research”. The gender and diversity plan will be reviewed by a panel of experts.

# The leaky pipeline of women in universities: An institutional case study

(Dr. Charikleia Tzanakou, University of Warwick, UK)

*Keywords: gender equality, departmental approach, mixed methods.*

## 1. Relevance:

Despite the increasing proportion of women in undergraduate and postgraduate education in the last decade, women are still under-represented in senior academic posts in higher education institutions in UK and Europe (ECU, 2012; EC, 2012). Academic literature has largely concentrated on investigating gender in science, engineering and technology (SET) or STEMM disciplines (science, technology, engineering, mathematics and medicine) (Ecklund et al., 2012) although it seems that the leaky pipeline phenomenon is also present in the non-STEM subjects.

## 2. Aims & Objectives:

The aim of this study was to investigate closely departmental patterns of the 'leaky pipeline' of female academics to identify to what extent female academics in different departments experienced similar or different challenges in relation to their academic career. Such evidence would inform the institutional and departmental efforts to adopt practices that will promote the attractiveness, retention and progression of women in academia.

## 3. Methods:

A growing number of policies and measures with the aim to enhance gender equality have been identified and implemented at institutional, national and international level. However, there is limited evidence on the effects of such gender equality measures especially in terms of structural and cultural change (EC, 2012). Among the most valuable recommendations of this European report, is the shift of emphasis from general to discipline specific measures, which might be more effective in addressing gender inequality. While many studies have focused on national and institutional data analysis and gender equality practices, this study employs a disciplinary/departmental approach. The quantitative analysis of student and staff data from a gender perspective is enriched by departmental focus groups with female academics.

## 4. Results:

Through the quantitative data analysis, different patterns of 'leaky pipeline' are identified across departments that show the various critical transition points that women 'drop out' and departments should focus their efforts and investment on. Based on the theoretical framework of Acker (1990) about 'gendered organisations, the qualitative data analysis suggests that worthwhile initiatives should aim at the transformation of the organisation in a way that will dissolve gendered cultural norms and societal practices which reproduce gender inequality within departments and the university.

## 5. Conclusions:

While this study is constrained in one institution, this approach provides another way to understand the underlying trends of institutional data and has the potential to feed into the efforts aimed at identifying tailored and effective strategies to address gender inequality in departments and universities.

Acker, J. (1990). Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations . *Gender & Society* , *4* (2 ), 139–158.

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European Commission (2012) Meta-analysis report of gender and science research- A Synthesis Report, Directorate-General for Research and Innovation, Luxembourg: Publications Office of the European Union

# Gender differences in pursuing a scientific career

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CWTS, Leiden University, The Netherlands

*Keywords: mixed methods; scientific output; societal output; gender gap; rank*

**Words: 475**

**1. Relevance:**
To understand the stagnation of women in the academic system, we compare both the scientific recognition and the societal relevance of male and female scientists.

**2. Aims & Objectives:**
Academic science is currently shaped by pressure towards academic excellence and by aspirations towards knowledge transfer and research activities beyond academia. Our aim is to contribute empirical evidence on how the quest for both academic publishing and societal relevance is differently taken up by male and female scientists.

**3. Methods:**
We had two datasets available: 1) the academic leadership dataset, with survey data on the societal orientation and output of 458 biomedical and health research leaders in the Netherlands. 2) the ACUMEN dataset with bibliometric data of 1994 researchers in 15 different EU countries and 4 four disciplines.

**4. Results:**
Our bibliometric analysis, which measures the scientific recognition, confirms the traditional gender pattern: men produce on average a higher number of scientific publications compared to women, regardless their academic position and research field. We also pay attention to authorship order, given that the first and sometimes also last author publications are at least as important as raw publication counts for hiring, promotion and tenure. Our results suggest that women are not evenly represented across authorship positions. At each level on the career ladder, the papers in the oeuvres of female researchers consist of a higher percentage of first authorships compared to men. With regard to last authorship position, women are significantly underrepresented this prestigious position. Interestingly, we show no gender differences regarding research impact (citations). Our results show that depending on the discipline the degree of internal collaboration varies. Interestingly, at the level of full professors, the percentage of collaboration is higher compared to males who have the same position in academia. At lower rank, the percentage of international collaboration is always lower for female researchers than for male researchers. Our academic leadership dataset shows that men and women differ in their societal orientation and output. Female research leaders are quite positive about the increased societal orientation of their research. Male research leaders have more neutral views. Females are also most active and productive in generating societal output, compared to their male colleagues. It is also interesting to note that women are more oriented towards various types of societal output (e.g. writing policy reports, training for policy makers, visibility in media), whereas men have a stronger focus on patents and entrepreneurial activities.

**5. Conclusions:**
Overall in Europe, reducing the mismatch between academic activities that women prefer (e.g. teaching, supervision, distributing knowledge to society) and academic activities that are rewarded (publications, citations, grants) could speed up the process of closing the gender gap in science.

**Integrating the gender variable in the international biological engineering competition, iGEM.**

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[2]) WAX association, France

*Keywords: gender balance, science, education, team performance, quantitative methods*

**1. Relevance:**
Women represent about 30% of scientific researchers worldwide, with substantial variation by region and discipline. Gender imbalance affects the practice of science and may hinder its success, particularly in the context of large cooperative research teams. In this study, we focus on the next generation of professional scientists: undergraduate researchers in the newly emerging field of synthetic biology. We present a detailed study of women's participation in a specific scientific community, with emphasis on the potential causes of gender inequality and the impact of gender balance on research team performance.

**2. Aims & Objectives:**
First, to document the representation of women among young synthetic biologists and thereby raise awareness of gender issues in a specific scientific community. Second, to understand the relationship between gender balance and research team success. By correlating team gender composition with several performance metrics, we seek novel quantitative insights into the impact of gender on the practice of science.

**3. Methods:**
The annual iGEM (international Genetically Engineered Machines) competition brings together thousands of young synthetic biology researchers working in teams to design and execute innovative projects. Projects are thoroughly documented on publically available team websites and lab notebooks. High-performing teams are awarded prizes in multiple categories.
Several datasets were manually curated from publically available sources and statistically analysed. The iGEM-related data included male and female team member counts and awarded prizes for 850 teams over 7 years of competition. Similar data was collected from self-identified synthetic biology research labs, relevant conference speakers and publication authors.

**4. Results:**
We observed a robust gender imbalance in the iGEM competition, with women representing 37% of team members. Average team gender ratios showed no significant differences by region (Europe, North America, Asia) and no significant change over 7 years. However, team gender ratios were found to correlate with team success, with significantly more women (43%) participating in prize-winning teams.
The results of this study were publically presented to the community of study at two iGEM competitions in Europe and the United States. In cooperation with the iGEM foundation, a highlighted gender page was added to the competition's main website (add link). Future iGEM teams are invited to engage and develop gender studies as part of their participation in the competition, fostering a community-based active gender policy.

**5. Conclusions:**
Despite being a newly formed scientific discipline, synthetic biology suffers from the historical underrepresentation of women in science. The iGEM competition is demonstrated to be a well-documented microcosm for gender and science studies. By raising awareness in the iGEM community and in cooperation with the iGEM organizers, iGEM may become a test case for the effect of active policy.

*This work was done in cooperation with the WAX Science Association, who's co-founders, Aude Bernheim and Flora Vincent were members of the winning team DrawMeWhy of the EGS2012 video contest "Science, it's your thing".*

**Unique Abstract ID: EGS14-A0064 , Author: Wosczyna-Birch, Karen**
**Title: "You Belong: Engaging Females in Non-Traditional Careers"**

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College of Technology, Connecticut State Colleges and Universities, United States
Engineering, Technology, Non-traditional Careers, Recruitment

**1. Relevance:**
In order to create a diverse 21st Century workforce, females need to be recruited and persist in engineering and technology career paths.

**2. Aims & Objectives:**
Funding from the National Science Foundation, provided resources to create recruitment and retention materials that used strategies for engagement of females in engineering and technology disciplines. Specific strategies including the use of role models; peer mentoring; and new pedagogy that used real-world, problem based learning projects.

**3. Methods:**
A DVD, called, "You Belong" was created and disseminated at workshops, after school programs, conferences and through social media. Surveys were collected that measured the change in the students' perception of careers in engineering and technology. Students that were involved in problem based research projects completed pre and post surveys and were tracked for degree completion and their engagement in engineering and technology careers.

**4. Results:**
An analysis of the data demonstrated that females were attracted to careers in engineering and technology and manufacturing when the applications of the discipline were presented as solutions to real world problems that impact humanity. In addition, the influence of peer mentors was significant in both the recruitment and retention of females in non-traditional careers. The analysis of the National Science Foundation funded program called the Life Support and Sustainable Living Program demonstrated that engineering and technology projects that improve society such as an apnea monitor for premature babies attracted female students and motivated them to pursue careers in non-traditional fields.

**5. Conclusions:**
The recruitment and retention of females in non-traditional careers is influenced by strategies that demonstrate the societal impact of these disciplines on improving the quality of life.

**References:**

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# ABSTRACTS SELECTED FOR INCLUSION IN THE COMPENDIUM

# H2020 project managers: a potentially powerful leverage for implementing gender equality actions

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*Keywords: scientific project management, women speakers, conferences, H2020*

## 1. Relevance
EC project managers can take a proactive approach for promoting gender equality important for career development, for instance when organizing scientific conferences.

## 2. Aims & Objectives
Promoting gender equality is now an important issue in H2020 funding, but how this should be achieved is still open to interpretation. We propose that the position of the scientific project manager can and should play a critical role in implementing gender equality within scientific consortia. Within the FP7 projects that we currently manage, we decided to use this role to promote gender equality in numerous ways. Here, we discuss how this proactive approach was successful in promoting women scientists as conference speakers, as demonstrated by one of several examples of successful conferences supported by the project.

## 3. Methods
Within an FP7 large collaborative project, the project manager decided not to support any conference or workshop in which women did not make up at least 30% of the speakers/trainers; she got the "go-ahead" to enforce this from the scientific coordinators, who were overall disinterested but not against the idea. This work was carried out in a relatively barren environment for scientific gender balance: the project itself has only 2 women of the 11 primary investigators, and the host institute is highly male-biased, organizing for instance annual symposia (in biological topics) with a low ratio of women to men speakers (with 2 women of 17 speakers [12%] in 2012, 1 of 14 [7%] in 2013, and 4 of 21 [19%] in 2014). A specific example of the impact of the project manager is given for an FP7 project-supported computational biology symposium organized in March 2014. At the start, the project manager told the organizing scientists about the project policy of gender balance in speakers. Although at least one conference organizer was initially skeptical, all three agreed to put in an extra effort to get a gender-balanced speaker roster.

## 4. Results
The final speaker ratio of the computation biology symposium was 8 women: 13 men (38%), in a field that is normally considered to be very male-dominated. As one of the organizers, a women, stated afterwards: "Now I am surprised that there are actually more women than I believed doing great science. Although I strongly think sex should not be a criteria to invite people—science should be the driving force—I now have realized that women need more visibility at the top level."

## 5. Conclusions
By implementing and enforcing gender criteria, project managers can have a strong influence in promoting gender equality. Increasing the percentage of women speakers at conferences is just one of several examples. However, there are several restrictions at the national and international levels that hinder implementation of further-reaching actions via the project managers (e.g. the inability to pay for babysitters from the project budget can prevent parents—usually, the mother—from attending project meetings). In sum, project managers should be considered as a useful leverage for implementing gender actions, and as such, should receive encouragement and training for this.

# Gender Aspects of the FP7 NMP Project SolarDesign

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[1] Vienna University of Technology, Institute of Sensor and Actuator Systems, Austria

*Keywords: photovoltaics, gender aspects, FP7 NMP*

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The FP7 NMP project “On-the-fly alterable thin-film solar modules for design driven applications SolarDesign“ [1] focuses on a novel manufacturing process which will enable the adjustment of all properties of a thin-film module on-the-fly and facilitate the production of customized photovoltaic modules.

Aims and objectives: The consortium supports the findings of the ETAN report and the so called 'Helsinki Group' that recommend the development of indicators on the situation of women in research. The subsequent Gender Watch System operated by the EC will be provided with information by monitoring, as part of the M18 and M36 reports, gender details of researchers employed on the project. 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 women have been identified to participate to SolarDesign, among them the coordinator Nadja Adamovic (TUW).

Methods used: all partners launch specific actions 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. Dr. Brigitte Ratzer (Head of the Centre for Promotion of Women and Gender Studies, TU Vienna) participated in the first Project Meeting to discuss with the Project Consortium the gender action plan in SolarDesign. GAIA evaluates the public opinion (end-user groups, stakeholders, taking account gender issues) for SolarDesign,

Results: A gender action plan will be prepared during the project execution (leaded by GAIA). 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. Alll 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 will be responsible to ensure that this takes place and that the project makes a full contribution to the goals of the ERA.

Conclusion and Outlook: 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. GAIA has been selected by Emakunde (Basque Government gender issues department) as one of the models in gender promotion in companies. Therefore GAIA will be in charge of the gender plan in SolarDesign.

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References:

[1] http://www.solar-design.eu

# Women in scientific, political and institutional positions at Universidad Nacional del Litoral, Argentina

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Universidad Nacional del Litoral, Argentina

*Keywords: research and development, academia governing, women leadership*

Universidad Nacional del Litoral is a higher education institution born in 1919 in Santa Fe, Argentina. It is among the most performing research universities of the country, in the 7th place according to global production of indexed documents and in the 3th, regarding to most quoted documents. Women represent 47.5% of the total academic staff and 50.1% of the faculty focused on research and development. The objective of this study was to quantify the proportion of women in decision-making positions, both as scientists or government staff, in order to assess their representativity and describe their careers.

We obtained numbers of faculty and academic staff from "Mapuche", the application used for human resource management in Argentinean universities. Secondary sources from CONICET (National Council of Research in Science and Technology), the most important Argentinean research organism, and from Programa Nacional de Incentivos, a system that classify faculty according to their research activities and hours of work, were also required. We defined a number of academics mainly focused on research by combining their weekly hours of research and their position in the "Incentivos" program. The number of women in decision-making positions in the university government was also recorded from secondary sources, taking into account two different categories: elective positions, i.e. deans and counselors elected by students, alumni, assistant professors, and faculty, and non-elective positions, such as vice-rectors, directors and advisors at colleges and central administration.

The proportion of women in academic positions was higher in basal categories both when teaching or research activities were observed. Presence of women decreased in most symbolically or economically valuable positions such as Investigador Superior (CONICET) or Profesor titular (UNL). Nevertheless, the temporal series showed a slow increase of women in mid and mid-high research categories (categories II and III of "incentivos", adjunct professor and independent or principal researcher of CONICET). Government positions showed a less encouraging trend, with a total of 10 male deans for the 10 colleges of UNL at the time of this study, as well as 9/10 vice-rectors. The council of the University, which according to Argentinean higher education public system includes students and graduates besides academic staff, had only 13% women, and the social council, an advising organism, had no female representatives over a total of 11 counselors. On the other hand, women were more umerous in the second and third lines of non-elective government staff.

The results reinforces the notion than women are more successful when meritocratic mechanisms are applied to selection of staff, while they find more obstacles in positions determined by political alliances and recognition.

After the present study, we proposed an affirmative action in 2012, while the statute of UNL was being discussed and reformed; a gender quota of 30% minimum was included for the counselors' election in the cases a list system applies. No gender policy was included for uninominal positions such as deans or professor counselors. Changes are operative since 2013.

# Title: Lifespan perspective on the study of the relationship between gender and ways of ageing

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*Keywords: Ageing, gender, lifespan*

**1. Relevance:** *The ageing process is life-long due to multidimensional determinants and it is characterized by a decline in the functionality and efficiency of biological tissues and organs. As a consequence, loss of adaptation to environmental demands increases.*
*The ways of ageing are dependent on bio-psycho-social factors that occur across the life span. People age in different ways due to a very broad diversity of both personal (i.e. physical, psychological) and environmental conditions (cultural, economic, educational,.) and their interactions across the life span. The role of sex and gender differences is particularly relevant and it is necessary to emphasize on its study. Spain is one of the countries in Europe with highest life expectancy, but also is one of the countries with poorer indicators of active ageing. The participants in our study were born between 1935 and 1955, a very difficult period for the Spanish population with serious implications in the growth and development process of those children. During adulthood, historical changes affected their lives and contributed to the development of several diseases an increase in the prevalence of overweight and obesity and, subsequently in the prevalence of cardiovascular and metabolic diseases. But differences on the distribution of the more frequent diseases in men and women and in the way they feel ageing have been observed.*

**2. Aims & Objectives:** *The aim of this study is to investigate the relationship between healthy ageing and gender with a lifespan perspective. Our hypothesis is that Spanish women have had worse conditions than men during their lives, as poorly controlled pregnancies, unpaid work in caring for children, sick and elderly people who have relapsed on them and which of course had a workload with a major impact on their health and on their way to age.*

**3. Methods:** *The sample is made by 350 participants born between 1935 and 1955. The only criterion for inclusion was the preservation of BADL (Basic Activity Daily Life). This study was conducted according to the guidelines laid down in the Declaration of Helsinki. It was approved by the Ethics Committee of UAM. Individual interviews and measurements were performed in cultural and leisure centres. Information about the following variables was obtained: Personal information, anthropometric measurements, nutritional status (MNA); health indicators. For women number of pregnancies, age at each pregnancy and age at menopause were also recorded.*

**4. Results:** *Men have higher percentages of good or very good self-perceived health than women. Women have better eating patterns, alcohol consumption and tobacco consumption though their current health is worse. However other indicators about health in earlier stages of life as short stature and early age at first birth are related with more diseases today in women.*

**5. Conclusions:** *The conditions under which life passed have an impact on how people age. In the study of the aging process these factors which act throughout the life cycle differently in men and women should be considered. This will more clearly establish preventive measures from early stages of life to enable women and men achieve their best maturing.*

# Gender Monitoring Lab at Unipd: a case study

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*Keywords: gender, monitoring, data, academia, research*

**1. Relevance:**

Our contribution is on the implementation of a self tailored measure for monitoring gender discrimination and fostering gender diversity as a key point

**2. Aims & Objectives:**

the case study we would like to present is the Gender Monitoring Lab, a self tailored measure for monitoring gender equality recently developed within the FP7 Gendertime consortium and implemented at the University of Padua.

**3. Scenario and methods:**

Established the need of reliable data in any field of analysis, since without data we cannot support the relevance of a phenomena, we cannot convince the society of the importance of having effective tools to fight gender discriminations; Observed that in many cases, although data do exist, they are unavailable or unusable because they have been collected for different purpose; Considered the persistent resistance and obstinate resilience of the to understand the importance of considering "gender diversity" as a positive factor, capable of increasing resources, multiply the glances and the synergies, amplify the range of action of a practice or a technique; Considered, in the end, that it is hard not only for the institutions but also for the whole society to think about "gender issues" as not "for women only" but as a way of thinking from which everybody can benefit. According to the Italian legislation on Equal Opportunities that have recently changed, UNIPD is now implementing a "special unit" called Gender Monitoring Lab, addressed to the permanent and non permanent staff of the academia, to the technical and administrative staff, as well as to the students. GML uses active and participative methodologies for data collecting to build new set of contest sensitive qualitative indicators, methodologies that are the result of the on going exchange of practices inside the Gendertime consortium made possible thanks the new crucial figure of the Transfer Agents in charge for transferring good practices among institutions and to model them to the local contest.

**4. Results**

The first two actions launched by GML are related to the recognition of certain implicit data that make inequalities salient in the world of research: 1) a monitoring campaign on the gender based composition of the boards at any level; 2) a survey on gender pay gap. The paper will present the first results of these actions.

**5. Conclusions**

"One fit for all" is an invalid answer to achieve gender equality. The Unipd Gender Monitoring Lab is the way to involve people in rising awareness on "gender" not as a "women thing" but as a dimension that regards the welfare of all.

**6.References:**

Badaloni S.-Brondi S:-Contarello A, *The appeal of innovation: new trends in stems from a gender point of view*; GIEE-2011, p. 147-158;

Barnard, S., Hassan, T., Bagilhole, B., Dainty, A.:*A European approach to gender equality in higher education institutions?* BSA Work, employment and society Conference, 2013

# Gender, Care and Green Economy. Towards a resource-light and gender-just society

U. Roehr[1], D. Gottschlich

[1] LIFE e.V./genanet, Germany
[2] Leuphana University, Germany

*Sustainable economy, climate change, care economy, transformation*

## 1. Relevance:

The new concept of a green economy aims at reducing environmental risks and ecological scarcities while simultaneously improving human well-being and social equity. In order to fulfill these goals it needs to be critically analysed from and broadened by a gender perspective.

## 2. Aims & Objectives:

A socially and environmentally just economic system must facilitate a "good life for all". A fundamental shift in economic rationality is required, that includes the care work as important part of the economy. Our mains goals are to bring attention to and to discuss these aspects of a Green Economy, to increase the gender sensitivity of the 'mainstream' research and to build up a network of gender experts working at the interface of care, gender and green economy. Additionally, our research aims at supporting (female) entrepreneurs in implementing green and caring economic activities.

## 3. Methods:

We prepared background papers, discussed them in the women / gender communities (via the umbrella organization German Women's Council) and with women entrepreneurs, have done desktop research in the areas related and an online-survey of female entrepreneurs. Currently, we attempt to bring the results together, to develop recommendations for research institutions and policy, and to strengthen discussion at workshops and conferences.

## 4. Results:

It seems to be hard to combine the issues of care and environmental protection in companies in practice. However, if the care-perspective is broadened beyond care for the family, and is linked to care for collegues, employees, and the company as a whole, as well as for nature, and is extended towards regional and global fairness, we found a strong commitment of female entrepreneurs to these principles. At the same time we found a lack of support as regards information, consultation and subsidies that fit to their (regularly small) companies.

## 5. Conclusions:

Given the huge deficit of gender research in these fields, research programs must provide dedicated funding to gender research in the field of green economy. Transdisciplinary research is of utmost importance for the green economy, as well as a strong cooperation with partners (women organisations, entrepreneurs and their networks).

## References:

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[2] genanet/Gottschlich, Daniela. 2012. Sustainable economic activity: Some thoughts on the relationship between the care economy and the green economy. Berlin.

# The effects of objectified media models on well-being, self-esteem and endorsement of sexist attitudes

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*Keywords: mass media, objectification, well-being, self-esteem, sexism*

**1. Relevance:** Objectification is a form of dehumanization by which individuals are conceived and treated as objects and instruments. Literature has provided convincing empirical evidence for the relationship between viewing objectified media models and women's body dissatisfaction, drive for thinness, disordered eating. However, research on the potential consequences of objectified media models needs to be extended to include other outcomes and should consider the experience of men as well.

**2. Aims & Objectives:** The purpose of the study was to extend past research on the effects of viewing objectified media images. First, we explored the effects of viewing both objectified male and objectified female images (past research has tended to use visual stimuli of only men or women). Second, we considered both male and female respondents (past research has tended to recruit only men or only women). This means that both genders were exposed to male and female models. Third, among the effects, we considered new potential outcomes, i.e. well-being, self-esteem (along three dimensions: performance, attractiveness and social self-esteem), and endorsement of sexist attitudes.

**3. Methods:** Participants were 166 Italian undergraduates (51.8% men) recruited via students' assistance. Each participant was randomly assigned to view one of three advertisements sets (objectified male condition, objectified female condition, control condition). A 3-minutes video segment was created for each condition. The objectified male video contained 6 advertisements which featured male models. The objectified female video included 6 commercials which featured female models. In the control condition the video contained 6 advertisements featuring products without people (bottles, food, animals). Then participants were asked to fill in a questionnaire containing measures of well-being, state self-esteem, and ambivalent sexist attitudes. One 2 (Gender of participant) x 3 (Advertisement Type: objectified male, objectified female, control condition) between-participants multivariate analysis of variance (MANOVA) was performed for each dependent variable.

**4. Results:** Results showed that objectification of men decreases men's well-being, whereas objectification of women decreases women's well-being, attractiveness and social self-esteem. Moreover, objectification of women affects men's endorsement of sexist attitudes, increasing hostility toward women and decreasing hostility toward men.

**5. Conclusions:** Findings are important for many reasons. First, they advance scientific knowledge on the psychological consequences of objectifying media exposure. Second, since many political movements in different countries (i.e. Australia, France, Israel, Italy, United Kingdom) and several Institutions (i.e. the Council of Europe) recognize a pressing need for valid interventions to reduce the negative impact of objectification processes, present results provide both professionals and policy makers increased awareness of the effects of objectified media models. Third, more generally, these findings show that including the gender dimension in research is necessary for properly understanding individuals' functioning. Indeed, different social categories, i.e. men and women, give diverse meanings to their social and cultural contexts and only considering their specific experience sheds light on their complex psychology.

## SCIENTIFIC COMMITTEE

We would like to thank the scientific committee for selecting the abstracts for inclusion and for their overall input and guidance to this year's Gender Summit.

### Ferdinando Boero PhD, Full Professor of Zoology, University of Salento, Italy

Professor of Zoology at the University of Salento, Italy. Associate Member of ISMAR, of the National Research Council. Member or past member of the editorial boards of: Advances in Oceanography and Limonology, Aquatic Biology, Aquatic Invasions, Cahiers de Biologie Marine, Ecology Letters, Italian Journal of Zoology, Journal of Evolutionary Biology. Editor in chief of the Italian Journal of Zoology. Research Interests: Marine Biodiversity and Ecosystem Functioning; Hydrozoan Taxonomy, Biology, Ecology, and Evolution; Life Cycles; Developmental Biology; Evolutionary Ecology; Philosophy of Science; Scientific Museology. Main honors: Prix Manley Bendall 2005, Albert 1er Medal for Oceanography, given by the Institut Océanographique de Paris. My work is cited by the Encyclopaedia Britannica, The Mc Graw Hill Yearbook of Science and Technology, The Mc Graw Hill Encyclopaedia of Science and Technology, The Italian Edition of Mikey Mouse journal, The New York Times, Time Magazine (with a cover story), Frank Zappa.

### Hans M. Borchgrevink MD, Special Adviser, International Staff, The Research Council Norway (RCN), Norway, Europe

Hans M. Borchgrevink MD, is the former Director of Medicine in the Research Council of Norway, and consultant/researcher in audiology and brain function diagnosis. Now chair of WG Monitoring and indicators under the EU Steering Group on Human Resources and Mobility (EU-SGHRM), where he is also Norwegian expert representative. He is Vice-Chair of the EU Advisory Group to Marie Curie Actions, and member of the EU ERA Communication Expert Advisory Group (subgroup gender), the EU Gender Impact Assessment Expert advisory group, and the Science Europe Task Force on Gender and Diversity. Former chair of the WG Mobility in the European Science Foundation Member Organisation (ESF-MO) Forum Researcher Careers, representative of the EU Work Programme Committees on People; Health; Infrastructure; the EU IMI Innovative Medicine SRG, and EURAXESS. He has been organiser/chair/speaker at the European gender Summit 2011 and 2012 and at several EU Presidency conferences on gender and research careers.

### Simone Buitendijk PhD, MPH, MD, Vice-rector Magnificus and member of the Board of the University of Leiden, Netherlands, Professor and Chair of Women's and Family Health at the Leiden University Medical Center, Netherlands

Simone Buitendijk is Vice-rector Magnificus and member of the Board of the University of Leiden and Professor and Chair of Women's and Family Health at the Leiden University Medical Center. Simone Buitendijk studied Medicine in Utrecht. She is a member of the LERU (League of European Research Universities) Steering Group for the advice paper on

Gender in Academia. Simone Buitendijk studied Medicine in Utrecht. She obtained her PhD in Leiden and a Master's at Yale. She then began her work on perinatal medicine. She currently holds the first chair for primary care obstetrics in the Netherlands.

## Daniela Corda PhD, Director, Institute of Protein Biochemistry, CNR (National Research Council), Italy

Daniela Corda is a cell biologist, Director of the Institute of Protein Biochemistry of the National Research Council in Naples, Italy. She obtained her degree in Biological Sciences at Perugia University, Italy and her PhD in Life Sciences at the Weizmann Institute of Science, Rehovot, Israel. She has been working in the signal transduction and membrane lipid dynamics field for more than 20 years, first in Israel, and then at the National Institutes of Health, Bethesda, USA, for her post-doctoral studies. She moved to the "Mario Negri" Pharmacological Research Institute in Milan in 1986, and in 1987 she was one of the founders of the Consorzio Mario Negri Sud, where she served as Head of the Department of Cell Biology and Oncology from 1996 to 2003 and Director of Research and development until 2009. Since 1998 she has been active in science policy focussing on career development in Europe and on gender-related issues within European organisation such as the European Life Scientist Organisation (ELSO), the EC Marie Curie Programme, the Federation of European Biochemical Societies (FEBS) where she now chairs the Working Group on the Career of Young Scientists, and is a member of the genSET Science Leaders Panel.

## Anita Holdcroft MB ChB, MD, FRCA, Faculty of Medicine, Department of Surgery & Cancer Emeritus Reader in Anaesthetics, Imperial College London, UK

Dr Anita Holdcroft MB ChB, MD, FRCA is a Reader in Anaesthesia and Honorary Consultant Anaesthetist at Chelsea and Westminster Hospital. Dr Holdcroft has authored textbooks on 'Body Temperature Control in Anaesthesia, Surgery and Intensive Care' (1979) and 'Principles and Practice of Obstetric Anaesthesia' (2000) and has a special interest in pain in women. She was the first Secretary (1999-2002) and is now the Co-chair (2002-2005) of the Special Interest Group on Sex Gender and Pain of the International Association for the Study of Pain. Her research has lead to invited lectures and presentations in Europe and North America and she contributes as a Board member and Editor of Europain and its associated Journal. Dr Holdcroft is the elected President of the Forum on Maternity and the Newborn at the Royal Society of Medicine, London. It was her original research that lead to the findings of brain changes during parturition and to the development of an MRC multicentre clinical trial of cannabinoids in postoperative pain (CANPOP).

## Elizabeth Pollitzer PhD, Director, Portia Ltd, UK

Elizabeth Pollitzer PhD is co-founder and Director of Portia, an organization devoted to improving gender equality in STEM and promoting the inclusion of the gender dimension in STEM. She has 20 years' experience teaching and researching in the Departments of Computing and Management at Imperial College, University of London. Her original training was in Biophysics. She now applies

this scientific background to her work as director of Portia. Elizabeth has over 15 years experience in the gender and STEM field, she is also an expert adviser on gender issues to the European Commission.

## Jurgen Popp PhD, Scientific Director, Institute of Photonic Technology, University of Jena, Germany

Jürgen Popp studied chemistry at the universities of Erlangen and Würzburg. After his PhD in Chemistry he joined Yale University for postdoctoral work. He subsequently returned to Würzburg University where he finished his habilitation in 2002. Since 2002 he holds a chair for Physical Chemistry at the Friedrich-Schiller University Jena. Since 2006 he is also the scientific director of the Institute of Photonic Technology, Jena. His research interests are concerned with bio- and material-photonics. In particular his expertise is in the field of Raman spectroscopy and in the development of innovative Raman techniques should be emphasized. The scientific results of J. Popp were published in more than 250 scientific articles in premier peer-reviewed journals. Jürgen Popp coordinates the European Network of Excellence "Photonics4Life" and is Editor-in-Chief of "Journal of Biophotonics". Since 2009 he is Fellow of the Society for Applied Spectroscopy.

## Brigitte Ratzer PhD, Head of Center for the Promotion of Women and Gender Studies, Vienna University of Technology, Austria

Brigitte Ratzer studied Chemical Engineering at Vienna University of Technology (VUT) and made her PhD in Social Science Studies at VUT. Longstanding lecturer at various Austrian universities and junior researcher at VUT with research-projects in the fields of Bioethics and Biomedical Technology-Assessment, Social Studies of Knowledge and Feminist Research in Science and Technology. Since 2005 Head of Center for the Promotion of Women and Gender Studies, VUT. Currently engaged in building up a network for transferring feminist and gender knowledge to engineering research groups and to the curricula.

## Curt Rice PhD, Professor, University of Tromsø, Norway, Fellow, Netherlands Institute for Advanced Study (NIAS), Netherlands, Head, Norway's Committee on Gender Balance in Research (KIF), Norway

Curt Rice is a professor at the University of Tromsø and is currently a Fellow at the Netherlands Institute for Advanced Study (NIAS), where he is writing a book on gender balance. He leads Norway's Committee on Gender Balance in Research. He also chairs the Board for Current Research Information System in Norway (CRIStin) and is a member of the Board at the University of Tromsø. Previously, he has served as Pro Rector for Research and he was the Founding Director of the Center for Advanced Study in Theoretical Linguistics: A Norwegian Centre of Excellence (CASTL).

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