11TH EUROPEAN CONFERENCE ON GENDER EQUALITY IN HIGHER EDUCATION

FECYT
INNOVACIÓN

Coordination:
Spanish Foundation for Science and Technology (FECYT)

Edition and Design: Divulga, SL

e-NIPO: 831210316

Publication included in the editorial program 2021 of the General Technical Secretariat of the Ministry of Science and Innovation.

General catalog of official publications: https://cpage.mpr.gob.es

The XI Conference on Gender Equality in Higher Education was organised by:

- Ministry of Science and Innovation
- Ministry of Universities
- Universidad Politécnica de Madrid (UPM)
- Spanish Foundation for Science and Technology (FECYT)

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INTRODUCTION

The European Conference on Gender Equality in Higher Education was held online on September 15-17, 2021. It was organised by the Ministry of Science and Innovation and the Ministry of Universities, in collaboration with the Universidad Politécnica de Madrid, and the Spanish Foundation for Science and Technology.

It is the 11th in a series of European conferences which started under the initiative of the University of Helsinki in 1998. Since then, the conferences have taken place in ten different locations across Europe, from north to south. What makes them so special is that they are not the normal academic conferences: they are international meeting places that foster dialogue and knowledge exchange between stakeholders working for gender equality, diversity, and inclusion in academia and research. They can be considered an agora for the European and international community engaged to make academia fairer, more gender-equal, more inclusive, more diverse. As we all know, we are not there yet.

There are persistent problems linked to structures, cultures, and knowledge production and knowledge content to tackle. Even though new challenges must be faced all the time, we are also finding solutions and innovative strategies for them. As Liisa Husu, Professor of Gender Studies at Örebro University, stated in the introduction of the opening lecture, many of the topics discussed during this three-day conference have been previously addressed, as for example, sexual harassment in research and academia which was already discussed in the first conference in 1998. The European Research Area needs these exchanges to be maintained.

Since 2003, the European Union has provided every three years a range of indicators on gender equality in research and innovation at pan-European level to examine the impact and effectiveness of policies implemented in this area, the so-called SHE Figures. Among other things, the SHE Figures examines the gender balance within various academic positions. The latest figures from 2020-2021 show that women in the EU dominate the academic environment when taking student numbers into account. But, when analysing the academic staff data, women represent 42% of it but hold only 26% of the full professor positions. The SHE Figures also indicates that women are more often employed by means of

temporary precarious contracts. It may therefore not be surprising that women are less successful in obtaining research funding than men.

As expressed by the European Commission there is a strong commitment in advancing gender equality in research and innovation. More specifically, gender equality and gender 'mainstreaming' (the integration of a gender perspective in the whole policy cycle) in academic research is one of the priorities of the European Research Area, and the promotion of both of these policies is among the aims of the EU's research and innovation programmes.

In Horizon Europe, gender equality is both a 'cross-cutting' issue and a specific area of the 'Widening Participation and Strengthening the ERA" programme, which funds specific initiatives in support of the institutional change towards gender equality.

It is crucial to take the gender dimension into account because it helps researchers avoid gender bias, to rethink standards and reference models and because it adds value in terms of excellence, creativity, and gender-responsive transfer of knowledge.

WELCOME BY AUTHORITIES

Diana Morant, Minister of Science and Innovation

"There is a clear imbalance in the research and innovation field that prevents us from using all the talent in society. The diagnosis is clear and will be more comprehensive and more precise with the results of this conference that we are inaugurating today.

> "WE ARE TAKING ACTION BECAUSE WE NEED MORE WOMEN LEADERS TO INSPIRE THE NEW GENERATIONS"

The gender gap in the field of science and innovation is evident, as is the progress we are making towards real equality in this field.

From the Ministry of Science and Innovation we are doing a great effort to make the gender gap visible and to increase awareness raising in society on its consequences. We can neither limit nor condition the dreams and goals of girls, nor can we overlook the talent and diversity of ideas that the half of the population brings to face the global challenges of our time.

I would like to take advantage of this conference to announce the first call for proposals to be launched by the Ministry through its Center for Industrial and Technological Development, CDTI, aimed at supporting women's technological entrepreneurship. We will allocate more than five million euros to fund, at least, fifteen new companies whose leading teams are mostly made up of women, and whose capital remains in the hands of women until the end of the project.

We are taking action to increase women's participation in the innovation sector because we need more women leaders to inspire the new generations of early career researchers and innovators. We also need the discussions and results of this conference, which gives us a unique opportunity to learn from other experiences from Europe and beyond to advance gender equality in research and innovation. Your success during these days will be the success of all of us."

Guillermo Cisneros Pérez, Rector of Universidad Politécnica de Madrid

"What works best when it comes to research productivity, university teaching and innovation, is to do things without distinction and we cannot do that without half of the population of the planet. STEAM vocations - adding the A for Arts since we are in a university that teaches design, architecture, engineering- should not exclude anyone, moreover, equality should be encouraged from birth and without stereotypes.

> "WHAT THE UNIVERSITY MODELS ARE DOING, PROGRESSIVELY, IS TO INCLUDE GENDER EQUALITY IN TEACHING, RESEARCH, KNOWLEDGE TRANSFER AND ALL OUR ACTIVITIES"

The Sustainable Development Goals to which we also owe ourselves, the 17 points on which the world has been able to agree, are a new declaration of human rights, shorter and therefore, with greater strength of focus on each of them. The universities are committed to these 17 goals. One of them is full gender equality. What the university models are doing, progressively, is to include gender equality in teaching, research, transfer and all our activities.

There is no university model right now that does not address jointly aspects such as digitalization and inclusive gender equality. The fist one is important due to the current situation, which has accelerated the digitalisation of society. The other is the issue of inclusion and equality. These two elements are nowadays intersecting issues included in any university strategy. At UPM we are involved in initiatives such as *Mujer e Ingeniería, Quiero ser Ingeniera,* and in entrepreneurship competitions we organize, where there are more and more women finalists. It is a path towards real gender equality that we have embarked. This path has no turning back, we do not want to turn back and of course, any help will be welcome."

Imma Aguilar, Director of FECYT

"The Spanish Foundation for Science and Technology (FECYT) aims at strengthening the link between science and society through the promotion of an open and inclusive science, as well as scientific culture and communication. It is committed to make gender equality a reality in R&I, and as part of our strategic objectives, mainstreaming a gender perspective in all of our activities and projects is fundamental. Along these lines, FECYT has recently approved its first Gender Equality Plan.

> "INTEGRATING A GENDER PERSPECTIVE IN ALL OUR ACTIVITY IS KEY TO STRENGTHEN THE LINK BETWEEN SCIENCE AND SOCIETY"

The Foundation keenly contributes to an active role of the Spanish public institutions, mainly the Ministry of Science and Innovation and the State Research Agency, in their gender equality policies in research and innovation, nationally and in the European Union.

The advancement of gender statistics and indicators that can ultimately serve as a basis for policy development is also one of our main activities, developed in cooperation with the Ministry of Science and Innovation. FECYT has also been developing different actions aimed at eliminating gender stereotypes in scientific vocations and increasing the visibility of women researchers and innovators, as well as their contributions.

Finally, FECYT aims to promote gender research that is able to produce new knowledge to address the social challenges ahead embodied in the UN Sustainble Development Goals. The collaboration in the organisation of the XI GEHE Conference responds to that commitment. It was clear from the beginning that Spain should host this academic conference on gender equality in higher education given the momentum that gender & science policies have had in our country, as well as in our Foundation. Therefore, FECYT has prepared these XI GEHE conference proceedings with the aim of spreading the messages and findings of all the speakers and contributors to the conference, as well as its main conclusions."

OPENING LECTURE

By Thamar Heijstra: "Academic career-making in a gendered environment: Men as the norm, women as the deviant and feminists as double deviants."

Thamar Heijstra is an Associate Professor of Sociology in the Faculty of Sociology, Anthropology and Folkloristics at the University of Iceland in Reykjavik. She has been publishing internationally in Academic Career Making, Gender Budgeting and Academic Housework. Her main areas of expertise are Organisational Culture, Work Conditions, Work-family Balance, Well-being, Gender Budgeting and Gender Relations.

In her opening lecture "Academic career-making in a gendered environment: Men as the norm, women as the deviant and feminists as double deviants", Thamar Heijstra described a gendered academia referring to a traditional male dominated, bureaucratic institution in which structural changes regarding gender equality are hard to achieve. "In this system -she explained- men are the norm and there are assumptions and expectations about gender appropriate rules. For example, male occupancy of senior positions is seen as normal or the norm while the same counts for women in lower academic positions, that as well is seen as

the norm." Adding to the challenges, she described a neo-liberal system that most universities operate currently under which ostensibly enhances transparency, while giving the false impression that gender issues within academia have fundamentally been dealt with.

The academic environment is also gendered in the way that teaching responsibilities are gendered and caring is feminised and undervalued, according to the researcher. As various studies show, men are seen by students as intellectuals and scientists while academic women are stereotyped as caring female teachers. Moreover, women are dominating in the social sciences and humanities fields, which are less prestigious and less well funded than STEM fields, but with higher student-teacher ratios and fewer career opportunities. In general, women seem to be taking on the bulk of teaching and academic housework activities or "secret servers", as Hanna Soley quoted. "Unfortunately, this is a trend that has further increased during the Covid-19 pandemic, that women are taking care of more of those academic housework activities", said Heijstra. Overall, women have less research time on their hands which is a problem as the male-academic work culture associates long working hours with workplace loyalty and commitment, and considers these factors essential for career progression.

Like other academics, feminist academics have to be excellent at the academic game: they need to obtain grants, publish in high-ranked scientific journals and present their work globally. But being a feminist also means wanting to establish change which is then added to the total academic work package. Very frequently, feminist scholars become caught up in what Hark terms 'the precarious precondition for change': to have an effect within academia, one must first understand and live up to the rules of the conventional academic game. The challenge then lies in playing a game that is not exactly feminist-friendly, but also trying to establish change within that same system: they will have to "work the cracks", described by Heijstra as a form of resistance available to those situated at the margins and who are familiar with the system and know how it works, and are, at the same time, able to see the cracks, due to their outsider's status. "Working the cracks is then a way to find clever and creative solutions to resisting and coping with a gendered academic environment. In this way

feminists can use their double deviant status to their own benefit and use it as a strength and form of empowerment."

Under these circumstances, how do women that become successful in academic career-making do it? Heijstra described the results of the interviews conducted by her and a colleague to 12 academic feminists in the twilight of their academic careers. How did they manage to work the cracks and come out as our role models? Many of them mentioned that their main accomplishment, and the main rewards, were about teaching and creating opportunities for others, eventually causing a ripple effect. Sharing knowledge, working together, belonging to a community, and mutual trust were also seen as crucial elements of the peer support needed while working the cracks. "The stories of the women show the continued importance of women´s and feminist solidarity. Without collaboration and support, chances are slim that one will be able to reach the top of the academic hierarchy and work in the cracks efficiently".

"Enjoy what you do, endure and persevere, believe in yourself, invest in feminist solidarity, and think about your health, will not in themselves bring revolutionary change within the neo-liberal university. They are merely ideas of how to work with and around the current system, working the cracks as it were. They may even sound as women once again bending out of shape to fit the masculine mould. However, they can also be taken as a way to survive and possibly thrive in the neo-liberal institution and thus in the long run add to the goals of changing academia and society", she concluded.

ROUND TABLE

GE policies in R&I

Chair: **Zulema Altamirano,** Head of the Women and Science Unit, MCIN

Panellists: **Anne Pépin,** Senior Policy Officer from the European Commission
Lina Gálvez, Vicepresident of the Committee on Industry, Research and Energy (ITRE), European Parliament
Liisa Husu, Professor of Gender Studies at Örebro University, coordinator of the GEHE network
Eileen Drew, Director of the Trinity Centre for Gender Equality and Leadership at Trinity College Dublin
Gulsun Saglamer, President of the European Association of Women Rectors, Former Rector of Istanbul Technical University
Lucia Martinelli, President of European Platform of Women Scientists

Gender research has the potential to change policies and advance gender equality in society. The status of gender studies in the EU although improved in the last decades as described by Lina Gálvez, vicepresident of the Committee on Industry, Research and Energy (ITRE) in the European Parliament, shows a diverse picture across Europe, from direct anti-gender attacks to emerging developing non institutionalization, to rather strong institutionalization in some countries. To Professor Saglamer, it´s important to try to understand who takes these negatives actions and why. "It´s for sure that some political power-holders are using this issue for their election purposes in order to attract more conservative groups to vote for them", she explained, citing as example the exit of some countries such as Turkey from the Istanbul Convention because of political reasons.

"These kinds of negative steps create tension on those countries and beyond, and make feminist researchers and women feel helpless. It takes a lot of effort and time to get such conventions to be accepted by nation states. Therefore, political power should support gender equality, otherwise there are no sound results achieved in those countries. First, we need to make sure that gender equality is a priority of the agenda of the leaders, then the institutions may start up an inclusive change process and the value of gender studies might have a better chance to be widely recognised so that the academics working in the area of gender studies will also have opportunities for recognition and funding", said Professor Saglamer.

Horizon Europe was warmly welcome by the participants: "a new kind of initiatives and broadened understanding of what gender really means in society", in the words of Liisa Husu, Professor of Gender Studies at Örebro University. Achieving a union of gender equality is one of President Ursula von der Leyen's political priorities and promoting gender equality, increasing women's participation in research and innovation is really a core objective for the commissioner Mariya Gabriele, according to Anne Pépin, Senior Policy Officer at the European Commission. "This has been translated into a high level of ambition in the commission's gender equality strategy for 2020/2025, but also in the priorities, the values, and the principles of the new European Research Area", explained Pépin.

The heightened provisions of gender equality introduced in Horizon Europe include the requirement for public bodies, research organisations, and higher education institutions to have a gender equality plan in place, as an eligibility criterion to receiving funding from the programme. For Professor Martinelli, it is important to see this not only as bureaucracy, but to really see it as an effective measure to include gender issues in the careers, as well as in the whole cultural landscape of a new society. Martinelli cited the Covid-19 pandemic as an example of the importance of intermingling the natural sciences with the humanities and gender studies as the problems we now face involve biology, natural sciences, social sciences, economy… "When we are now talking about resilience to build up a new society to recover from this pandemic we have to think what it means. Does it mean going back to a status quo or really changing all the society, the cultural landscape?

In the same vein, Gálvez mentioned the importance of the digital and green transitions, not only because the best jobs will be created there, but also the cosmovision of our future. "We really need feminists and gender studies knowledge to be present [in these transitions], otherwise we will be building a knowledge that again, is only partial and androcentric as the one we built in the past".

In this regard, Professor Drew pointed out an important lesson from successful participatory mechanisms in Ireland, like gay marriage or the abortion referendum: the need to have a forum in which these issues can be debated safely and not become political, and to use the lobbying power of feminist researchers and scholars to be heard and give inputs. This has to be evidence-based and drawn upon internacional and national best practice experiences. And it has to stress that gender equality in society and in the university sector is not at the price of excellence. Male participation, communication and networking are also vital for advancing gender equality and gender studies, and to translate them into policies and real actions.

CLOSING LECTURE

By Marcela Linková, Chair of the ERAC Standing Working Group on Gender in Research and Innovation: "Building feminist futures in European research: major shifts, continued contestations, new challenges revisited"

At a policy level, Marcela Linková stressed the sustained pressure applied in the last two years which culminated with the adoption of the new rules for Horizon Europe, as well as the promising developments taking place in many member states and associated countries, such as Spain, Ireland, Netherlands, Austria, or Czech Republic. Slovenia, which is holding now the presidency of the Council, launched its presidency under the Ljubljana Declaration supported by the current and future trio presidencies.

It is compulsory to have at this present moment a policy structured at a negotiating table able to coordinate, exchange, plan, and to push. "The most pressing need that we have now in the member states that are discussing the advisory structure for the new period of ERA implementation is to recognize this, and to maintain an advisory body for gender equality." Some of the work carried out during the last four years by the ERAC Standing Group on Gender in Research and Innovation includes the analysis of the implementation of

measures for gender equality, the implementation of targets and quota, delivering policy advice and recommendations on gender-based violence in academia at national level, determining the impact of Covid-19 from a gender perspective, and studying the gender bias in research funding.

One aspect now firmly established is that the development at policy level for gender equality in research and innovation is highly uneven across countries in the EU. But despite these continued policy differences, one important idea from Angela Wroblewski's work is that the effort to coordinate gender equality policy in research and innovation at the European level has effects. Those countries that had gender equality policies, prior to the coordination through the national action plans, intensified their work and engagement. What is even more important, for many countries that did not have any policy in place, the European Research Area had a structuring and catalyzing effect and, in many countries, it has seen further developments since its adoption.

"The exchanges, sharing and learning from each other, as well as the support one feels, are hugely important. It is of course not only the adoption of policies that matters, but how the policies are implemented, and what impact they have in the long run. And how this applies to both the policy making process, national authorities, as well as the institutional policies adopted by universities and research organizations. […] I want to recognize the incredible importance of having a community, a community that expands beyond one´s institution, one's country. A community I have personally felt these 20 years to have to fall back on when things become really difficult. We will need this community perhaps more than ever, as we embark on the completely unchartered territory of obligatory institutional gender-equality plans, where the threat of burnout and closed doors is real. And I hope that perhaps next time, we could, for the first time, meet in one of the post-socialist countries in Central and Eastern Europe."

CLOSING REMARKS

Raquel Yotti, Secretary General for Research, Ministry of Science and Innovation

"I would like to congratulate you all for your involvement, participation and support in the celebration of these three days of conference. Speakers, members of the scientific committee, local committee, chairs and researchers... Thank you all for your participation.

This conference has been an unique opportunity to learn and promote high quality research and gender studies, giving researchers from all around Europe the opportunity to engage with other researchers, and define together the next steps to end with the gender gap that remains in research and innovation. We, not only as the Ministry of Science and Innovation but also as central government, are firmly committed to advance and make gender equality a reality in the lives and working environments of researchers. We are very glad we have such an ambitious agenda and thanks to this conference, we, together, are producing valuable resources that will definitely contribute to advance our policies related to gender equality in research and academia.

I'm sure that there is a common goal among researchers and institutions involved in this conference to ensure that studies and public policies take into consideration the different characteristics, needs and situations that we, women and men, face."

The results and recommendations from this conference are very relevant for us in the Ministry of Science and Innovation. We trust you, you are the key researchers, you are the experts in the field and we need you to guide us and help us finding best approaches and initiatives to advance together to ensure gender equality within the field of research and innovation in Spain and in all around Europe. I hope you have had a very fruitful discussion during the conference. Thanks once again for your participation and all the success for the future. Thank you very much."

ORAL COMMUNICATIONS

Due to space constraints and in order to avoid repetitions, in those abstracts with multiple authors only the institution of the first author has been mentioned.

Gender precariousness and networks in the neoliberal university

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topics: GENDER AND INTERSECTIONALITY

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Networks; neoliberal academic; early-career researchers; intersectionality; precarity

This paper examines how early-career scholars make sense of networking practices in relation to their precarious employment situation. The paper is based on 19 in-depth, semi-structured interviews with early-career researchers (ECRs) across four faculties at Aarhus University (AU) in Denmark. It contributes to the literature on the role of networks vis-à-vis academic career advancement, by analyzing the lived experiences of ECRs through the lens of the precariousness concept (Herschberg et al., 2018) in the context of increasing neoliberalisation of the Danish academy. The idea of the neoliberal university refers to the transferal of neoliberal logics into university governance, incl. the introduction of performance metrics for research output such as the aso-called Research Excellence Framework in the United Kingdom, which has contributed to creating a hyper-competitive environment characterized by a punishing intensification of work (Gill, 2009: 231). In addition hereto, neoliberalism has affected academic employment conditions by promoting non-standard and contingent work which overwhelmingly affects ECRs which, in combination with strengthened mobility-requirements, force young scholars to pursue vacancies across the globe. Through subtle, informal pre-selection dynamics, networks enable access to information about vacancies and affect hiring decisions (Benschop, 2009), despite the existence of policies professing open and transparent recruitment procedures. Building on the above outlined conceptual framework, this paper takes a qualitative-interpretivist approach in the analysis of 19 in-depth, semi-structured interviews with ECRs from all main areas at AU. The study was carried out as part of the research project Gender and Networks in Early-Career Academic Advancement[1], which was funded by AU as part of its Gender Bias in Research initiative in 2018. The analysis points to the centrality of networks for the career development of the interviewees. Most of the respondents knew their current/former PhD advisors from their years as students (had worked for them as teaching or student assistants etc.), and were actively encouraged by the advisor to apply for a PhD scholarship. Also, a good relationship with the advisor also appears to facilitate

that ECRs are almost automatically embedded into networks when they start their academic careers, which seemingly increases the likelihood that PhDs will stay on as postdocs at AU, once they finish. The analysis shows that being a woman is perceived as a barrier for career progress in academia by both male and female respondents. Interviewees experience that male professors tend to have and promote young male protégés in their networks, and it can be difficult for female as well as male researchers of different cultural backgrounds, often international ECRs, to participate in social events which is perceived as important. This way, the study indicates that in particular international, female ECRs may face intersectional barriers, which risk limiting their chances disproportionately of successfully progressing in their research careers.

[1] Https://medarbejdere.au.dk/strategi/ufes/genderbalance/genderbias/

Transforming Universities Towards Gender Equality: Inclusion, Intersectionality and Sustainability

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS
GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender equality, gender action plan, change, higher education, universities, Turkey, inclusion, sustainability, intersectionality

Recently, important developments have taken place regarding gender equality in higher education in Turkey. Many universities in Turkey implemented policies geared towards the prevention of sexual harassment on campus and designed university-wide courses on gender equality. Some universities developed and implemented gender equality actions plans and others are starting similar processes either in the scope of EU funded projects or with the efforts of academics involved in gender studies. However, there are also setbacks and resistance on many levels regarding the institutionalization of gender equality in universities. Based on expert interviews with academics who have been leading such efforts for gender mainstreaming in universities and the evaluation of a workshop on gender equality in higher education which took place in Istanbul in November 2018, the paper sheds light onto the structure and format of institutional transformation processes in

universities and identifies three models of change: a top-down model where main actors are academics, where change is mostly institutional with administrative support legitimized by EU projects, a bottom-up model where academics-students as well as local civil society actors are involved where actions are mostly directed to awareness-raising, and a third model where individual academics push for gender equality in the lack of any collective organizing or support. The paper proposes a hybrid model of participatory change to satisfy the shortcomings of gender mainstreaming efforts identified on field which are related to inclusion, intersectionality and sustainability.

EU Policies meet Socialist Legacy: Who Teaches Whom about Gender Equality in Research Sphere

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topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** ERA policies; gender mainstreaming; transfer of knowledge; post-socialist countries

Policies of the European Research Area, specifically those dealing with gender equality in research and higher education, are based on underlying assumption that Eastern European countries are underperforming and that there needs to be transfer of knowledge from more developed countries, predominantly in North-West Europe. These EU policies, as well as financial scheme of SwafS (Science with and for Society) and accompanying FP7 or H2020 projects, have introduced new jargon and institutional mechanisms which are increasingly becoming a way to mainstream principles of gender equality into academic sphere. Many of these gender mainstreaming measures boil down to ensuring gender equality by enabling women to secure job and career progress, while balancing it with care work in private life. Therefore, the SwafS projects dedicated to gender equality are often designed in such a way that good practices are transferred from institutions in higher performing countries (by the rule: West) to those in lower performing countries (by the rule: East). However, many of the gender equality measures already existed in socialist states as part of the welfare state mechanism and social protection policies. On the basis of participating in three such EU projects, the author who comes from post-socialist country (Slovenia) reflects on conceptual

underpinnings, as well as practical challenges, of the EU policies and projects on gender equality in academia. The paper first presents how imagined trajectory of knowledge transfer (that is from West to East) is ingrained in the documents that define and condition design of the European projects dedicated to improving gender equality in research and higher education: to certain extent project proposals need to follow this trajectory in order to be successful, that is financed. Then the paper describes how post-socialist setting makes certain gender equality measures imported from the Western institutions obsolete and/or ill-fitting, especially those in domain of work-life balance. Finally, the paper discusses to what extent principles of (what we now refer to as) gender equality have been part of lived reality of scholars in socialist Yugoslavia.

Resistances to mainstreaming gender into university research policy: a comparative case study of Catalan universities

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topics: GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Gender

Despite two decades of EU objectives for mainstreaming gender in research, the adoption of university equality plans and creation of equality units as required by national and regional legislation, women remain under-represented as researchers in universities across all Spanish regions and academic research does not tend to incorporate the gender dimension (Pastor and Acosta, 2016; European Commission, 2019:176). Building upon feminist institutionalist theory, this qualitative investigation compares the efforts of three Catalan universities to mainstream gender in the ambit of university research, centring on the resistances that thwart the effective implementation of equality actions identified by gender experts and research managers. Finding different levels of commitment to and execution of a mainstreamed approach, it concludes that measures to incentivise and boost the visibility of gender or female-led research as well as training iniciatives have greater implementation success and face less resistance than those that attempt to reshape wider institutional structures such as reconciliation policies or actions around selection and evaluation processes. Institutional resistance in the form of limited resources and non-engagement, as well as individual resistance founded upon notions of meritocracy play a

key role in their non-implementation. The in-depth, comparative approach highlights the dynamics of resistance across different institutional contexts. It also provides evidence for the effective implementation of equality actions in universities in the absence of a mainstreamed approach where there is maintained high-level support for gender equality and sufficiently-resourced equality structures.

The Role of Management in Gender Equality Initiatives - Change and Resistance in a Male-dominated part of the Academy

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topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender equality resistance; Changing organisational discourse; Managerial responsibility; Management training; Raising gender awareness

Research on gender equality projects has found that management is a key factor for success, especially, the degree of managerial responsibility, impact and organizational basis, covaries with the project's long time success rate. The studies show that policies, statements etc. are not enough; management responsibility must be followed up by line responsibility. Here we describe the steps and method used in a process changing the discourse of an organization. We draw on data collected in an action research project at a STEM faculty of a large Norwegian University. The collected data; interviews, observations and participatory research of twelve half day workshops with ca 200 male and female ph.d supervisors, is used to examine the impact the managerial activity had on the change of discourse in the organization. We propose a theoretical model, in order to understand our results. The data first shows an initial situation with limited management involvement. This included a number of workshops displaying a tendency towards strong resistance regarding the idea of academic organizations as gender unequal. Analysing this situation, we employed a new method of greater management involvement, including a five-day gender equality program for the faculty management team. A key matter was to shift the burden of problem recognition from those experiencing the effects of gender inequality to the management.

The result of the program can be summarized as follows: The management's task is to take responsibility for the analysis of the organization as gender unequalThe management team needs development as a group to take on this responsibility Our data shows that management involvement is important but needs to be combined with methods to change the organization as a whole. We developed a method to involve the organization, focused on raising awareness and curiosity regarding how gender actually works in the organization based on Acker (1992/2006). The combination of these steps and methods management involvement shifting responsibility for the problem and offering a method for participants own investigation of gender in the organization created a new discourse were the workshop discussions changed from resistance, denial and ambivalence, towards an interest to understand one´s own role and possibility for improving gender equality. The data shows that when the faculty management clearly stated that the faculty still had gender-related challenges, the discourse within the organization changed. However, even more important for the change of discourse was the choice of theoretical approach and method for the organization's gender equality work. When the management team contributes to the knowledge base through education in a gender perspective and offers a method for the organizational work that all employees can use in their everyday life, opportunities for change at all levels in the organisation are created.

Building Gender Equity in the Academy: Strategies from US ADVANCE Institutional Transformation Projects

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** `Institutional transformation, strategic change`

For two decades, the ADVANCE program, funded by the US National Science Foundation, has supported Institutional Transformation (IT) projects in US academic institutions to develop equitable working environments for academic women scientists, engineers and mathematicians. The working premise of ADVANCE is that persistent, everyday sexism is rife within academic structures and systems initially crafted to serve masculine models of

careers. Changing this situation thus requires a comprehensive and systemic approach that operates at multiple levels and deploys multiple levers of change. This theory of change has been explicit in the ADVANCE call for proposals since its beginnings, and represents a shift from past programming that was targeted at women as individuals, seeking to fix women rather than to fix what was broken about their workplaces (Laursen & De Welde, 2019). Our research team has studied the experiences of these grant-supported systemic change projects that sought to change the working environment for academic women in STEM. Drawing on interviews, documents, and case studies, we have elucidated twelve broad types of strategic interventions that ADVANCE IT projects have used with some success. The twelve interventions are conceptually grouped as institutional responses to four different aspects of gender inequity: biased evaluation processes, unwelcoming work climates, employment structures that do not accommodate personal lives, and inequitable opportunities for advancement. Drawn from work done by previous ADVANCE IT awardees, all are real strategies that institutions have used to change the numbers, success, and experiences of women scientists and engineers. Our forthcoming book (Laursen & Austin, 2020) and our online StratEGIC Toolkit highlight different variations of each, their affordances and limitations, and how institutions have used them. Importantly, these are not single-shot approaches: multiple interventions must be combined into systemic change initiatives that are adapted for specific institutional contexts. Strategically combining several inteventions leverages their individual strengths to craft stronger synergies; in this way, the change effort becomes comprehensive rather than piecemeal (Laursen, Austin, Soto, & Martinez, 2015). While these interventions originated in institutional projects focused on the science, technology, engineering and mathematics (STEM) fields, where women are strongly underrepresented, many are portable across the institution. Many also can be adapted to enhance the representation, visibility and leadership of people from other groups that also underrepresented in academic STEM, such as academics of color; lesbian, gay, and bisexual academics; immigrants; and people with disabilities. In this presentation, I will highlight key interventions identified our research and offer examples to argue that they have more impact when they are both adapted to local context and connected to other strategies as part of a larger change plan. Based on my observations and conversations with leaders of TARGET Taking a Reflexive approach to Gender Equality for institutional Transformation, a project funded by the European Union under Horizon 2020, I will offer some reflections and questions to compare and contrast US and European approaches to institutional transformation.

Gender stereotypes and feminization in French military engineering Higher Education Institutions: a lexical study of their public documents

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Curriculum, military engineering, feminization, institutional communication, gender stereotypes

Over the last few years, the French army has experienced difficulties to attract and recruit.In the meantime, feminization and related policies have become critical issues, increasing the sociopolitical pressure towards Armed Forces.Still, up to this day, feminization in military engineering Higher Education Institutions (HEIs) remains low (18,8% of female students in 2018-2019), as well as in other engineering HEIs (28,9%)[1]. The difficulty to attract young women for them is enhanced by the cultural perception and the stereotypes associated to both military and engineers. In such a context, military HEIs have already adapted their communication or developed initiatives in order to encourage women to get involved in engineering training. However, figures show that the measures taken still have not found their objective.We postulate that there are other factors behind this low rate. This research examines HEIs recruitment practices in order to understand and evaluate the impact of social and political injunctions about feminization, in relation with the stereotypes and representations associated.How can these military HEIs adapt their enrollment public strategies to allow young women to overcome the stereotypes attached to military engineering HEIs? What constraints do they have to take into account? How do they try to reach a larger audience? Are gender stereotypes present in institutional communication ? Under what form ? Is feminization really impacting their curricula and their culture? Our work relies on literature about gender and Armed Forces from a socio-anthropological approach (Tabet, 1979; Testart, 2014), to highlight the commonly accepted symbolic between male/female and military related characteristics that are blood, weapons and combat. We then move to examine the curriculum sociology framework to situate the role of public documentation. According to Forquin, curriculum is to be understood not only as the programmes content but as the overall elements about selection, organization and knowledge transmission (Forquin, 2008). Our investigation field is based on engineering

HEIs attached to the French Ministry of Armed Forces which represent a panel of seven schools, some leading to the grade of officer as well as to the engineering diploma, mainly in general engineering. Audio-visual and visual documentation from those schools will also be taken into account. The public institutional documentation will be gathered on the HEIs websites.The data collected will be analysed through an informatic lexical analysis, performed with Nvivo.The analysis grid will allow us to emphasize if and how the military HEIs deal with the stereotypes and/or how they bypass them. The study will also highlight how the military HEIs take into account the injunctions through the documentation studied.This will be a way to investigate further the place and representation of both masculine and feminine values in the studied organizational context.

[1] https://cache.media.education.gouv.fr/file/2019/51/6/depp-rers-2019_1162516.pdf, p. 169

The impact of the gender gap in academia on research agenda setting

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Research agendas; institutional characteristics; gender inequalities; academic profession; collaboration

Women and men in science face differing challenges, as evidenced by the fact that women are underrepresented, constituting only 28.8% of the total number of academics as of 2015 according to UNESCO data. Many metaphors have emerged to explain this phenomenon, as is the case of the leaky pipeline, relating to high career attrition rates in women, the old boys network, which relates to the dominance of men in academic committees, and others. This gender gap has been studied from various perspectives, including productivity differentials between men and women, family and children-related career interruptions, and access to collaboration opportunities. In this study, we aim to study the phenomenon from a diverse perspective how the gender gap influences individual research agendas. This is done using a framework on research agendas comprised of eight distinct dimensions (Scientific Ambition, Convergence, Divergence, Discovery, Conservative, Tolerance to Low Funding, Collaboration, and Mentor Influence), and a second framework which evaluates

the organizational dimensions of the research workplace (Autonomy, Organizational Commitment, Social Satisfaction). Career data is also used. Through Multivariate Analysis of Variance (MANOVA) and Structural Equations Modeling specifically, path analysis coupled with multi-group analysis the effects of organizational aspects on research agendas can be compared between women and men, offering new insights on how the choice of research agenda is gendered. The results show that the research agenda preferences of women are less risky and less focused on fields with the potential to lead to scientific discovery but organized in a more collaborative way than those of men. Institutional characteristics are found to influence the research agenda preferences of both women and men. Autonomy is particularly critical for women in order to enable the development of more ambitious, collaborative, riskier and multidisciplinary research. Organizational commitment is slightly more detrimental to the agenda setting of women when compared to men. Social satisfaction leads to more ambitious, discovery-driven, and divergent agendas, but only in men. Women require more time after conclusion of the PhD to develop riskier agendas, but previous research output, the number of co-authors, and mobility do not influence their research agendas. These findings shed new light on the gender gap in academia, by showing how gender is embedded in institutional contexts and impacts in the production of knowledge as well as the professional progress of women and men in academia.

Reflections on the 2021 eligibility criterion based on collective experiences working with GEPs

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender equality plans, development, implementation, communities, processes

2021 is the first year where any European Research Performing Organisation (RPO) developing and implementing a Gender Equality Plan (GEP) will do so knowing that the European Commission now includes having such a plan as an eligibility criterion for funding.2021 is also the year where we at the University of Southern Denmark are two years

into our Horizon2020-funded 4-year project on Supporting and Implementing Plans for Gender Equality in Academia and Research, SPEAR, which counts 11 partners from 9 European countries. Prior research and projects have accumulated invaluable knowledge for us: a systemic focus is needed, management commitment must be secured, resistance strategies are vital etc. (see e.g. Buitendijk & Maes 2019). EIGEs GEAR-tool is also a constant key resource. Yet the transformation of this knowledge into local actions is a complex endeavor, and in SPEARs Communities of Learning and Practice we share our experiences, challenges and successes with exactly that. Our presentation offers glimpses of the SPEAR consortiums experiences and collective reflections, showcasing differences in institutional approaches to the processes involved in GEP work.A process-focus is evident around the development of the plan itself: deciding who to involve, how, when and with what purpose across the organizations units and levels of management, including when to update and renew the plan.A process-focus is also crucial within the implementation of the plan itself: deciding when and how to e.g. revise organizational processes such as recruitments to include a greater intersectional focus to secure more diverse staff.Finally, while some partners are mainly focused on developing the format of the plan, others are focused on implementing the content of the plan. Organizational infrastructures needed for both GEP development and implementation cannot and should not be shaped too separately and our presentation will reflect the differences in emphasis and focus, and how these are not always divisible or lineal, yet are all valid and bring value to SPEARs collective GEP-work.We juxtapose SPEARs experiences to the announced 2021 GEP eligibility criterion. The required published document confirming that the RPO has the resources and data monitoring needed dictate certain development-related processes; the training requirement and five minimum areas to be covered dictate implementation-related target areas. The criterions requirements, with almost all its wording explicitly mentioning gender and failing to address intersectionality and diversity, seem both rather specific but also very open for local (and limited) adaptations. This elasticity generally corresponds well with the diverse experiences we see in SPEARs communities.We end with more open-ended reflections regarding the auditing of these requirements from 2022 onwards. Can we envision how indicators will be audited with the institutions resources and context in mind? Can a GEP plan consequently ever be deemed too ambitious - or too unambitious?

The Implementation of Gender Equality Policies in Spanish Universities: Dynamics of Resistances and Alliances

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↳ **Keywords:** Implementation

Gender equality policies have been institutionalised within universities through the creation of equality units, the development of gender action plans and sexual harassment protocols, as well as other initiatives. To date, however, there have been few studies on how the gender equality policies adopted by universities are actually implemented, and the role and dynamics of resistances and alliances in this process (for example see Alonso and Lombardo, 2016; Verge et al., 2018). This paper aims to fill the gap in the literature addressing the following research questions: How have gender equality policies in universities been implemented? What factors and which actors play a role in their implementation? What is the role of alliances among pro-equality actors in favouring policy implementation? How do resistances affect their effective implementation? The paper, based on research developed within the UNIGUAL project (FEM2017-84004-R), will study gendered dynamics of policy implementation in five Spanish universities, using policy-process tracing, content analysis of legislation and gender action plans, as well as interviews with key actors involved in implementation processes. It will draw on theories of public policy implementation, feminist institutionalism, opposition and resistances to gender equality, feminist agency, and social movement studies. The argument developed is that, while feminist individual and collective agency is crucial to seize legislative and political opportunities and to overcome resistances, the institutional and cultural constraints of each university context affects what gender equality policies are implemented, and how. In particular, resistances against gender equality policy implementation are stronger when policies seek to transform traditional gender roles and relations in academia.

Lessons learned from ERA Roadmap priority 4: why national strategies for gender equality in R& are still needed

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↳ **Keywords:** ERA roadmap, gender equality in R&I, national strategy, good practices

European Research Area (ERA) Priority 4 focuses on gender equality and gender mainstreaming in research and innovation. The objective is to foster scientific excellence and a breadth of research by fully utilising gender diversity and equality and avoiding an indefensible waste of talent. Within their National Action Plans (NAPs), European Union Member States (MS) and Associated Countries are asked to develop policies which address gender imbalances particularly at senior levels and in decision making and which strengthen the gender dimension in research. Horizon 2020 project GENDERACTION has analysed the implementation of the NAPS drawing on multiple data sources (results from an analysis of NAP documents, an online survey conducted in 2017 and an update of the survey in early 2019, interviews with members of the Standing Working Group Gender in R&I). The analysis clearly indicates the need for further action to promote gender equality in R&I mainly because gender equality is highly correlated with a countrys innovation potential and excellence. 26 of the 28 EU Member States participated in the ERA process by submitting and implementing a National Action Plan (NAP). For several countries, the ERA Roadmap was the initial spark that triggered the development of their first-ever gender equality strategy for R&I (e.g. Cyprus, Luxembourg or Malta). In others, the NAP was used to consolidate and further develop existing policies which support gender equality in R&I. However, not all countries used the NAP to establish gender equality policies or to further develop existing ones. Consequently, it is necessary to strengthen the NAPs as steering instruments for gender equality in R&I. A meaningful monitoring would support the steering function of the NAPs. Experiences with the NAP implementation and the results achieved so far show the potential of the instrument to initiate (further) development of gender equality policies. However, it is also evident that the process linked to the ERA Roadmap development, implementation and monitoring does not provide incentives to increase engagement regarding gender equality in R&I for countries that are relatively inactive. Consequently, the gap between experienced and inactive countries with regard to

gender equality in R&I is widening. To counteract this widening gap within the EU it is necessary to revise the process of NAP development and submission through the provision of more detailed guidance for NAP development and specific support for NAP development similar to the H2020 Policy Support Facility (PSF). Finally, NAP development and implementation has to be embedded in a gender equality policy discourse which aims at a common understanding of gender equality in R&I as well as at stable commitment of Member States. Such a policy discourse has to be initiated by the EC and should involve the ERA structures as well as relevant EU and national stakeholders.

A reflexive approach to institutional transformation for gender equality

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↳ **Keywords:** Gender equality, gender equality plans, reflexivity, change of practices

Gender equality plans (GEPs) are currently the preferred approach to initiate structural change towards gender equality in research performing and research funding organizations. In order to tackle gendered organizations, GEPs have to be more than just a formally adopted institutional policy. GEPs should represent a framework for capacity building among relevant stakeholders to enable them to reflect on gendered practices, to change them and to deal with resistance. The paper presents the approach that has been developed for TARGET - a H2020 structural change project and its theoretical background. We assume that a successful implementation of gender equality plans has to lead to a change of gendered organizational practices. Following Patricia Yancey Martin (2003) we expect that in most cases the effects of gendered practices are not intended. For instance, we dont think that women are intentionally disadvantaged in their access to STEM fields and that initiatives to increase the share of women in STEM are ineffective. In most cases such measures aim at supporting women who are interested in STEM fields but do not aim at changing traditional practices in the field. As a consequence, it is possible to successfully implement such STEM initiatives while at the same time the barriers for women remain stable or are even reinforced. In the following, we will first describe the theoretical background of the approach which defines reflexivity as a precondition to change gendered

practices. We will argue that due to the dual logic which characterizes academic organizations, change becomes a complex endeavor. For universities the dominant logic is the scientific one which characterizes teaching and research. However, besides that the university as an organization follows a specific logic. Based on that we will outline our concept of reflexivity which links reflexivity at the individual and institutional level. We argue that one of the main functions of a GEP is to provide room for reflexivity and to initiate reflexivity at individual as well as at institutional level (Wroblewski 2015). A theory of change approach (Vogel 2012) supports reflexivity in all stages of GEP development and implementation. In the concluding section we will discuss preconditions for such a reflexive approach like the combination of gender expertise and capacity building activities to build up gender competence among relevant stakeholders.

Gender in the content of STEM research: some steps forward

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topics: POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender, robotics, mobility, energy, Human–Computer–Interaction

In the context of the H2020 project GEECCO four literature studies were produced last year. The studies each summarize the state of knowledge and the most important discourses from women's studies, feminist research and gender studies from four different fields of research: Energy, Mobility, Human-Computer-Interaction (HCI) and Robotics. All studies are available at the project homepage (http://www.geecco-project.eu/resources_results/geecco_deliverables/) Against the background of these literature reviews I would like to reflect on the following questions: What are the similarities and differences between the four research topics? How can the respective research communities be more involved with these results? What does it take to make gender aspects state of the art? What is the role of research funding here? Which roles play the universities, especially university education? To make the content accessible to more stakeholders - scientists, research funding, politics - we have produced explanatory videos. The videos summarize in about 3 minutes the main topics and perspectives. I will also show one of these videos and like to discuss whether the format is suitable for reaching different target groups.

The prestige economy and STEM Careers: The Role of Intersectionality

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Intersectionality; careers; prestige; communication

Why do women succeed in higher educationbut only to a certain point? This research explores the activities that academics undertake to develop their careers, and how women access indicators of esteem to progress, using the feminist lens of intersectionality. This consideration of multiple forms of identity played out in diverse ways for womens careers. Intersectional themes arose around career planning and communicating success, seen as an important way to progress in STEM careers. Many women also had ambivalent feelings about gaining recognition through self-promotion: they understood the importance of status and knew the rules of the game but were critical of how this contrasted with notions of objective measures of success in STEM fields.Previous research on motivation have highlighted the role of prestige in hiring and promotion decisions. The term prestige economy is used to describe the collection of beliefs, values and behaviours that characterise and express what a group of people prizes highly. However, prestige is a gendered concept: academic women find it harder to access the types of currency that advance their career, such as first author status and publication rates (Coate & Kandiko Howson 2016).We were also interested in the role of individual characteristics in career progression. Therefore, we used the feminist lens of intersectionality which considers multiple forms of identity (Crenshaw 1991). This broader conceptualisation reflects a perspective of universities as highly complex sites where intersecting spheres of difference, including culture, ethnicity, gender, disability, socioeconomic status, and language interact.Drawing on 30 semi-structured concept map-mediated interviews this project explored the gendered nature of academic work and subsequently how academic women strategise their career development, and what barriers they perceive. The interviews started with a concept-mapping exercise whereby the interviewees produced visual representations of their 5-10 year career plans. These maps were discussed and followed up with questions about obstacles and opportunities they perceived in terms of their career development.The mid-career stage was seen as make or break time, with certain milestones needing to be met for promotion and progression. This time inconveniently overlaps with prime child-baring and child-caring stages, as well as additional caring responsibilities for

aging parents or partners, and thus caring responsibilities were a challenge for women without children as well. And although institutions operate on discourses of equity, equality and diversity, interviewees did not find these reflected in practicessuch as valuing those in part-time roles or non-traditional activities such as public engagement. In this way, the prestige economy operates to reward certain forms of labour while ignoring or undervaluing others.It was clear that a number of women found it frustrating that the types of things that motivated them in their work were the least likely to be the things that receive recognition and reward. Women sometimes had very ambivalent feelings about prestige and reward, especially if they were able to accrue it while wanting to downplay its importance. Our research found a cultural and gendered reluctance to engage in self-promotional activities.

An online teaching experience in higher education: Women in environmental biology

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Online, course, MOOC, environment, women, science, biology, gender perspective, life, conservation biiology

Women in Environmental Biology is a massive online open course (MOOC) designed to teach the key concepts of environmental biology from a gender perspective. A team of seven women researchers from the Department of Animal Biology, Plant Biology, and Ecology at the Autonomous University of Barcelona (UAB) have created this MOOC with the aim to promote interdisciplinarity, sustainability and gender perspective in higher education. The course is organized in four weeks or sections 1) Biodiversity; 2) Ecosystems and Humans; 3) Human Health and Environment; 4) Strategies for the Conservation of the Environment; containing a total of 46 videos and additional learning materials. As part of the curriculum, women researchers who have made significant contributions to environmental biology throughout history are introduced, and further references and material about them are provided. In addition, sustainability values and respect for the

environment are also key competences within the course.Besides, the increasingly gender-sensitive legislation promotes the inclusion of substantial legislative changes and actions to move towards effective gender equality in higher education. However, scholars frequently lack information and training to implement the gender perspective in their teaching. For this reason, this course will also train teachers (not only at University but also high school level), provide them with educational resources and activities, and will also serve as an example of how to incorporate the gender perspective in teaching. The experience has created changes and improvements in gender perspective, oral skills and personal and scientific relations of the teachers of the department, teachers of the Biosciences faculty, the university, and specially for the researchers involved in the project.

Engendering higher education quality assurance processes: A matter of (e)quality

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↳ **Keywords:** Quality assurance; gender mainstreaming; gender equality; societal engagement; EHEA (European Higher Education Area)

Engendering quality assurance is as much a matter of equality as it is a matter of quality. How can policies and programmes effectively incorporate a gender equality perspective, as international institutions and national legislation call for, if universities continue to provide gender-blind knowledge and competencies to students? This article focuses on the policy innovation recently introduced in Catalonia whereby gender has been mainstreamed into the quality assurance system run by the Catalan University Quality Assurance Agency (AQU Catalunya). We discuss the relevance of a gender-sensitive evaluation of higher education programmes, pinpointing its enhanced societal value, and present the gender indicators included in the quality assurance standards and the supporting measures that may facilitate an effective implementation of gender mainstreaming into the curriculum across institutional levels. The article also reflects on the implications and challenges of this new evaluation practice as well as its transferability to other contexts.

Instrument and strategies for gender equality among academic staff in the Nordic countries

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↳ **Keywords:** Gender equality, policy, academic careers

The Nordic countries have a long tradition of gender equality initiatives and are considered well-established welfare societies with high female labor market participation rates and a well-developed and highly subsidized system of childcare. Women have for long been a group targeted by equality policies and the Nordic countries have been labelled global leaders when it comes to gender policy implementation in higher education (Lipinsky 2013). At the same time extensive international research literature has documented challenges to gender equality in research and innovation, pointing to a number of obstacles to womens advancement in science careers. The numbers of female professors in Norway, Sweden and Finland remain around 30 per cent and below which is above the European average (European Commission 2019), but still low against a background of the women-friendly, Nordic welfare societies and strong commitment to gender equality policies in the universities. This paper examines gender equality policy in order to investigate how the universities have confronted the lack of gender equality within the Nordic academic workforce. The study has a comparative approach m presenting an overview of organizational policies related to gender equality in higher education in Sweden, Norway and Finland. The empirical data consist of a broad collection of documentary data, including policy documents, relevant legislation and regulation, reports, and prior studies.

Including Knowledge about Men's Violence against Women and Domestic Violence in Higher Education in Sweden

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Council of Europe Convention on preventing and combating violence against women and domestic violence, Istanbul Convention

The Swedish Gender Equality Agency will present the results of a study on which support that higher education institutions in Sweden need, to be able to fulfil their obligations to give students knowledge about mens violence against women and domestic violence. We also present the educational initiatives that the Agency, in collaboration with several universities and university colleges, is offering higher education institutions. By doing this, we aim to lift the challenges and importance of including knowledge about mens violence against women in higher education.In Sweden, the overall responsibility for higher education and research rests with the Parliament and the Government. They decide on the regulations, like the Higher Education Ordinance, which applies to the higher education sector.In 2018, knowledge about mens violence towards women and violence in close relationships was included as a qualification target in seven qualification descriptors in the Swedish Higher Education Ordinance. To award the qualification Degree of Bachelor of Science in Physiotherapy, Nursing or Social Work, or to award Degree of Master of Science in Medicine, Psychology, Dental Surgery or Laws, the student shall demonstrate knowledge of mens violence against women and domestic violence. In 2019 the qualification target was also included in the qualification descriptor for Degree of Bachelor of Science in Dental Hygiene.This rather unique change of the Qualifications Ordinance is the result of an ongoing discussion about mens violence against women being an important area of competence for professionals who in their daily practice meet women who are subjected to violence. In addition to this, the inclusion of this new qualification target is linked to article 14 and 15 of the Council of Europe Convention on preventing and combating violence against women and domestic violence (Istanbul Convention). The specific articles concern training of professionals as well as education and the need to design teaching material about gender-based violence for all levels of education.Each public-sector higher education

institution has autonomy and decides independently which educational content that is needed to implement the new qualification target. To support the higher education institutions in their work, the Gender Equality Agency has a governmental assignment to offer educational interventions and knowledge support to teachers and programme co-ordinators. The new qualification target applies to 86 programmes at 27 higher education institutions.To be able to know what support the institutions need to fulfil their obligations to give students knowledge about mens violence against women and domestic violence as well as to know what conditions, opportunities and difficulties they see in providing education in the field, the Gender Equality Agency has conducted a survey together with Gothenburg University.The result of the survey gives a fragmented picture. The group examined was heterogeneous in many aspects and there was wide variation in teachers educational needs, knowledge level, the institutions educational experience and teaching on various forms of violence. This indicates that the Agency needs to offer training and knowledge support that is adapted to the teachers and programme co-ordinators prior knowledge and background experience.

Early Career Investigators' Experience with Peer Review: Gender and Geo-political Perspective

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↳ **Keywords:** Peer review, gender, geo-politics, early career investigators, Europe

The objective of the paper is to explore and understand how narratives of European early career investigators (ECIs) are shaped by both gender and geo-political backgrounds when talking about the peer review system in academia. By adopting an intersectional perspective on ECIs narratives, we aim to fill in the gap in the scientific literature on the ECIs perspective on the peer review system, i.e. those who depend most on it to progress on their career ladder. In the literature, academic progression and research enhancement in large are defined in a significant way through the lens of peer reviewing and even though peer-reviewing oaths to be which is tightly connected to academic quality (Roberts

& Shambrook, 2012: 33); peer-reviewing and has even been defined as the main mechanism through which potential research outputs are evaluated and enhanced (Rowley & Sbaffi, 2018: 644). By pointing out the different biases that have been spotted by previous research, Lee et al. (2012) at al argue in favor of impartiality of peer-review, which should both ensures the consistency and meritocracy of peer review, but also point out the different biases which has been spotted by previous research (Lee et al, 2012:13).This article is based on a cross-European qualitative research done in 17 European countries within the COST-Action ENRESSH. For this contribution, the total of 48 interviews was analyzed. There were 28 female respondents (58%) and 20 male respondents (42%). Intersectionality as a theoretical framework and as a method was used when analyzing the interviews, together with narrative analysis. Our empirical findings show that peer review seems to be an important moment of evaluation for both male and female respondents. Most of them believe that this sort of evaluation is the most appropriate way to improve the quality of scientific production, yet being aware of the presence of several biases and issues. However, both men and women perceive the process as dependent on interpersonal relations in some contexts dominated by local networks, sometimes even biased and unfair, and slowing down the process of improvements. The results confirm our hypothesis that women are less critical of the peer-review system and get discouraged by the reviewers comments or try to satisfy as much as they can the reviewers requests, while men develop their own ideas in contrast to review opponents. Regarding the geo-political differences, we find that ECIs from Eastern Europe criticise the national peer review process and idealise the Western style of fair peer-review, criticizing their national peer-review systems. The key impact of our research is to raise awareness about the potential flaws of the peer-review system and its relation to and impact on ECIs research and careers, but also to point to the gender-based differences in such impact. When it comes to the geo-political difference, the research results show that peer review should be liberated from nepotism and the inclusion of younger researchers in all review procedures would bring a different perspective to research.

History teaching, gender and future teachers: the challenge of gender perspective at University.

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** History education, textbooks, gender stereotypes, women history, teacher education

Women's history and history with a gender perspective have been part of the Academy's main historiographical lines for years. Nevertheless, its transfer to the field of basic education is still incomplete (López Navajas, 2014; Vaíllo, 2016). It is therefore the reason of this study, in which we lay the groundwork for evaluating and optimizing the competence of Primary Education Degree students, future teachers, to teach history from a gender perspective. In view of the fact that the involvement of teachers is necessary in order to achieve equality in education and society (Manassero and Vázquez, 2002).Thus, we present the results of a pilot test to establish a diagnosis of our students knowledge to set an improvement program of the syllabus of the subject "Social Sciences and their Teaching II" of the Primary Education Degree of the University of the Basque Country. This is a study that seeks to identify the needs that future teachers present regarding their skills in teaching history with a gender perspective and to put in place the means to solve them based on the latest advances in the field. The objectives are, then: 1) analyse their knowledge of key concepts related to gender dimension, and 2) the importance attributed to the integration of gender perspective in history.The study has been carried out combining quantitative and qualitative methodological approaches with a sample of 29 students (17 women, 11 men and 1 others), in the mentioned subject taught at Álava and Leioa campuses. In both groups a pedagogical intervention has been carried out to deepen in the characteristic of teaching history with a gender perspective. It has focused on prehistory and its treatment in Elementary education. At the same time, a pre- and post-test have been executed to analyse the possible changes operated and the success of the intervention.The results reveal a clear concern for gender-related issues; however, they also show a clear lack of theoretical knowledge about the application of gender perspective in history teaching. They are self-aware of this lack of knowledge not only in their training as teachers, but also as students. This is significant because the majority of students were born after 1999, when gender perspective was already established in the basic education curriculum.This

androcentric tendency is shown in the students' representations of the role of women in prehistory, which are very stereotyped and sexist. A sexism that, although it decreases slightly after the classroom task, is still intense because of the strength of all the earlier knowledge acquired from their previous schooling.With these results, it is clear that there is a need to include the gender perspective in a more systematic way in the subject. Not only by deepening theoretical teaching history content, but also by dealing with the historical contents themselves, given the deep-rooted nature of the androcentric history shown by the students. In addition to reviewing the subject's syllabus in order to focus more on the gender perspective, a greater inter-faculty intervention is proposed to develop a broader project.

A new measurement model? Potentials of theories of change models to measure structural change using the example of mentoring programs.

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topics: GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Theory of Change, mentoring, impact analysis, structural change, STEM

The underrepresentation of women at German universities, especially in the STEM fields, remains a challenge despite institutional commitments to gender equality. Universities are therefore taking a variety of measures to counteract the decreasing proportion of women* [1]with each career level. Part of the most established measures are mentoring programs for advancing female* talents in research careers. Mentoring programs aim at different target groups according to the qualification levels and have been introduced for various scientific fields to bring change on individual and structural levels. With growing pressure on the universities to demonstrate the effectiveness of their gender equality activities, there is a need to evaluate whether and how their measures lead to promised results. Only few evaluations go beyond assessing the satisfaction level of participants (Höppel 2016, p.23). TOC models have the potential to enable gender equality evaluators and agents to analyze structural changes, as the complexity of measures and structural embedding can be taken into account. This paper discusses the benefits and challenges of TOC models for mentoring in order to identify potentials for

further measurements of effects of mentoring programs.My talk will demonstrate how TOCs enable evaluators to trace back the assumptions made by gender equality agents in conceptual planning of mentoring programs. The aim of the TOC Model is to identify gaps in the assumptions on intended and unintended impacts and thus to find points of reference for the development of mixed methods approaches and indicators. In addition, the TOC can also serve as a planning and analysis tool for gender equality agents to design, review, and further develop mentoring programs. The design of TOCs differs widely. An overview of the German literature has shown that examples of practical use, especially in the evaluation field of gender equality in higher education, are still rare. This contribution applies theoretical discussions on TOCs on the development of specific designed model for mentoring in STEM fields at German universities using the example of a mentoring program from a technical department of a university. The advantages of different approaches to build TOC models (Mayne/Johnson 2015) will be used to develop a specific TOC Model fitting the purpose of impact analysis of mentoring programs in the STEM field. The use of Theory of Change Models offer the opportunity for impact analyses which take into account the complexity of measures and the multitude of influencing and contextual factors on the implementation of mentoring programs on an individual and structural level. This includes the challenge to find the balance between the complexities of gender equality measures for meaningful measurement results.[1] The gender star indicates that transgender and intersex people can also be considered as a target group.

What is the Gender Dimension in Research Content?

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender dimension, research content, pedagogical material

Over the last few years, the European Commission and various national research-funding agencies and institutions have encouraged researchers to include the gender dimension in their grant proposals. On the one hand, the rationale is to promote gender equality in academia, on the other hand, the integration of sex and gender analysis enhances the

quality of research and innovation. However, uncertainty prevails as to how to include the gender dimension in the content of research projects. In order to educate researchers and others within the research community about what the gender dimension in research content may entail, Kilden Genderresearch.no has produced the booklet What is the Gender Dimension in Research?. The booklet presents good examples, ideas and guidelines demonstrating how the gender dimension might effectively be integrated in research within various topics, such as health and well-being; food, agriculture and fisheries; transport; energy; environment and climate, and safe societies. The selected areas of research are inspired by the societal challenges as identified by the European Commission and the UN Sustainable Development Goals (SDGs), and comply with the new research program Horizon Europe. In addition, the booklet provides a checklist on how to include gender perspectives in research projects.Kilden has presented the booklet What is the Gender Dimension in Research? in several universities and research institutions around Norway, in seminars and workshops. An important purpose is to inspire reflections on the relevance of the gender dimension in various research fields, rather than to provide absolute answers. At the same time, we emphasize the importance of not reproducing gender stereotypes when including a sex/gender dimension in research, including in the interpretation of data. Also, we stress that the gender dimension does not imply a special emphasis on the differences between men and women, but to investigate how gender relations work in different contexts and in intersection with other variables, such as age, income level, education, ethnicity, sexuality, geographical position, and so on. At the 11th European Conference on GEHE Kilden Gender Research.no will present the booklet What is the Gender Dimension in Research? and raise discussions about how this form of pedagogical material might work to meet the challenges facing gender equality efforts in research and higher education.Kilden Genderresearch.no is a Norwegian knowledge center for gender perspectives and gender balance in research which is affiliated with the Research Council of Norway.

Diversity in STEM address unconscious bias and enable more girls to see themselves as engineers

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Recruitment, engineering, female students, bachelor programmes

A Danish universitys Engineering Faculty, where 80% of Bachelor Programme recruits are male, is addressing unconscious bias as part of its recruitment strategy to attract more female applicants. Whilst there have been increases in female recruitment to specific programmes including chemical engineering and welfare technology, others including robotics and software engineering are attracting around 15 times more male students than female (2018). The gendered recruitment facing this Engineering Faculty is not unique, and efforts by universities world-wide indicate that this is a complex problem beset by societal norms and role expectations. During this presentation we share early experiences from an ongoing project (2019-) by a Danish universitys Engineering Faculty designed to mitigate the effects of gender bias at early stages in high school pupils career choosing. Mindful of the limited and even negative impact of unconscious bias training (Atewologan et al. 2018), this Engineering Faculty project focuses on raising awareness of bias and the co-development of behaviourial nudge strategies to offset biased practices (Nielsen & Kepinski 2016). The Facultys recruitment consultants opted for a holistic approach and identified diverse target groups in the Bachelor programmes recruitment process. These target groups include student ambassadors who represent the Faculty when they present on their engineering programmes in high schools and when hosting high school pupils on university visits, parents and career advisers. By targeting parents and those who advise high school pupils on career choices, the project seeks to address home and school-based bias as well as biases which student ambassadors may unwittingly impart when interacting with high school pupils. The workshops for student ambassadors and career advisers are designed and led by university consultants in gender equality recruitment and bias aware teaching and learning and are inspired by behavioural nudge approaches (Nielsen & Kepinski, 2016), how bias limits novelty and equal opportunities. The student ambassadors

are enrolled in a blended learning programme (2019-), which comprises an online implicit bias test, accessing online resources and experiential learning through team-based, face to face workshops. By experiencing the workshops in teams, the ambassadors will be encouraged to develop their own supportive communities of practice and shared processes (Atewologan et al., 2018). One practical resource includes an array of possible interaction situations where unconsciously biased responses or non-verbal behaviour may occur and practical strategies for being aware of potential bias and how to mitigate its effect. In parallel, parents with daughters in high schools are invited to facilitated dialogue salons in mid-2020, where they will have access to elements from the workshops and be encouraged to discuss how to nudge girls towards considering engineering as a career. Their recommendations will be collated into the projects bias aware guidance, together with the takeaways from workshops with career advisers (expected in late 2020).To conclude, the project approaches mitigating bias by engaging multiple target groups crucial to high school pupils study choices and will in a novel way combine learning from these influential actors, most notably with its focus on creating supportive communities of practice.

The battle of (gender) equality schemes: unravelling their (EU) potential

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↳ **Keywords:** Gender

Gender equality has been amongst the key priorities of the European Research Area (ERA) but progress is still slow (SHE figures, 2018). Structural and cultural change does not happen overnight, and a sustainable and systematic effort is required. The European Commission recently announced that gender equality plans (GEPs) will be required for access to Horizon Europe funding. This announcement has provoked discussions at national and European level about the role of Certification and Award schemes (CAs) in facilitating the development of meaningful and sustainable GEPs. CAs can contribute towards structural and cultural change since they often require data collection, senior leadership commitment and development of management practices to address gender inequalities especially when they focus on fixing the institutions rather than fixing the individuals. Currently, there are

various national and international schemes that differ in scope, objectives and processes often reflecting the diversified contexts in which they operate. There is limited comparable information about these schemes, their similarities, differences and their potential to be scaled up. Building on a review of existing schemes, the Horizon 2020 EU CASPER (Certification-Award Systems to Promote gender Equality in Research) project examines the feasibility of establishing a European award or certification system for gender equality in research organisations. Based on 67 qualitative interviews with stakeholders, we will present a comparative overview of (gender) equality schemes in higher education and beyond (such as Athena SWAN, Family Audit, Total-Equality award, EDGE etc). This paper will contribute towards a) a better understanding of strengths, weaknesses, enablers and challenges of existing CAs, and b) identifying key lessons for the architecture and operationalisation of a Europe-wide scheme. Such a scheme could play a key role in ensuring that the GEP eligibility criteria established by the European Commission does not become another box-ticking exercise.

The Pitfalls of Gender Essentialism for the Implementation of Gender Equality Plans in Research Performing Organizations in STEM

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↳ **Keywords:** `Women in STEM, gender essentialism, gender equality plan, institutional change, higher education`

Despite institutional commitments and efforts towards gender equality, the underrepresentation of women continues to characterize the STEM field (Science, Technology, Engineering, and Mathematics) - in particular in the highest grades and as heads of academic institutions. To tackle the persisting gender inequalities and to promote the underrepresented sex, European higher education institutions have introduced gender equality policies in recent years, often in form of institutional gender equality plans. Unfortunately, the impacts of such gender equality plans (GEPs) can be limited due to various hindering factors, including lack of management ownership, difficulties in building-up alliances, and prevailing essentialist gender stereotypes in the STEM field. Without acknowledging the role of gender stereotypes in womens chronic underrepresentation in

STEM, gender inequalities are interpreted as the result of essential differences between women and men rather than of structural discrimination. Essentialist gender beliefs, seeing women and men as naturally different in preferences and traits, are potentially used to justify gender inequalities (Brescoll, Uhlmann, & Newman, 2013). As pointed out by Humbert, Kelan, and van den Brink (2019), especially in organizations, which are perceived as meritocratic, essentialist gender beliefs can lead to a decrease in the support of gender equality actions. However, there is little research on the link between essentialist gender beliefs and support of gender equality plans in universities.With the ambition to contribute to a more nuanced understanding of the slow pace of institutional change towards gender equality in the STEM field, this paper analyses the mechanisms through which essentialist gender beliefs limit the transformative effect of gender equality plans in research performing organizations (RPOs). In addition, the paper examines whether gender equality approaches focusing on positive discrimination reinforce essentialist gender beliefs in the organizational culture of higher education institutions in the STEM field. This paper draws upon the results from a series of interviews with university management, gender activists, and researchers carried out in four tech universities in the context of the Horizon 2020-funded project Gender Equality in Engineering through Communication and Commitment (GEECCO). We examined the interview materials through the theoretical lenses of feminist institutionalism (Mackay, Kenny, & Chappell, 2011) and system justification theory (Brescoll et al., 2013). Whereas the former allows for analyzing gendered aspects of institutional change processes, system justification theory can explain how stereotypes and essentialist beliefs can be used to legitimize gender inequalities. The paper contributes to a better understanding of resistances against gender equality actions in universities by showing how factors like essentialist gender beliefs curb the impacts of work against gender inequalities in STEM. Our findings also point to promising avenues for re-thinking gender equality plans designs and implementation in tech research institutions.

Facilitating an interdisciplinary discourse on gender and diversity through digital learning

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↳ **Keywords:** Teaching

The University for Continuing Education (Danube University Krems), Austria, is a public (governmental) university for continuing education. Its courses are specifically oriented towards the needs of working professionals. The University offers exclusive master's programs and short programs in five fields of study (health and medicine, business and globalization, education, arts and architecture). Serving about 9,000 students from 97 countries and over 20,000 graduates, it is one of the leading providers for continuing education courses in Europe. Course contents are strongly oriented towards students continuing education needs and labor market requirements. However, having a detailed look at the course subjects and topics, gender and diversity issues are still underrepresented. Therefore, the rectorate asked the gender equality unit to develop a comprehensive concept on how to sustainably integrate gender and diversity in teaching units at Danube University. In the case of Danube University, implementing gender and diversity means in many areas starting from the scratch.The overall aims of this pilot project are:(1) To increase the number of courses which reflect on gender and/or diversity.(2) To enhance and to deepen already existing gender and diversity contents in terms of theory, concepts and state of the art. (3) To advise and accompany department heads, course developers and lecturers in order to enhance gender and diversity knowledge and to support their autonomy in the long run. (4) To strengthen students ability to discuss and reflect on gender and diversity issues through active engagement in the online exchange platform.In order to substantially support the attainability of the project goals, five departments decided to develop a common, online gender and diversity basic course. This online-module is part of a holistic approach, which combines (1) the contents of the module, (2) a planned guideline for teachers and (3) yearly workshops for teachers in gender- and diversity sensitive teaching to a modular concept. The conference contribution will describe the online gender and diversity basic course in terms of its theoretical and conceptual framework, learning goals and expected learning outcomes. Moreover, the applied didactic methods will be presented. Finally, the necessary framework conditions and structures, which are required to sustainably integrate gender and diversity studies in university teaching, will be discussed further.

A review on the value of time and the differences in the career prospects between men and women

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↳ **Keywords:** Gender equality, education, career, stereotypes, leisure gap

This paper aims to consider the extent to which (if any) the value of time is different between men and women and to identify differences (if any) in their professional progress. As women have slowly moved into the industrial working world, a new working woman identity has been added to the traditional female image of housewives raising their children, doing the housework, and nurturing their husbands. This study will assess if this new role has led to an adaptation of traditional roles (childcare and housework) by devaluing importance and reducing attention and engagement with such demands in order to make time for paid work. This new reality continues to highlight mens lack of involvement in housework and childcare duties, and in line with previous research (Hochschild & Machung, 1989) this study has identified a continuing gap in available free time between men and women (leisure gap). Recently gathered data analysed suggests that developed countries show a tendency to bridge this gap, while developing countries still show an existing substantial gap (Central Statistics Office 2013, OECD, Better Policies for Better Life 2015). The exploration of the leisure gaps causal factors has led to the identification of the differences of the career prospects between men and women. Managerial posts, even in female dominated fields, appear to be mostly occupied by men while many third level programmes (such as STEM) appear to be male dominated, medical professions show the tendency to have equal proportion of men and women while females are dominant in other areas. A critical review of the literature reveals the identification of the reasons behind these phenomena. Firstly, the academic performance of the two genders is explored with a focus on their differences in STEM subjects (Steegh et al., 2019). In addition, the very important role of third level education students stereotypes in their course preference is examined and presented (Mascret & Cury, 2015). Future research is proposed for the identification of the Irish students gender stereotypes and their role in the students selection on their third level course of studies.Ultimately this research study will contribute to this important field of research by undertaking a comparative analysis of the progress (or lack of) between current research and that of Hocschild and Machungs work three decades later.

Gender gap in the "Blue Careers": the case of naval architecture and marine engineering in Spain

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Naval architecture and marine engineering, gender gap, STEM, blue carrers

This work is framed within the Erasmus+ project MATES: Maritime Alliance for Fostering the European Blue Economy through a Marine Technology Skilling Strategy whose main objective is to analyse the evolution of maritime technologies in Europe, in order to develop a strategic plan to improve competitiveness of the industry through an adaptation of the existing training courses. The maritime industry is highly competitive and needs to access the entire talent pool to survive; so that, multicultural human resources are the core of its competence. However, maritime industries, as well as education and training in maritime fields,seem to be a male issue and a large gap between involved men and women can be observed. Women are not still presented in the entire value chain in the maritime sector; representing the 2% of the worlds maritime workforce and most of them are concentrated in fish processing. The blue economy concerns new sectors showing high potential for future development which offer opportunities for the economic and social empowerment of women. Likewise, the promotion of greater integration and participation of women contributes to the development of the potential of the blue economy in fundamental components such as maritime sustainability, technological innovation and the emergence of new labour markets. In this sense, one of the relevant topics of the MATES Project is the gender balance.This paper presents a review of the situation of women in the maritime sector in Spain, in particular in a STEM "blue career" Naval Architecture and Marine Engineering. Our analysis confirms that, as in other STEM fields, gender stereotypes still have a highly significant effect on the choice of these university careers and, consequently, on the future employment opportunities of women.

Women-only networks: A strategy to foster structural change?

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↳ **Keywords:** Women-only networks, academic politics, universities, gender equality, Spain

Academic employment systems have been subjected to policy-driven reforms in many European countries. In Spain, three different systems of academic hiring and promotion have been put in place in less than two decades. In essence, reforms respond to the need to improve the merit-based assessments while overcoming the limitations associated to its long-standing inbreeding nature. Nonetheless, the endurance of the powerful local old-boys-networks persists. Previous research has mainly focused on the relevance of informal networking and sponsorship in terms of career advancement, as well as in the gendered dynamics involved. The main conclusion is that women´s limited access to or (auto) exclusion from the protégée system is crucial to explain why they are neither recruited nor promoted at the same rate than their male peers. Besides putting academic women at a disadvantage, this circumstance pushes them to rationalise whether they accept or not to play the game and in what terms to do so. This observation is in line with presenting women-only-networks as the alternative to improve their career paths. But once again, this may disembogue in adopting the fix the women approach, which leads women to assimilate into the existing individualistic neoliberal system rather than evolving as agents of change in academia. The aim of this paper is twofold. First, explore if women-only-networks continue to be envisaged as a strategy to support women´s professional aspirations in the Spanish setting. And second, analyse the emerging tensions around their acceptability and unintended consequences in terms of gender equality. Inspired by a feminist institutionalist approach, I identify academic women strategies, understood as ephemeral rather than permanent, in relation to the gendered network dynamics and, in particular, to the women-only-networks. In parallel, attention is centred on the underlying framing discourses about academic excellence, reward systems and gender equality initiatives, which guide their actions and eventually their career outcomes. The paper offers interesting insights into cultural differences, while identifying shifts over time, as how relational networks and networking are perceived per se. Even if discourses seem to frame actions, the qualitative approach reveals how apparently contradictory strategies stand on

similar discursive frames of the institutional context. A rather controversial finding reveals that junior academics are increasingly strategic in their approach, showing reluctance to participate in networks comprised exclusively by women and refraining less from engaging in male dominated networks. Yet, women networks continue to be considered as an opportunity, not only at individual and institutional level (regarding women´s career development and performance indicators, respectively), but also at a social level (regarding gender equality awareness).

Encouraging female engineering students to male-dominated industries, feedback from engineers on business practices

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Female engineers, male-dominated industries, recruitment, engineering school

In France, the feminization of graduate engineers is progressing but at a slow pace: 29% of women in 2015. In addition, there is a marked professional segregation: less represented in the industry, the engineers are more oriented towards the tertiary sector (source Observatory of women engineers, 2016). Various actions have been implemented to increase diversity both at the engineering school level and at that of companies. In this context, our work is interested in the view that engineers in activity relate to the initiatives implemented upstream by schools on the one hand and to the recruitment practices of industrial companies on the other hand. This retrospective look makes it possible to situate these initiatives in the training and professionalization paths of engineers and therefore to better understand their possible influence (Marry, 2004).Our methodology is based on a qualitative study via interviews conducted with recently graduated female engineers and female engineers who have been in post for more than 5 years. A total of 10 interviews constitute our sample. These engineers work in industrial companies in the naval, aeronautical and arms sectors, sectors where the share of women in technical and engineering trades is very low (BPN, 2016). This situation can be taken to its extreme if we look at the defense industries where the proportion of engineers barely reaches 15%. (Les

Echos, 2019).After asking the interviewees to tell us about their motivations to become an engineer, we focused the interviews on the initiatives carried out by their school and company aimed at promoting female engineering. Then we discussed the practices implemented by industrial companies to recruit women. This was done in order to collect their opinions, attitudes with regard to these practices, and to identify if they have been sensitive to such practices. Finally, we asked the interviewees their point of view on gender equality.The data analysis was carried out manually using a thematic grid using coding and categorization.The results highlight the role played by initiatives both upstream and downstream. Regarding recruitment practices and what can make them evolve, our results point out the differentiated perceptions of these practices taking into account the training course of engineers (notably between work-study courses or continuous training). We will detail various actions that could promote the attractiveness of industrial companies to women, and especially how to encourage them since their childhood not to be afraid of moving towards areas in which they are poorly represented.

Mathematics and its influence on the choice of an engineering career

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender gap, mathematics, engineering, science, equality

Despite the advance of women in the professional sphere, there is still a noticeable gender gap in scientific and technological careers. According to the statistics of the Spanish Ministry of Education, only 23.7% of the students in engineering and architecture degrees in the 2016/17 academic year were women. This means that only 4.4% of the female higher education students chose studies related to engineering and architecture fields. Mathematics are the foundation of STEM studies and the gateway to engineering careers. Hence, the performance in mathematics at school could influence the choice of university studies related to science and technology. PISA reports indicate that, on average, girls obtain worse results than their peers in mathematics. Therefore, this could be one reason

why women are less inclined to pursue engineering careers.This research delves into this issue in the Industrial Engineering School of the Technical University of Madrid (ETSII-UPM), in order to find out if there are relevant gender differences in the academic performance of engineering students and, if so, to analyse whether this gap is aligned with the previous academic stage.The methodology used throughout this research is based on a mixed-methods approach: the analysis of the academic performance by gender of the engineering students of the ETSII-UPM and the study of the students perceptions. Academic performance was evaluated in terms of the number of passed, failed and not-attended subjects. This was analysed in 2000 and 2010 in order to compare the results and study how the measured variables evolved over time. With the aim of continuing with the starting point established by the PISA results, special attention was paid to the subjects most closely related to mathematics. The perceptions of the engineering students of ETSII-UPM were explored, in 2010 and 2018, by a longitudinal study. Most relevant results of this research are the following:- Although the study of 2000 seemed to confirm that women, on average, were having more difficulties during the first years of engineering, the study of 2010 shows that women obtain a higher number of passed subjects.- In 2010, both groups tend to show a similar academic performance and women obtained better results in mathematics and related subjects than their peers. - Attending to the perception of the students, in general, women perceive having a higher performance and detecting less difficulties in the subjects associated to mathematics and physics. Therefore, these results clearly break with the trend shown by the results of the PISA reports. Through this research, two fundamental ideas for future lines of action are confirmed:- Mathematics are the gateway to technology. Since this subject presents the greatest gender differences at school ages, it is necessary to opt for teaching methods that confront the gender stereotypes that keep girls away from the STEM fields.- The gender perspective in STEM should be understood as a cycle, where all stages of academic-professional development are connected. Thus, fostering collaboration between different actors could be a very powerful mechanism.

GENDERSENSE: Gender+ budgeting to advance equality in higher education and research

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Decision-making, gender budgeting, gender bias, inequality regimes, research performing organisations

Tackling gender bias in decision-making has been defined by the European Research Area as one of three priorities for the advancement of gender equality in higher education, research and innovation. Gender budgeting is a strategy to advance gender equality and efficiency of policy making. It acknowledges that financial management mechanisms are not gender neutral or objective technical procedures, but political instruments with gendered implications and consequences. Gender budgeting has been adopted by governments and organisations around the world, but the implementation of has not been as effective as desired. In the context of research performing organisations, research on how financial management mechanism maintain and even produce inequality regimes (Acker 2006) is scarce and gender budgeting is a relatively new strategy to facilitate gender equality.The objective of GENDERSENSE is to research and enhance knowledge on inequality regimes in research performing organisations that serves the implementation gender budgeting, as well as developing an inclusive and intersectional approach to the strategy, that we refer to as gender+budgeting. In order to do so a cross-national and institutional analysis of targeted research and implementation projects are conducted in six research performing organisations in Europe and North America. The research draws on policy and managerial documents, statistical data, as well experts interviews and semi-structured interviews. Preliminary findings on genderingprocesses and outcomes will be presented, as well the levers and hindrances to the implementation of gender budgeting in research performing organisations.

Creating female references in Geology

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Earth Sciences, inclusive dissemination, gender perspective

Geology has traditionally been a science for men. In the popular imagination, working alone in the field or carrying several kilograms of rocks behind have been considered dangerous and unfeminine tasks. In addition, like dust covers fossils stored in museums, the name of many female pioneers in Geology has been shrouded by the mists of time, erasing them from history. This lack of female referents in the field of Earth Sciences is an important handicap when it comes to normalizing the role of women in Geology and awakening scientific vocations among the youngest girls. In 2008 the Geological Society of Spain organize a roundtable to show and discuss the figures and representation of women geologists in the different fields of the profession in Spain. The figures indicating under-representation were clear. Thus, with the objective of making visible the role of female geologists in a traditionally masculine environment, the Women and Geology Commission of the Geological Society of Spain was created in 2012. In its first years of activity (2012 and 2014) the Commission focused on making a series of tributes to the pioneer Spanish female geologists (Comisión Mujer y Geología de la Sociedad Geológica de España, 2012). Successively, in 2016 and 2018 it was time to give voice to the veteran (Comisión Mujer y Geología de la Sociedad Geológica de España, 2016) and the youngest Spanish female geologists, respectively. As a result of that last meeting, a new outreach initiative of the Commission, Geocharlas, was launched at the end of 2018. Geocharlas is a network of Earth Sciences speakers (> 60% female geologists) that perform completely free talks, workshops, field trips and meetings for a wide audience (primary and secondary schools, cultural associations, social centers, local government entities). The aim of Geocharlas is to disseminate the Earth Sciences with a gender perspective. To date, more than 2000 people, of all ages and educational levels, have enjoy female geologists talking about their work and normalizing their presence in this science. And the youngest girls have been able to build current references by interacting directly with the female geologists, thus promoting scientific vocations. But there is still work to be done.

There is evidence of the existence of numerous barriers that persist today in daily professional performance: difficulty in promoting and reaching relevant positions, low presence in commissions and official institutions, or problems reconciling work and personal life. Fighting and ensuring equal opportunities in Earth Sciences and promoting the arrival of women to responsibility positions remain basic challenges for the Women and Geology Commission, so this aims will focus our future lines of action.

Promotion of gender dimension integration in legal research: strategy and practice in Belarus

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender dimension integration, legal research

Gender equality is high on the agenda of the government of the Republic of Belarus. National Plan of Action for Promotion of Gender Equality 2017-2020 is developed with a purpose of ensuring gender equality. The Plan of Action is a fifth plan, and seeks to develop the mechanisms of introducing a gender approach in the process of working out and realizing state policy measures. Nevertheless, though the adoption of the principle of equality of men and women is an important factor determining the state policy direction, the attainment of real equality is possible only if one takes into account the persons individual needs based on gender characteristics, which makes the person visible for the legislator in the process of lawmaking. The research, which creates the basis for lawmaking and is used for enforcement practice adjustment, should correspondingly integrate the gender dimension and deal with the issues of assuring the persons individual needs in law.The strategy of promoting Gender Dimension Integration (GDI) has been realized amongst Belarusian academia since 2017 with the assistance of Raoul Wallenberg Institute of Human Rights and Humanitarian Law (RWI). RWI cooperated with six Belarusian universities on human rights and gender equality education and research. Primarily, in order to assist legal scholars to do GDI, a multidisciplinary team of authors have drafted the

Recommendations for Gender Dimension Integration in Legal Research (the Recommendations). The Recommendations focus on process and methodological issues, namely, how and what methods can help a legal scholar to identify and explore a gender dimension in a given topic. The authors suggest five steps while planning and carrying a legal research on any given topic. The authors adapt to legal research the following non-legal methods that can help to integrate a gender dimension: interview, focus groups, content analysis, discourse analysis and etc.The Recommendations were presented in 2018 at the conferences devoted to human rights, as well as distributed within the academic community in Belarus and brought into practice. During 2018-2020 the Recommendations were tested by interdisciplinary interuniversity teams in various legal topics. The pilot tests showed that legal scholars lack experience in analyzing law with a gender dimension in mind, and the Recommendations can provide a supportive methodological basis to contribute to this analysis. Evaluation of the Recommendation has been carried out in 2019. 174 legal researcher in Belarus have been asked to answer a questionnaire. 141 of them used the Recommendations and introduced the gender dimension in their research, and 73 of them introduced the GDI methodology to students. The improvement of research quality due to gender dimension integration was noted by 93,3 percent of respondents.

Transparent and Resilient Gender Equality through Integrated Monitoring Planning and Implementation-TARGETED-MPI

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender inequality, Business & Management schools

Women remain under-represented in all disciplines and at all levels of academia, especially at the professorial level, in senior leadership roles, including deans, university vice-chancellors and presidents (Shepherd, 2017), and in gate-keeping positions, such as editorial boards and research funding bodies (Metz et al., 2016, Fotaki, 2013). While gender equality (GE) research has focused mainly on STEMM subjects, little research has explored the effectiveness or reach of GE initiatives in the Business and Management (B&M) context; a review of 26 EC research projects focusing on supporting GE and implementing structural change in research organisations/universities since 2011 has revealed that none of these

projects focus specifically on B&M schools. Furthermore, gender inequality patterns in B&M schools show little signs of diminishing and, in some cases have been increasing (Fotaki, 2013). In addressing this lack of research, the TARGETED-MPI project we present focuses on institutional changes through the development and effective implementation of GE Plans (GEPs) in B&M schools to drive more inclusive, sustainable and transparent academic cultures. This research understands GE as concerning fair treatment, equality of opportunity, equal access to resources, and equal rights and protection regardless of ones gender, which should not be limited by stereotypes, gender roles or prejudice. The complex and multi-disciplinary nature of B&M schools constitutes an important research context to examine GE. TARGETEDMPI adopts an innovative conceptual framework drawing on critical perspectives, organisational culture theory, feminist theory and gender neutrality; this framework acknowledges the social construction of gender and provides the theoretical foundation for accessing and illuminating hard to reach cultural issues and makes transparent deep-seated values and assumptions including how gender inequality, and its reproduction in research organisations, is related to images of science, scientific practice, and the ideal scientist, who historically is male. Organisational policies and practices, presented as gender neutral, continue to reward and support the ideal male worker, leaving women embroiled in invisible, but legitimated inequality mechanisms. The cumulative impact of these mechanisms results in gender fatigue, where people lack the energy to acknowledge and oppose gender discrimination (Kelan, 2009). This can preserve a culture where women feel marginalised and out of place. Our project proposes the adoption of an innovative methodology to gain insight into complex cultural issues in order to enable the development and effective implementation of GEPs. This includes two significant elements; first, we use a ground-breaking unique diagnostic tool in gender inequality through the development of a culturally sensitive and gender-aware cultural web which illuminates the underlying values, mechanisms, factors, elements and social and cultural assumptions that inhibit the effectiveness of GEPs. Second, through a dynamic and collaborative action-based process that fosters stakeholder commitment, we use the cultural web to bring together theory and practice to engender long-term sustainable institutional change. By employing the cultural web methodology, TARGETED-MPI will produce insights to enable implementation of a sustainable cultural change programme focused on GE planning within B&M schools.

Using a Virtual World to Solve Real World Problems: Empirical Evidence and Perspective Taking Improves Gender Equality Attitudes Among Male STEM Academics

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender, diversity, STEM, interventions, virtual reality

Despite implementation of gender diversity initiatives at UK universities (e.g., Athena SWAN), these initiatives are not always met with positive attitudes among academics, slowing progress towards gender equality in STEM. We proposed exposure to empirical evidence regarding gender bias and taking the perspective of minority group members may improve attitudes towards diversity initiatives. In the current experiment, male STEM academics (faculty, postdocs, and PhD students; N = 72) took part in a virtual reality experience emulating a research conference while electrodermal activity (EDA) was assessed. Participants watched a presentation containing evidence-based information about the causes and consequences of gender bias (versus a neutral presentation), took the perspective of either a female or male academic by viewing their virtual avatar in a mirror, and interacted with predominately male conference attendees. Male academics exposed to gender bias information reported more positive gender diversity attitudes compared to neutral information, particularly when taking the perspective of a female academic. Perspective taking as a female also led to greater EDA compared to those assigned male avatars, suggesting male academics exhibited similar patterns of physiological stress as women in male-dominated contexts. These findings provide evidence for creating successful gender diversity initiatives in academia, emphasizing the utility of virtual reality to promote positive diversity attitudes.

Gender Inclusion and Gender Equality Plans: How Gender Inclusion is addressed in Gender Equality Plans of Austrian universities

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender Equality Plan, gender inclusion, content analysis, Austria

In the recent past, the large media coverage of an intersex* person's complaint concerning an alternative gender category to female and male triggered a discussion on the topic of intersex* in Austria. In 2018 the court decided, with reference to the Convention on Human Rights, a third option, in addition to female and male, must be provided. Of course, this human right is also binding for Austrian universities. This must at least be discussed in the universitys gender equality plans (GEPs).Both the plan for the advancement of women and the GEP are laid down in the Austrian University Act 2002 § 20b. They "serve to implement the constitutional requirements for actual equality". The GEPs focus on the compatibility of study programs or jobs with childcare obligations, anti-discrimination and equal treatment without distinction between ethnicity, religion or belief, age or sexual orientation. Nevertheless, universities are still a place where hegemonic gender norms, heteronormativity and dual gender categories in teaching and research, but also in spatial policies and administration are anchored. In addition, various studies have shown that discrimination by other students, lecturers, but also at the institutional level based on sexual orientation and gender identity is still taking place. This can lead to delays or termination of studies and may even affect health negatively (see e.g. Wilkinson and Pearson 2009, p. 554).This paper aims to present and discuss the first results of a dissertation project that has started in 2018 and addresses the following research questions within the framework of social constructivist understanding: How are gender diversity and gender inclusion addressed at Austrian universities? and To what extent can universities contribute to a (subjectively perceived) inclusion of people with gender (identities) besides the hegemonic notion of gender binarity?At the beginning of this research project, the GEPs of all 22 Austrian universities will be analysed by means of qualitative document analysis according to Margrit Schreier (2012) with regard to the topic of inclusion in the context of gender diversity. The advantage of this kind of document analysis lies in the possibility to reduce

data to the essential and to analyse it systematically, while remaining flexible in the research process, also concerning the coding frame.With the help of this method, the range of current gender-inclusive measures at Austrian universities are to be identified, analysed and finally presented at the conference. In addition, underlying theoretical understandings and definitions of gender inclusion in GEPs will be worked out.

Impact of the Athena SWAN-linked funding incentives for the effective implementation of gender equality plans on womens research leadership

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality plans, Athena SWAN, funding incentives, NIHR, research leadership, structural change

Background: The Athena SWAN Charter provides the most comprehensive peer-review framework for the development and implementation of gender equality plans in Europe [1]. The effective implementation of Athena SWAN gender equality action plans is recognised through Bronze, Silver, and Gold awards [2]. In 2011, the UK National institute for Health Research (NIHR) introduced Athena SWAN-linked funding incentives for women in science, whereby to be eligible to participate in the 2016 round of the competition for Biomedical Research Centre funding universities would need to achieve at least the Athena SWAN Silver award for the implementation of gender equality plans [3].Objectives: To investigate the impact of the Athena SWAN-linked funding incentives on womens research leadership in NIHR Biomedical Research Centres over three rounds of the NIHR funding completion in 2006, 2011, and 2016. Methods: Cross-sectional analysis using descriptive statistics and ?2, Fishers, and t-tests in Stata. The level of significance was set at $p<0.05$. Gender of research leaders was determined as female or male using the name-to-gender inference platform Gender API and cross-checked against the personal pronouns and photos used on their institutional web-profiles. Results: The proportion of women in mid-level theme lead positioned increased from 8% in 2006 and 2011 to 24% in 2016, while the proportion of

women in senior director positions fluctuated between 11%-15%. Tests on the numbers on which these proportions were based in 2011 and 2016 showed a statistically significant change X2=19.1 p<.0001) in the number of female theme leads and no change (p=0.668) in the number of female directors. There was also an increase in the proportion of funding applied for by female theme leads, from 5% in 2006 and 4% in 2011 to 21% in 2016, while the proportion of funding applied for by female-led centres increased from 2% to 4%. Tests on the amounts on which these proportions were based in 2011 and 2016 showed a statistically significant change in funding for female-led themes (X2=77.4 p<0.001) and for female-directed centres (X2=4.69 p=0.03). In 2011, there was no statistically significant difference in mean funding for female-led and male-led themes (p=0.10), but a wide disparity in funding between female-directed and male-directed centres remained (p=0.003). Conclusions: Our analysis suggests a positive relationship between the introduction of the Athena SWAN-linked funding incentives and the accelerated advancement of women to mid-level theme lead positions accompanied by gender equity gains in research funding. Further efforts are required to achieve significant change at the senior leadership level. We recommend that research funders should trial funding incentives for the implementation of gender equality plans and evaluate their impact.

Gender Equality at Universitat Politècnica de Catalunya: how to reach an institutional change by means of Gender Equality Plans

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender Equality Plans, technical universities, institutional change

The Universitat Politècnica de Catalunya (UPC, Catalonia, Spain) is one of the biggest public universities in Spain, and belongs to the STEAM field. Technical Universities are known to be male dominated institutions where achieving gender balance and gender equality (GE) is especially difficult. The UPC has been promoting actions aiming at reaching a more gender

balanced institution for more than twenty-five years. However, despite efforts were made in the past, the situation remains almost the same: a low number of women among the teaching and research staff (especially in higher categories) and few female students. In 2007 the UPC approved its 1st Gender Equality Plan (GEP); at that time, tough, GE was not yet a priority so the commitment was not strong. In 2016 UPC started its 3rd GEP (2016-2020) and in 2017 began its participation in the H2020 GEECCO (2017-2021) project. The UPC 3rd GEP was updated so it was aligned with the objectives of GEECCO, which has three main pillars: (1) decision making (achieving gender balance in decision making bodies and include gender dimension in decision making processes); (2) academic career promotion (increase the number of female students, improve work life balance, break the glass ceiling, etc.); and (3) include gender dimension in teaching and research. The experience of more than twenty years of GE actions that did not significantly change the situation, together with an increasing internal activism, the Spanish social and legal context (Ley Orgánica 3/2007, Ley 17/2015, RD 6/2019), the understanding of the importance of becoming a university with real GE and the participation in the GEECCO project shook the university as a whole and put it on the right way towards an institutional change for GE. Recently some significant advances have been achieved: (1) UPC has been the first university in Catalonia to design a program for teaching exemptions for research intensification after maternity leave; (2) the development of an institutional program, named Aquí STEAM, to attract talent and raise the interest of girls who are in the upper cycle of primary school and the start of secondary school, in the age range of 914 years; (3) a gender coefficient of 1.21 in the evaluation of female candidates for full professor; and (4) for the first time at UPC, the establishment of a vice-rector for equality. There is still a hard and long work to develop. According to our experience, there have been five key points, which have been progressively included as actions of the successive GEPs, that allowed us starting an institutional change: (1) the academic recognition for people involved and engaged in GE at UPC; (2) systematize the GEP design, monitoring and evaluation; (3) training the community (build capacity, raise awareness, increase engagement and commitment); (4) include gender mainstreaming in processes and structures (teaching and research activities, decision making bodies and processes, recruitment and promotion) and make the changes be sustainable; and (5) to allocate resources to ensure the gender perspective in teaching and research.

Application of Gender Equality Plan at technical University of Zilina

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality in STEM; Gender Equality Plans

University of Zilina (Slovakia) was established as a technical university in 1957. In 2010 was the porfolio of study programmes focused mainly on telecommunications and transport offered by 6 faculties enriched by the new programmes of Faculty of Humanities. In May 2018 the university started to implement Gender Equality Plan (GEP) within the H2020 project CHANGE. Despite some research done before on family and partially overlapping with gender topic, deeper gender knowledge was missing on two levels (acoording to the Wetterer, 2009)- expert gender knowledge and scientific gender knowledge. Starting implementing the GEP, university joined two other universities in Slovakia (non-technical) which have implemeted GEPs and University of ilina became the first technical university in Slovakia performing actions towards gender equality. Missing knowledge including the concept of transfer agents (Thaler, 2016) has been complemented by the knowledge provided by consortium partners. Out of 7 partners, 3 have SSH profile (including the coordinator' organization) and one RWTH Aachen University is due to its structure similar to University of ilina (STEM and business orientation of the majority of the faculties, Faculty 10- Arts and Humanities). Besides the knowledge provided within project consortium, important aspect is the best practice sharing inside and outside the consortium. University of ilina joined as an associated partner the Community of Practice for Gender Equality in Central and Eastern Europe of the H2020 sister project ACT. In this way the implementation team tries to reflect the specifities of the GEP implementation at University of ilina which can be seen as three-folded: 1. specifities coming out from organization's internal needs, 2. STEM context, 3. Central and Eastern European context.Discourse on GEP implementation at University of ilina before submission of the CHANGE project proposal started as an initiative of individuals and was soon supported by the rector's office. Therefore already the implementation process itself can be characterised by the top-down approach. Firstly quantitave and qualitative analyses were performed. Qualititive analysis realised in the form of interviews with all the university deans including the rector and futher individuals working on different positions within organization uncovered the perception of gender topic at university. Despite the

presented data from the quantitave analysis at the beginning of each interview, the individual perception of the majority of respondents was that gender is not an issue at University of ilina. The commonly used argument was that not gender but expertise is the decisive factor applied at university what is in line with the general perception about the meritocracy in science. At the same time, the interviews revealed further facts, e.g. strong resistancy against quotas and missing support of the GEP by the broader management. Respondents out of whom only 11% were from the field of humanities understood the gender topic and its justness though the work-life balance (WLB) theme. This finding formed the strategy for defining of particular GEP actions for the first half of the project focused on WLB issues and creating of gender knowledge at university.

Perception and interaction of students in Team Based Learning: the role played by gender.

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Team-based learning, flipped classroom, perception, interaction, gender

Today, higher education faces one important challenge. The new habits of communication and interpersonal relationships in today's society and the explosion and rapid growth of information are, among others, some of the most important aspects of the context that surrounds the students in higher education systems. A student who has often to confront a higher education anchored in a traditional education system. This system is still largely based on the teaching-teacher tandem, in which the protagonist lies with the teacher who teaches and transmits her knowledge to the students.This situation has led the need to apply new teaching and active learning methodologies to enhance creative and critical thinking and to encourage autonomous work. One of the strongest methodologies that has emerged has been, among others, the so-called Team Based Learning (TBL) methodology in its various variants. TBL is an innovative and simple collaborative work-based teaching strategy that combines individual work outside the classroom and the benefits of small-group task

development within large groups of students.In this new university environment in which the center moves from teacher to student and from teaching to learning, it is important to know what the perception is of the active part and the real protagonist of the learning process about the TBL methodology. At the same sense, the student plays a very important role in the TBL since one of the most important aspects of this methodology is the creation of dynamics in small working groups in which the interaction that takes place between the members has an important effect. An in-depth study of the implications of team member interaction on individual performance would also allow for improvements in the application of this methodology.As in any interpersonal interaction, the social and demographic characteristics of its members can play a significant role. At this respect, gender is without doubt one of the most relevant aspects. Analyzing the role of gender in the social interactions of teams is essential in order to adapt the methodology to the diversity of students.Despite the growing literature on TBL, little attention has been devoted to the research and study of the role played by students and their interactions in this methodology. This paper analyzes and evaluates two important aspects related to TBL: the students' perception of this methodology and the impact that group interaction has on individual performance, in particular the role played by gender. This aims at contributing in the field of literature on motivation, achievement and commitment to higher education.An analysis using descriptive statistics and econometric regressions will be performed. In each case, the analysis will be carried out taking into account various socio-demographic variables and, in particular, gender aspects. The results obtained regarding the motivation, the performance and the commitment with the learning process that the students perceive from the TBL, as well as the effects of the interaction within teams, will allow to design improvements in the application of the methodology and to adapt the diversity of students.

Gender study on the labor situation of graduates on engineering in Galicia-Spain

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Gender, engineering, survey data, labor environment, vertical segregation

In the framework of a project aimed at updating the academic data of access, enrolment, academic performance and graduation of the high education engineering studies of the University of Vigo (Pontevedra and Vigo campus), data from a survey sent to graduates were analysed in order to assess the professional situation of graduates, especially women. People surveyed are graduates on mining, energy, forestry, industrial and telecommunications engineering studies, including all specialties, both from higher engineering and technical engineering academic levels (data from 1965 to the present) and European Higher Education Area (EHEA) adapted degrees. For comparative purposes, graduates from Naval and ocean engineering from University of Coruña and, as feminized degrees, graduates from health sciences degrees of University of Vigo were included. The survey collected information for the graduates on the degree of success in accessing the labour market related to studies, category and type of work, salary, difficulties that arise in job search and work environment and policies of the companies aimed to facilitate the reconciliation of labour and personal life.The survey was answered by 508 people -172 women and 336 men-; the proportion between women and men was adjusted, accordingly, to the gender ratio in engineering studies. The analysis of the survey revealed a high degree of employability (87%) of the population surveyed in professions related to the studies carried out, the proportion of active women versus inactive women being similar to the same proportion in mens group. Most women working today took six months longer than men to find current employment, but men and women felt equally satisfied with regard to the development of their work. Vertical segregation was detected for the population surveyed: the percentage of part-time contracts was higher in the women's collective and, also more women than men received medium-low (below 1400 euros/month) salaries. Nevertheless, no horizontal segregation was detected so no differences between men and women with respect to the professional category were identified. Regarding work environment, the perception of situations of gender related discrimination in workplace was significantly higher in women than in men (98% versus 22%). 50% of women surveyed who are currently working in this area did not feel valued in their jobs; among men, only 10% feel this way in their jobs.The results obtained confirm the need to incorporate, at the university level, cross-cutting activities aimed at raising awareness about gender inequality in technological and engineering workplaces.

Reconciliation Policies in Spanish Academia: Addressing Institutions as the Problem?

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↳ **Keywords:** Universities, reconciliation policies, institutional resistances, Spain

Womens underrepresentation in science has inspired a variety of equality policies at different institutional levels. Spain represents a forerunner at this respect as a gender perspective has been included into crucial norms in the last 15 years (Alonso, 2016). Still the adoption of gender sensitive measures does not equate to the implementation of a transformative approach involving institutional change (Krook and Mackay, 2011). This work delves into the policy measures aimed at facilitating reconciliation of work and family life for university teachers. It explores the extent to which they are being put into practice and why. To do so, we chose the University of Santiago de Compostela (USC) as our case study. The implementation of reconciliation rights in the USC might be eased by a far-reaching legal framework at the regional level of Galicia. The universitys leading role in promoting gender equality in the Spanish context represents another facilitating condition. However, a gendered institution that has long privileged hierarchy and seniority as a sacred principle may well raise significant resistances to adopting measures that challenge this norm (Mergaert and Lombardo, 2014). A documentary analysis, in-depth interviews with key informants and four focus groups with members of equality commissions at the faculty level contribute to capture the lack of institutional enforcement at different organizational levels. Female teachers are expected to actively invoke their rights in an unsupportive institutional environment. The findings of the study are consistent with former scholarly work invoking the need for an approach that frames academic institutions -and not women- as the problem.

Gender research in engineering studies in Galicia - Update of academic data

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↳ **Keywords:** Gender, engineering, academic data, enrolment, access, academic performance rate, STEM vocations

In this paper, we present the results of a gender perspective analysis of the data of access, enrolment, academic performance and graduation of the high education engineering studies of the University of Vigo (Pontevedra and Vigo campus) since 1965 (engineering and technical engineering) to present, as European Higher Education Area (EHEA) adapted Bachelors Degree and Master Degree. Mining, Energy, Forestry, Industrial and Telecommunications engineering studies are analysed, including all specialties for which data are available. For comparative purposes, Naval and ocean engineering data from University of Coruña and, as feminized degrees, data from health sciences degrees of University of Vigo were incorporated.As results, we highlight: 1) the average entry qualification of women was, in all the years of the study, higher than the average entry qualification of the men's collective; 2) the stagnation around 25 % of average presence of women in these studies since 1989; 3) among all the engineering fields analysed, Telecommunication engineering was the most masculinized degree (women:men ratio of 22:78); within industrial engineering fields, the specialties of Electrical engineering, Electronic engineering and Mechanical engineering were studied only by 15% of women while Chemical engineering stands out for the highest percentage of women (40%) of all the studies analyzed. In all studies and for the period analyzed, women always obtained better results in terms of performance and evaluation rates. It should be noted that the differences between men and women in terms of these rates was higher in the most masculinized academic environment (such as Electric engineering degree). However, the comparison between health academic studies revealed that rates of evaluation and performance of women have always been higher during the study period regardless of the gender of the studies (masculinized - engineering, feminized - health sciences).These

results confirm the need to continue carrying out actions that promote STEM vocations in girls, especially in primary education.

All the feels: Emotions and Diversity Strategies in Higher Education Institutions

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topics: GENDER AND INTERSECTIONALITY

↳ **Keywords:** Intersectionality, diversity, discrimination, university, emotions

The process of institutionalizing diversity in order to combat intersectional discriminations in higher education institutions (HEIs) is an endeavour that has been likened by its practitioners to banging ones head against an unmovable brick wall or made them compare themselves to plumbers, whose strategies slowly unblock institutional blockages so that the matter of diversity can circulate around (Ahmed 2012, 26-28). In this respect, research has explored the connection of diversity and feelings both in the critical description of diversity as feel good politics (Ahmed 69) or by laying the focus on how diversity talk becomes happy talk (Ibidem 72). Less attention has been paid to the role that the emotions of those who need to be taken on board in the institutionalization of diversity play in the process of circulating diversity matters and doing diversity work. Based on interviews with diversity workers and administrative staff of three international Higher Education Institutions (HEIs) at different stages of development and implementation of their diversity strategies- this article explores the way emotions circulate (or not) in the practice of embedding diversity in the HEIs. Based on the framework of Ahmed (2004 & 2012), it argues that paying attention to which, if and how emotions circulate in the various administrative limbs allows us to unveil neuralgic points for the flow or blockage of diversity matters in the university body. The politics of emotion become, in this way, crucial to the politics of diversity embedding in HEIs.

Monitoring and Assessing Gender Gap In Events

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender

The importance of participation on academic conferences is well known for the members of the scientific community. It is not only for the feedback and the improvement of the work is also about career development, building networks and increasing visibility. Nevertheless, women continue to be under-represented in these academic events and even more in the most visible positions such as speaking roles. Different research studies (Jones et al. 2014; Nittrouer et al. 2017) turn a spotlight on diverse aspects in womens participation in academic events such as the differences on exposition time between women and men, different roles of participation, importance of women participation as a member of the Organize Committee to provide greater opportunities for women to speak or the idea of token-women to fill the female quota in events, among others. However, efforts have been carried out to highlight the critical under-representation of women (Morehouse, Garcia, y Fierascu 2018) In this communication, we expose our project MAGGIE (Monitoring and Assessing Gender Gaps in Events). The aim is the development of a tool based on performance indicators, which will allow monitoring and evaluating gender roles and inequalities in scientific and political events in order to tackle the underrepresentation of women. Our objective is identifying all these relevant perspectives or dimensions, and to design specific lists of performance indicators for each of them. These indicators will allow the organizers of the high-level scientific and policy events to monitor their performance according to each specific dimension. Performance indicators are supposed to shape behavior and practices in some desirable direction in our case into a high-level events practice with no gender gap. This tool is based on a combination of two multicriteria techniques: AHP and AHPSort. The purpose of our new panel of performance indicators will be to support and provide evidence and arguments to inform political debates and academia policymaking in the field of gender equality in these events. Methodological approach:1. Selection of indicators (criteria) and relevant aspects. Use of literature review, in-depth interviews and focus groups. 2. Prioritization of the criteria by the experts. Use of

AHP 3. Analysis of feasibility. Construction of composite indicators4. Definition of threshold levels (limiting profiles) for each indicator. 5. Evaluation of the events. Use of AHPSort. 6. Discussion of the results and recommendations Two different events have been monitored. In each event all the data were gathered in person and manually: Five political international eventsThree scientific international events A traffic light visualization approach, where red means bad performance, yellow average performance and green good performance will help us to present the results for each indicator. Proposals for improvement actions addressed to the red indicators will be agreed between the research team and the scientific and organizing committee of the events.

Inspira STEAM, female role-models to promote vocations among girls

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↳ **Keywords:** Gender, STEAM, vocations, sorority

The last figures on the role of women in science show the scarce presence of women in STEM areas (She Figures 2018). This underrepresentation poses many challenges to Europe, such as the reducement of the talent pool in technological sectors or imbalances in the European Research Area. For this reason, the research and initiatives to promote female vocations in STEM have experienced a significant boom. Some of the identified initiatives are:- Inspira STEAM (University of Deusto)- EuLES Network (University of Zaragoza)- Engineers for one Day (University of Lisbon)- Wisibilizalas (University Pompeu Fabra)- Technovation. One of the main reasons for seeking to promote STEAM vocations is to ensure that individuals with the necessary profiles are available to cover the shortfall in specialists that is expected to arise in the coming decades. This includes future occupations that have not yet been designed. Numerous studies have estimated that jobs in fields related to STEAM are likely to increase markedly in the coming years (a rise of 14% is expected by 2020 in Europe (Balanskat 2014) and a rise of 14.8% by 2022 in the USA.However, working to improve STEAM education is not just a question of employability; indeed, numerous criticisms have been made in the sense that focusing on employability as the sole reason for choosing degree course in STEAM may actually be driving young people away from science and technology (Gago 2014). By contrast, it is necessary to focus on the human and ethical values of science, on developing citizens with a critical mindset who understand the

technology that surrounds us and maintain a positive attitude towards it. This paper presents Inspira STEAM, a pioneering project that seeks to foster scientific and technological vocations among girls, based on raising awareness and orientation actions led by female specialists working in the fields of research, science and technology. This is the first time that group mentoring techniques have been used in a project for encouraging STEAM (Science, Technology, Engineering, Art and Mathematics) among primary school children. Inspira STEAM started four years ago with 17 mentors (female role-models) and 200 girls from 11 schools in the Basque Country. The last edition, 2019-2020, finishes with 250 mentors working with 2.135 girls and 2.145 boys in 80 schools. Moreover, it has extended to many other regions in Spain (see figure) and we are launching the first edition in Chile.Also, we analyse other initiatives developed at European level and the results achieved. The loss of female talent in these areas is a leaky pipe with many holes that need to be closed. We need to put together the objectives, methodologies, materials, target groups and results of different programs to join forces and complement actions oriented to address the barriers girls face when opting for scientific or technological studies and careers.

Becoming a CHANGE agent for gender equality in a technical institution - reflections on challenges and facilitators

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↳ **Keywords:** Gender Equality Plans, change agency, knowledge co-production, structural change

For female engineers gender equality is often a side issue of their professional day-to-day life. But what happens, if by successfully participating in a European call, they were given the opportunity to take part in an EU project that supports equal rights in research organisations? They suddenly become change agents within their institutions, a new role which has to be simultaneously fulfilled to their professional role. Awareness of gendered organisational processes and an understanding of gender inequalities is seen as one pre-requisite for successful change agency (Husu 2013), as well as the will to take on the role as a change agent (Parsons and Priola 2013).In our paper we want to reflect on the challenges and opportunities met during our so far two-year involvement in the EU funded project

CHANGE, which aims on supporting research organisations and universities in developing and implementing tailor-made gender equality plans (GEPs) to improve equal opportunities. We were enthusiastic to take on the role of change agents, additionally to our role as scientists conducting external research, but little did we know about the existing institutional gender inequalities. Our organisation, where we are currently responsible for implementing a GEP, the Fraunhofer-Institute IFAM is a very technically oriented institute. In the field of science and project research are 27.7% female employees. Of the employees with an academic degree at project manager level, 22.3% are female, but below this level 40.2% of employees are female. The scientists in our institute mainly come from three subject areas: Mechanical/process engineering, chemistry and physics/astronomy. The proportion of women in these subject groups is also very low. The proportion of women at departmental and group leader level is 13% (all figures refer to 2018). The data shows that we are an institute with a majority of male staff, which becomes even more evident at the higher hierarchical levels. Since CHANGE started we have built up a lot of expertise, implemented first gender equality actions at IFAM and became much more sensitive about inner-institutional gender inequality issues, and therefore also gained a different perspective on the situation of women especially in STEM fields. This process is especially supported through mutual knowledge exchange with others, which can be divided into three main layers: 1) internally institutional e.g. sharing experiences with other Fraunhofer institutes and the headquarter; 2) consortium-related based on the knowledge co-production approach of CHANGE (Dahmen-Adkins, Karner und Thaler 2019); and 3) externally by attending relevant stakeholder workshops, conferences or meetings with EU-funded sister projects. The fact that our work as CHANGE agents is embedded in a well-funded EU project has given more importance to our roles. Through a lively exchange, with the support and respect of colleagues and our transfer agent, a person anchored in management who has committed himself to support CHANGE, we are trying to improve the working situation at IFAM for all genders.

Inclusive innovation: mapping and understanding women's participation in university spinout companies in the UK

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Spinout, innovation, commercialisation, university, gender

Between 1998 and 2017 the proportion of women inventors worldwide almost doubled from 6.8% to 12.7% and from 2011 - 2015 the global share of women inventors listed in patent applications was 14% (Elsevier, 2019; IPO, 2019). Despite this slow but promising progress, the global innovation ecosystem is highly dominated by men and evidence from the UK suggests that 83% of UK venture capital deals going to all male teams (British Business Bank, 2019). This lack of gender diversity in the innovation ecosystem means that the actual and potential talent of women researchers is under-utilised and this impacts on the quality of knowledge and innovation that is being produced.Research by the IPO shows there is a much higher proportion of women inventors associated with academia than in industry but our research has found that in the UK, only 13% of active spinouts have at least one woman founder and that 59% of spinouts have no women listed in the C-suite. There is also evidence that women led spinouts are not growing to the same extent as mens and are receiving less capital to do so. In this paper we will present the findings of a two year project we have been working on at Oxford Brookes University, in collaboration with Oxford University, which seeks to understand the institutional level barriers that may be hampering womens participation as spinout founders and leaders as well as highlighting enablers and areas of good practice. Using mixed methods of data collection and analysis, the project maps the landscape of university spinouts in the UK, explores women and mens experience of founding spinout companies, and assesses the appetite for commercialising research amongst early and mid-career researchers in several UK institutions. Interviews with 35 women and men spinout founders show that although many women do not feel disadvantaged by working in a hegemonic masculine environment, they almost all have a story of discrimination or exclusion as a result of their gender. We argue that women face accumulated disadvantage across their journey to spinning out, regularly experiencing gender bias, stereotyping and even overt sexism. By drawing on further evidence from a series of focus groups conducted with early career researchers in, we trace these experiences back to a culture where stereotypes and unconscious bias continue to be present in the research community

even amongst younger generations of researchers. Furthermore, we find a rather diverse landscape of institutional and disciplinary attitudes towards commercialisation of research which have an effect on individuals decisions to pursue academic entrepreneurship. We will also present examples of how project findings have informed not only policy recommendations for institutions and the wider innovation ecosystem but also fed into developing resources that are more geared towards fixing institutions and systems rather than fixing individuals.

Higher education institutional strategies towards breaking the gender gap in STEM: the Girls4STEM project

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender gap, STEM, ICT, SDG

In an increasingly technological world, qualified personnel in Science, Technology, Engineering, and Mathematics (STEM) branches is essential. The lack of STEM vocations, especially in Information and Communication Technologies (ICT), is becoming problematic. Moreover, the proportion of women deciding to study STEM careers is worrisome with unacceptably low rates that have not stopped falling since the '80s, e.g., in computer engineering. This situation implies losing the talent of half of the population, something that neither the STEM-ICT sector nor society, in general, can afford, as well as increasing the gender gap in employment.Nowadays we can find several studies indicating that girls' loss of interest in STEM starts at an early age. Girls start to reflect a lack of confidence in their abilities for STEM disciplines starting at 6 years old [1]. To overcome this situation, different types of measures are necessary [2], including making visible the social role of STEMs as well as generating female referents in which girls can "imagine" themselves. In this scenario, non-university educational institutions are fundamental, with universities being key in generating references and disseminating the applicability of these disciplines. Higher education institutions can act in three dimensions: i) interacting with families, primary and secondary education centers, and other agents to promote inclusive and

equitable quality teaching-learning processes from childhood; ii) collaborating with alumnae to build professional support networks; and iii) supporting students who have already completed the studies [3].Following these premises, in 2019, the University of Valencia (Spain), aligned with its III Plan of Equality, launched the Girls4STEM project which is based on three lines of action: i) acting from early ages; ii) showing the day-to-day work in the STEM areas; and iii) using female role models. Girls4STEM is an extension of a pilot program been developed since 2011 at the School of Engineering (ETSE-UV) which has helped to increase the percentage of female students registered in Computer Science Engineering and related degrees seven points above the Spanish national average [3].Project activities are focused on non-university students and intend to show them what STEM professions consist of through the organization of activities that combine leisure with scientific dissemination. The project, designed in a participatory and inclusive spirit, makes girls and boys active participants, thereby increasing personal confidence and, consequently, reducing their fear of taking risks in choosing STEM studies and promoting lifelong learning opportunities for all. To increase the impact on girls, the project uses voluntary women as referents (STEM experts). In particular, the goal is to make visible the role of women within STEM disciplines, to mainstream gender equality, and to ensure quality education, objectives specifically fixed in the fourth and fifth Sustainable Development Goals (SDG4 and SDG5), which explicitly refer to the ICT field as an enabler to promote the empowerment of women.Girls4STEM helps Today's girls and boys to change Tomorrow's society, aiming for a more sustainable future in terms of equity, inclusion, diversity, prosperity, and justice.

Changing gender dynamics in meetings: clarifying and destabilizing the taken for granted

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender mainstreaming, gender equality meetings undoing gender

Using current gender equality initiatives in the academia (Karlstad University) as a case study this paper addresses tools for mapping, interactively analyzing and changing power dynamics in meetings. A governmental effort for gender mainstreaming in colleges and universities

(2016-2019) has influenced change efforts for gender equality at universities in Sweden. At Karlstad University, one of the objectives in the university action plan involved meetings, and the possibility for influence in relevant forums irrespective of gender or other background variables in relation to function.Meetings encapsulate a recurring organizational routine and space for interaction that virtually all staff can relate to. They hence form a continuous space with the possibility to tackle a main Achilles heel in gender equality programs: sustainability and integration in everyday practices (De Vries & Van Den Brink, 2016). The space opens for social interactions, which enact different patterns of power, inclusion and exclusion where e.g. position and gender are performed, and gender differences can both be reproduced and reduced (Deutsch 2007). Interactions in meetings can affect both conditions for individual careers and possibilities to contribute to and influence decision making, for example, through patterns of confirmation or not giving attention.Based on my work with gender equality work at the faculty for humanities and social sciences at Karlstad University, this presentation will look at measures to analyze and change meeting power dynamics. It will also zoom in on key areas and challenges such as the interweaving of gender and position, highlighting and countering master suppression techniques and the sometimes painful process to move between structural, interactional and individual level. Reflections on the dilemma of addressing gender inequalities or differences while not cementing gender stereotypes are brought up, calling for the acknowledgment of both varieties and highlighting practices that counter power asymmetries. The study of the interactional level holds the possibility to not only document inequality but to recognize interaction as a site for change. This presentation will thus conceptualize gender equal and inclusive meetings as a potential practice of equality in a context with unequal gendered structures and segregation of disciplinary fields, despite political and legal initiatives for gender equality (Husu 2019).

Proposals for a co-responsibility plan at the University of Granada. Care, genders and works

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Co-responsability, cares, genders, work, university

The University of Granada shows some imbalances in the representation of women and men who still need concrete measures to achieve work and care parity. The involvement of women in the UGR in the two culturally assigned gender spheres: the type of work and the care tasks, are warning about the urgent need for specific support tools to achieve a better personal, family and work reconciliation.In this communication we will approach the concept of care as a social construction composed of practices and meanings associated with the daily support of life, which coexist in a specific space - time, which in our case is related with the University of Granada.We are interested in understanding care relationships from a gender perspective - men, women and other genders, class and working status, emphasizing the investigation of the social consequences of female overload in the social reproduction of families and communities and how These charges or overloads are supplied, predictably maintaining the models that reproduce the assignment of roles in other women in precarious situations.We are going to propose what will be some lines for a co-responsibility plan at the University of Granada, seeking to bridge the care gap between women (teachers, administrators, students, external workers) and men (professors, administrators, students, external workers) in a common map of care.

Mentoring for Change

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Mentoring, bifocal, gender-integrated

Mentoring for change is a gender-integrated mentoring programme conducted in 2018/2019 by the Faculty of Science at Lund University[1]. It is part of the facultys strategic work on gender equality, and the programme was funded by grants from within the University. All parts of Mentoring for Change are research-based. As far as we know, in Europe, Mentoring for change is an untested form of mentorship with a double (bifocal) approach, in which both the participants in the programme and the facultys organisation are developed. The idea is that mentors and mentees together learn to see and identify obstacles in academia that make gender equality more difficult. Mentors and mentees should act together as partners for change and propose organisational changes to increase diversity and equality within higher education.The inspiration comes mainly from Dr. Jennifer de Vries of University of Melbourne,

Australia[2]. The design of group mentorship is inspired by European mentoring programmes within academia, which have been described and analysed over the past ten years in a series of reports and articles. With regard to both design and implementation, the aim is to translate existing knowledge into a Swedish academic context. The programme is influenced by experiences gained from the Lund University programme for gender-integrated leadership training, AKKA[3]. The first round of this mentoring programme is evaluated in a report (https://www.science.lu.se/internal/support-and-tools/mentoring-programme). [1] Möller R., Lövkrona I. and Brage T. 2019, Mentoring for change evaluation of a gender-integrated mentoring programme, Lund University, Sweden (available from research portal https://portal.research.lu.se/portal/)[2] de Vries J. & van den Binns J. 2018, Sponsorship: Creating Career Opportunities for Women in Higher Education, Universities Australia Executive Women (UAEW), Canberra, Australia.[3] Brage T. and Lövkrona I. 2016, Core values work in academia; with examples from Lund University, Media Tryck, Lund University, Sweden (Available through research portal https://portal.research.lu.se/portal/)

Gender Perspective in Physics

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Physics, guide, gender perspective

Physics has one of the largest gender gaps in science. When looking at the figures (MICIU, 2017) it is clear that physics, more than most other subjects, suffers from both horizontal and vertical segregation.The lack of diversity in physics is not only an issue of inequality; it affects the physics we do and the systems we create (Wade, J. and Zaringhalam, 2019). Womens underrepresentation in science has serious consequences for how research is conducted and applied (García-Dauder y Pérez-Sedeño, 2017). Along the same lines, Caroline Criado Perez, winner of the prestigious Royal Society Science Books Prize, highlights the ways women are forgotten on a daily basis around the world, for example, 71% of the safety equipment used by women has been designed for male bodies. Last year we saw how NASA canceled the expected first spacewalk of two women due to lack of tailored suits.Therefore, the subject of

all physics is affected by the background of the researcher, teacher and student, and it follows that a gender perspective is needed (Brage, 2019). And to do this, it is key to publicize the good practices that have been carried out in this subject (or others in the same field) in both Spanish and foreign universities. This is what is intended in the Guide for the Incorporation of Gender Perspective in the Teaching of University Physics, which is part of a collection of eleven guides from the Luis Vives Network of Universities for university teaching with a gender perspective. A guide that covers all aspects (competences, methodology) showing how the gender perspective can be introduced in physics.

Challenges for introducing structural change for gender equality in Polish academia. Reflections from GEECCO and GENERA H2020 projects.

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↳ **Keywords:** Gender equality, academia, engineering, physics, stereotypes, Poland

Implementing gender equality measures has been only lately initiated in Polish academia, mainly through the participation of the Polish research organizations in European projects aiming at structural change. Cooperation in European research teams together with more advanced partners gives Polish research organisations, being at an initial implementation phase, access to gender equality expertise and good practices as well as financial resources. However, there are numerous challenges and barriers that impede smooth implementation of gender equality policies that need to be addressed throughout the whole process. Drawing on experience from participation in two H2020 projects aiming at structural change, in engineering (GEECCO) and physics (GENERA), we will discuss the cultural and institutional obstacles to effective implementation of gender equality measures in Polish academia. Authors of this work present specific perception of the current challenges for women working in the same city of South Poland, but at two different universities, representing sciences and engineering. Both investigated case-studies were experienced in the EU Horizon 2020 projects, both were located in the same city of Krakow, during the same decade, but represent two different backgrounds at different universities. The same cultural and geopolitical situation has created a common environment for development of

science, research and career opportunities at the two academia. However, the ways how gender equality is implemented in transportation engineering at Cracow University of Technology, and in science of physics at Jagiellonian University, are not the same. The first one, Cracow University of Technology, is a 75 year old engineering school, while the second one, Jagiellonian University is the oldest Polish university with over 700 years rich history and traditions. Gender equality in the context of STEM and the academia in general means: 1. Reduction of vertical and horizontal segregation (underrepresentation of women in male-dominated sectors); 2. Balancing the asymmetric gender culture in organizations (removing structural barriers for women); 3. Integration of a gender dimension in teaching and research (gender awareness-raising among the academic engineering staff). Aiming to contribute to these three key topics, the perception of gender equality at two Cracow universities were compared. The EU Horizon2020 project Gender Equality in Engineering through Communication and Commitment GEECCO is running at Cracow University of Technology. The GENERA - Gender Equality Network in the European Research Area was run at Jagiellonian University till 2018. Both projects were focused on structural, procedural and cultural changes towards gender equality and aimed in removing barriers to the recruitment, retention and career progression of female scientists for addressing gender imbalances in decision making processes and to strengthening the gender dimension in research programs, which is in line with the EC goals.

A systematic literature review of online misogyny intersectionality: main issues, relations and strategies for gender equality plans

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topics: GENDER AND INTERSECTIONALITY

GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Online Misogyny, intersectionality, gender equality

This communication is part of our research project Visibilizing and measuring the scale and scope of sexual and gender-related violence in universities (SeGReVUni) belonging to the Plan Estatal de Investigación Científica y Técnica y de Innovación del Ministerio de Ciencia, Innovación y Universidades(RTI2018-093627-B-I00. Agencia Estatal de Investigación-Convocatoria 2018. Proyectos de I+D+i Retos Investigacio?n). This research addresses some

of the main thematic lines of the 11th European Conference on Gender Equality in Higher Education. And its main objective is to make progress in the design of instruments and protocols for the detection of gender violence in university institutions. Specifically, the contribution we are presenting now focuses on the study of sexual and gender-based violence in digital spaces and media, as well as its relationship with other traditional spaces. As we explain below, our point of view originates in the idea that the problems of Sexual and Gender related Violence (SGRV) must be approached in blended and mixed realities. And this object of study will be referred as online misogyny. We consider that our research may be relevant for the development of future actions in the thematics areas: Policies fostering structural change for gender equality in the research, technology and innovation system and Gender Equality Plans and strategies in research, technology and innovation institutions. In addition, according to one of the two cross-cutting dimensions for all the conference areas of the Conference (Gender and Intersectionality), our contribution addresses online misogyny from the perspective of intersectionality. From the idea that technologies not only facilitate, and add, existing forms of misogyny, but create new ones that are inextricably connected with the technological possibilities of new media, the algorithmic policy of certain platforms, the cultures of the place of work produced by these technologies and the people and communities that use them, our contribution presents, through a systematic review of the bibliography, the state of the question about the so-called online misogyny. All this with the purpose of identifying the main approaches of interest, as well as emerging methodologies. As will be seen, this systematic review allows us to appreciate the intersectional nature of online misogyny, as well as the way in which this intersectionality reinforces the exclusion of women from digital Internet infrastructures, which implies a lower probability of participating in both production and consumption of its tools, platforms and services, as well as reproduce the most fundamental structural conditions of inequality and discrimination in the technological field. Moving away from dichotomous visions that see technologies in a single plane, we place ourselves in a scientific production that recognizes them as a complex, nodal and localized space. We see these spaces as public, political and traversed by power relations, and therefore a place of violence and possible reappropriation and transformation of practices. The technologies can be a field of practices for the eradication of Sexual and Gender related Violence, among them, the design of instruments and protocols for detecting gender violence in university institutions.

Powers, genders, and the myth of the critical mass

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality policies, critical mass, quota, gender competence

In this talk, I will assess two commonly used policy instruments and their contribution to gender equality in research: sex quotas and gender competence. In most countries womens participation in academia increased significantly in the last decades - women now represent the majority of students and graduates but they remain the minority in STEM fields and in university leadership positions. Several countries and institutions developed policies to increase womens participation in all fields and in top positions. Often, these polices are based on the implicit assumption that culture will change once a critical mass of women holds positions of power in the system. One effective policy instrument to fix the underrepresentation as it mostly leads to a significant increase in the share of women in university boards and committees is the sex quota. E.g. Austria introduced in 2009 a legal quota regulation for university bodies which requires a gender balanced composition of rectorate, senate, university council and all commissions set up by the senate. In Germany, non-university research associations and some universities voluntarily committed to apply the cascade model, which encourages preferential hiring of women to e.g. leadership positions. Feminist scholars assumed that cultural changes occur as soon as a critical mass of women in leadership positions was achieved (Moss Kanter 1977). More recent empirical studies on women and men in management and leadership show contradicting findings on the impact of women on gender equality in the academy. These studies challenge the assumption that women in leadership per se contribute to more equality (Humbert et al. 2019; Benschop und van den Brink 2014). This dilemma has been recognised and a discourse about gender competent leadership started. Gender competence can be defined as a specific knowledge combined with a specific attitude which is a prerequisite for successful implementation of gender equality policies by decision makers. All decision makers should dispose of fundamental knowledge of gender roles, understand the key gender differences in science and research and should be willing to work towards gender equality goals and to involve gender equality experts whenever necessary. Experiences with

such instruments illustrate that increasing womens participation and cultural change are two distinct gender equality objectives which have to be pursued by specific approaches.This paper explores the contributions of sex-quotas in contrast to gender competence to the gender equality project in German and Austrian university management. I analysed discourses and practices that shape institutional norms and practices and legitimate the status quo. I applied a feminist institutional perspective to a corpus of recent studies from Austria and Germany and contribute to feminist theory, explaining why organizational transformation in university leadership has not occurred as expected. Finally, the talk outlines what role gender competent leadership can play in designs of equality policies in the future.

Research Funding and Academic Careers

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender Equality, research funding, academic careers

A significant aspect in building an academic career today is the ability of junior researchers to raise their own research funding. Women and men are equally able to perform excellent research. Therefore, to achieve gender equality in academia, it is crucial that all scientists have equal chances at acquiring third party funding. For various funding instruments, including prestigious European grants differences between men and women exist, in terms of application behavior and success rates [1]. Not only do women place fewer applications in comparison to their male colleagues, but they are also granted research funding less often than men do.The underrepresentation of women in science and research is still a reality in Switzerland. To facilitate equal opportunities for men and women, specific funding schemes were developed to support the careers of women researchers, and various targeted measures were taken at national and institutional levels [2]. Within the current Gender Equality Action Plan at the University of Zurich, one project addresses the important subject of research funding and academic careers [3]. With this project, our institution aims to systematically identify and take advantage of its possibilities as a potential host institution for external research funding, to ensure that female junior researchers in particular do not experience unintended bias. The aims of the project are to encourage

more female junior researchers to compile research-funding applications and to submit them to the corresponding bodies at national and European level, and to increase the success rates of these applications. For this, we organized various training sessions, workshops, seminars and panels with successful grantees, to share from their career stories with potential female applicants from our university. Additional workshops focused on the possible impact of unconscious bias on the funding advice and support given to academics, as well as on funding decision-making [4].We will present the project, which follows a multi-level approach, consisting of different levels of action within the application and grants system: personal (individual) level, institutional (structural) level, and research level. We will also discuss recent results in the area of increasing the number of research applications by women researchers from our university at national and European level.

[1] European Research Council, ERC Gender Statistics, https://erc.europa.eu/sites/default/files/document/file/Gender_statistics_Apr2018.pdf [2] Swiss National Science Foundation, Gender Equality in Research Funding, http://www.snf.ch/en/funding/directaccess/gender-equality/Pages/default.aspx [3] Project Research Funding and Academic Careers, Gender Equality Action Plan, University of Zurich, https://www.gleichstellung.uzh.ch/en/politik/aktionsplan2017/projekt_2.html [4] Measures and Activities, Project Research Funding and Academic Careers, https://www.gleichstellung.uzh.ch/de/politik/aktionsplan2017/projekt_2/massnahmen.html

Open Educational Resources and Gender Challenges and Opportunities for Gender Equality in Higher Education

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender equality, open education, open educational resources, digitalization, teaching

In the European higher education context, the importance of Open Education (OE) rises as digital technologies and media are fostering innovation and change. Open Education comprises different components, namely Open Education (OE), Open Access (OA), Open

Educational Resources (OER), Open Educational Practices (OEP), and Massive Open Online Courses (MOOC). We refer primarily to Open Educational Resources. The implementation of OE/OER is a crucial phase for the higher education context because it includes negotiation and agenda setting, a process in which mostly gender (equality) is not taken into account. It is also not the key task of gender equality offices to be involved in such processes. However, neither the implementation nor digitalization itself is (gender-) neutral. Therefore, a gender-competent perspective is indispensable. While recent digital developments might often represent a challenge, we would like to stress that they also represent an opportunity and elaborate on how they can be used to strengthen gender equality in higher education. In our argumentation we refer to Opening up Education. A Support Framework for Higher Education Institutions, a framework provided by the European Commission. As a starting point of our oral communication we will give a brief overview of the debate. We will refer to several initiatives in the field. Firstly, the Toolbox Gender and Diversity in Teaching (a cooperation between the Margherita von Brentano Center for Gender Studies (MvBZ) and the Gender Equality Office at Freie Universität Berlin), and secondly, the GenderOpen Repository for Gender Studies as well as the OpenGender Platform which are key to the extensive OA activities at MvBZ. We then use our own experiences to discuss challenges and opportunities. A central question is which contents are suitable for digital mediation, e.g. is it even possible or to what extent is it possible to impart gender and diversity competence in digital teaching and learning environments. The university context brings along further challenges. Short-term project financing go hand in hand with short term financing of human resources. Technical resources at universities might also be a pivotal limitation. Another challenge is that different communities (e.g. the gender in teaching community and the open education community) do not communicate across their borders to create intersections is costly, time-consuming and requires certain skills on all sides. In addition, within the university context teaching is not prioritized and also not valued, to acquire additional digital competencies consequently does not pay off and requires a high level of commitment from teaching staff. Teaching staff may also have a certain distance to digital teaching methods in general, this at least often is the case in the field of gender studies.A more general challenge is the fact, that Open Education reaches many people, but still cannot contribute to a change of the university context. However, we see Open Education as a possible tool to organizational development in view of gender equality. We will argue that OER can be a sustainable way to gain and communicate knowledge as well as a tool for the democratization of education.

Developing Gender-Sensitive Curricula in Malian Universities: A Step Forward Towards Gender Equality

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↳ **Keywords:** Mali, gender mainstreaming, gender-sensitive curriculum, gender equality, female empowermen

There is a close link between the under-representation of female academics in Malian Universities (9,3%), female students low performance (21% compared to 35 for boys) and the lack of gender mainstreaming in the teaching curricula and academic policies. Even though, Mali has embarked on a process of reducing gender disparity in all levels of the educational system in compliance with the ECOWAS gender policy of 2004 and the Sustainable Development Goals (SDGs), gender equality remains the missing link of academic institutional transformation and its Achilles heel. To redress the glaring gender imbalance, Mali adopted a National Gender Policy in 2011 to achieve gender equality and thereby ensure the economic empowerment of women. It is important to recognize, however, that this gender policy has not been implemented in ULSHBs curricula which are still gender-biased and gender-blind in their majority. Despite the creation of gender units and inter-university gender consulting groups in 2016, gender is still not integrated in the institutional framework of the universities. This lack of gender mainstreaming makes curricula and policies unresponsive to challenge the sociocultural realities and constraints that impede womens empowerment and academic success. Consequently, the teaching curriculum reproduces gender stereotyping and reinforces traditional gender roles instead of dismantling them (Kabeer, 2005:17). This study focuses mainly on the Université des Lettres et des Sciences Humaines de Bamako (ULSHB). It argues that without a sound gender-sensitive pedagogy, ULSHB will find it difficult to meet the challenge of female empowerment and institutional transformation, a prerequisite for the attainment of sustainable education and development. To achieve these goals, the study recommends gender trainings for students, teachers and the whole staff, the designing of toolkit to evaluate gender integration in the curricula, the promotion of gender-fair langage in the classroom. It is established that innovative and gender-sensitive curricula can enable the university to meet the challenge of female academic excellence while reinforcing the presence of female lecturers. In doing so, ULSHB, and its sisters

institutions, will achieve inclusive and equitable quality education and lifelong learning for girls and boys while strengthening their capacity to be open-minded and gender-sensitive leaders. Additionally, Womens empowerment, gender institutional transformation and capacity-building will be a reality. Intersectionality (Crenshaw, 1989, Bilge, 2009; Maillé, 2014), Womens Empowerment Framework (Longwe, 1999) and the Harvard Analytical Framework will be used to assess the level of gender mainstreaming in the Universitys curricula and policies and its impacts.

Gender in Academic Networking from an Institutional Perspective: The View of Change and Transfer Agents on Networking in Promotion and Recruitment Practices

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Academic recruitment, career development, gatekeepers, networking, gender practices

Gender research on networking practices in organizations have shown that these practices are gendered and produce inequalities. Missing awareness of the routinized gender practices in accounts of networking is seen as an important explanation for the persistence of structural gender inequalities (Van den Brink & Benshop 2014). Networking practices produce discrepancies between institutional employment and career development guidelines that are implemented in research organizations with the aim to increase transparency in these procedures. Moreover, it seems difficult for change and transfer agents to identify and make visible these informal practices.Against that background the GenderNetz project, funded by the German Federal Ministry of Education and Research, investigates to what extent careers of postdocs in the engineering sciences and information technology are influenced by relationships and network contacts. We want to gain insights in micro-level activities of postdocs and gatekeepers in a scientific field where women are structural and cultural in a marginalized position. However, as part of the project, we conducted not only qualitative interviews with postdocs and professors

as gatekeepers at research institutions. We carried out as well focus group discussions with change and transfer agents in order to also gain insight into institutional employment and career practices from an institutional perspective. Participants of these discussion groups were staff in charge from the administrational and management area, e.g. equal opportunities, human resources, mentoring programs as well as management boards. Based on the results, in our presentation we will explore the question of which narratives the interviewees use in describing their roles and positions in the day-to-day management of the research organizations, with special focus on a gender just shaping of recruitment and promotion practices. How do change and transfer agents judge their influence on shaping change in their institutions on the structural level, which limitations do they face and which are factors (cultural, policies etc.) that support their work? And finally, we want to explore how they assess the impact of (informal) networks for academic staff on postdoc level and beyond, also with regard to the phenomenon of homophily (Ibarra et al. 2010). In the last part of our presentation, we want present and discuss gender equality strategies that are seen promising to counter inequality through networking practices. These strategies are informed by the interviews and by the results of a Design Thinking Workshop carried out as part of the research-to-practice-transfer strategy of GenderNetz.

Ten Years of the NSERC Chair for Women in Science and Engineering in Ontario (Canada): Changes, Outcomes and Impact

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topics: APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY
GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Women in science and engineering, higher education, leadership development, interdisciplinary research, career development, professional skills development

Canada´s Chairs for Women in Science and Engineering Program has seen 16 women hold major research chairs at universities across the vast geography that is Canada since 1989. The most recent Ontario Chair will be examined for its nine year history to evaluate its outcomes and impact as well as to discuss long-term changes in the science and

engineering (S&E) environment, both academic and in the workplace, in regards to womens participation and advancement. Chair activities were focused on leadership development both at university and at work, in industry and government, as a vehicle to fostering womens success in S&E. Results of the design and implementation of the Chair program will illustrate how impact was scaled up over time to reach over 22,000 people in the last two years alone and 30,000 over all nine years. Interdisciplinary research led by the Chair also provided a stronger network for women to thrive in. For example, a peer entrepreneurship mentoring network, designed by engineering and management researchers, boosted participation rates in startup pitch competitions from practically 0 to 50% in two years. Interdisciplinary research with historians and librarians has led to the creation of a National Archive for Women in STEM, a doctoral thesis on the birth and development of Computer Science university programs in Canada and womens marginalization during the process, as well as a book on the 30-year history of the Chairs program. As the Chair program comes to a close, the Chairholder is in a unique position to offer perceptions of long term changes in the sphere of women in S&E. Capacity changes such as those in the leaky pipeline landscape will be observed, using examples of participants who benefited from several activities of the Chair program. Policy changes in Canada over the last decade will be brought into context to form a picture of progress for women in S&E and institutional change over time. Finally, the outlook for the future of equity and diversity in S&E in Canadian higher education and Canadian workplaces will be discussed.

Androcentrism in the professional education in Brazil

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender, science, androcentrism, inequalities, indicators

This investigation aims to understand how the androcentrism is produced in the Federal Institutions of Scientific and Technological Education (IFEs) in Brazil. IFEs offer professional education and have their history marked by an assistentialist perspective of education, unrelated to a scientific background and aimed exclusively at poor men. However, in the last

15 years the professional education has undergone many changes and nowadays it has a structured network of federal public institutions, distributed throughout the country, and offers education at various educational levels (including undergraduate and graduate). In this new configuration, IFEs have as a rule the inseparability between science, technology, culture, work and citizenship and the relation between education, research and extension. With this innovative and diversified model of scientific and technological education, and with the elimination of formal limitations to access to women people, they are present at IFEs, as students and teachers, which represents a great transformation in professional education in the country. While advances are undeniable, there are many obstacles that make equal participation difficult to women's in IFEs. Gender inequalities in knowledge production places are a worldwide phenomenon and have mobilized much research. The causes of these inequalities reported in the academic field are multiple and involve explanations in the field of epistemology, sociology, history etc. To understand how this process of androcentric construction of knowledge is produced in IFEs, national indicators of gender and science in these institutions were produced. The construction of the indicators required an exhaustive work of requesting data, since the institutions were initially unable to offer the information. The information gap in the situation of women in Brazilian science is a problem that has hindered research in the area. After many negatives responses and by requesting data in each of the country's IFEs, it was possible to obtain a mapping of the situation of women in these institutions. The indicators show that women people are present, both as students and as teachers, in a equal way in the graduation. However, when analyzing the professional trajectory and the access to research grants are observed, it is observed the existence of vertical segregation in the academy. On the other hand, the indicators also reveal the existence of horizontal segregation in IFEs, where men and women are mainly concentrated in the areas historically intended to each gender, thus persisting the traditional division of labor. In our perspective, and as some studies carried out in Brazil and in other countries point out, this situation indicates the androcentric character of modern science. Knowing how these inequalities are produced can raise important questions and contribute to discussions about the promotion of equality, the quality of scientific practice and the planning of actions needed to address the gender inequality of Brazilian science.

Institutional change towards gender equality, reflexivity and resistance: learning from top-down and bottom-up approaches

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Reflexivity, resistance, top–down GEP implementation, bottom–up GEP implementation

Gender equality plans (GEPs) are one way to initiate and sustain institutional change towards gender equality (GE) in research organizations. TARGET - a H2020 institutional change project - adopts a reflexive approach: GEP has to be more than a formal institutional policy; it should represent a framework for mutual learning among relevant actors, shared reflection and co-development of practice. Only in this way the relevant actors will be able to identify gendered practices, tackle resistance and develop alternative, non-gendered practices. This paper deals with reflexivity and resistance by comparing top-down and bottom-up experiences of GEP implementation in two universities.The paper builds on TARGET reflexive approach of institutional change, which links reflexivity at the individual and institutional level (Wrobleski 2015). Furthermore, we assume universities follow a dual logic which makes change a complex goal (Heintz 2018). The 'scientific' logic, which characterizes teaching and research, is the dominant one. However, universities are also organizations and therefore follow specific 'institutional' logics. This dual logic has consequences in terms of who are the relevant actors to be involved in institutional change - and how they should be involved. We adopt this theoretical approach to analyse the effectiveness of top-down and bottom-up experiences of GEP implementation.To do so, we address first context factors. Both universities lack a national policy supporting GE in higher education and research. However, the relevance of GE in politics and society differs sharply: it is very high in the case of the university following a bottom-up approach, whilst it is very low in the other case. Second, we analyze GEP implementation in both cases, focusing on the kind of actors involved, the explicit and implicit objectives of GEP and the kind of resistance encountered. The 'bottom-up' experience is characterized by engaging in a sustained way top- and middle-management, teaching and research staff (either gender and non-gender experts) and PhD students. On the contrary, the 'top-down' experience has just involved top-

management, a small team of gender experts and technical services. In both cases, the explicit objectives of the GEP were rather unambitious. However, the 'bottom-up' experience was driven from the start by the implicit objective of achieving in a short time a clear change in some gendered practices. Obviously, this hidden agenda has faced strong resistance from several individuals in powerful positions within the university. However, resistance has been implicit because of the relevance of GE in public life and the official commitment of top management - and it has been effectively counteracted by the ability to engage a wide and diverse set of both 'scientific' and 'institutional' actors in GEP implementation. This has not been the case of the second university: GEP implementation has been slowed down due to external factors as well as anticipated diffuse resistance (lack of support to GE as a current institutional priority). In the concluding section, we try to learn from these experiences, highlighting the advantages of a bottom-up approach which involves both 'scientific' and 'institutional' actors - including at least in a formal way top-management

Professorships in NRW (Germany) – is there a Gender Pay Gap?

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↳ **Keywords:** Gender pay gap, professors, performance benefits

Gender Pay Gap is widely discussed in the economic world but rarely in higher education. So, how does the situation look like at German higher education institutions? Since a reformation, the payment of professors ('Besoldung') differs in W1 (used for 'junior professors'), W2 (often used for universities of applied sciences, but also for professorships at universities) and the highest paid professorship W3. The payment consists of a basic salary and performance benefits in contrast to the former payment system based on seniority. Since the introduction of the W-payment and the additional performance benefits, negotiated with the head of university, how have salaries of women and men developed?The presentation will focus on the results of the Gender-Report 2019 (Kortendiek et. al 2019), which analyses the gender (in)equalities at universities in Germany (in the state of North-Rhine Westphalia) in its fourth edition. The focus study of the Gender-Report 2019 examines equal pay for different personnel in higher education such as professorships, scientific staff and supporting staff. The focus of the presentation will be on

the professorial level and includes a multi-perspective analysis. First, we will show statistics of the payment of performance benefits for all full-time working full professors who were paid W2 or W3. To support the findings we will present main results of an online survey with over 1500 professors of North-Rhine Westphalia working in one of the 37 universities about performance benefits and W-payment.The presentation will show that there is a gender pay gap on the professorial level and how it differs by field of study (for example in engineering sciences or the humanities). Based on the online survey and expert interviews we will give some answers on how the gender pay gap can be explained. How do female and male professors describe the negotiation of performance benefits? Do female and male professors feel discriminated during the negotiation? What is their overall opinion about performance benefits? In addition, what measures can the state initiate concerning equal pay? The presentation will conclude with some recommendations for action.

Gender-based Violence at School: School Professionals Training Needs

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↳ **Keywords:** Training needs, school professionals, gender-based violence, adolescents

Gender-based violence (GBV) is a pervasive phenomenon among adolescents all over Europe (FRA, 2014). Schools provide a unique context in which preventive interventions in violence by teachers and other school staff can be delivered on a large scale to a relatively captive audience, and in a systematic manner. Despite this, although teachers and other school professionals are in a key position to identify the problem and intervene, previous research shows that they often lack the skills and knowledge to detect and address problems of GBV (Stanley et al. 2015). This lack is largely due to lack of training in the subject as referred by themselves (FRA, 2014). The European project, Education and Raising Awareness in Schools to Prevent and Encounter Gender-Based Violence (ERASE-GBV), joints efforts from Universities and public and non-governmental organizations from Croatia, Finland, and Spain. The project seeks to cover the abovementioned needs by (a) increasing school professionals awareness and abilities for preventing and addressing GBV through the design and implementation of a training course on GBV for teachers trainee students and

other school professionals students, and by (b) training school professionals to recognize and address exposure to GBV in children, by providing support and referring them to services, and reporting GBV to authorities.The first phase for developing the training course entailed a needs analysis in each of the participating countries. Focus groups and surveys were used to collect the perceptions of a) working teachers and other school professionals; b) teachers trainee students and other school professionals students; and c) university professors working in teacher and other school professionals education. In this presentation, we report the needs analysis results for the Spanish context, in comparison to those for Finland and Coratia. Results showed some similarities and differences in the training needs for each target group, and specific needs and expectations will be reported.

Fighting gender bias in the field of astronomical research

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender, bias, careers and promotion, initiatives

Gender is one facet of the broader theme of diversity. Years of dedicated efforts to tackle gender equality in society and workforce show positive but slow improvements. Therefore, equality (here to be intended as just between women and men) remains an important goal, yet to be achieved in many fields. Academia is no different. If in some fields, the gender gap is starting to close at the entry levels of higher education, women researchers and professors continue to lag behind in terms of promotions, grant recipients, prizes and awards, leadership. The large majority of women are still found to be the main care-givers, the ones with the highest load of housekeeping chores, those who suffer the most from impostors syndrome and from harassment in the workplace (cf. the Joint Global Survey of Scientists).Also astronomy is no different. Although this is a field that has attracted, at least in some countries, large numbers of girls and women, it is nonetheless impacted by the same issues (cf. Primas 2019). This presentation will focus on two key aspects that play an important role in the progression and evaluation of astronomers careers and promotions. Namely, ones success rate in being awarded telescope time and ones scientific productivity. Many astronomers rely on telescope time to progress on their research investigations.

Detailed analyses (e.g., Reid 2014; Patat 2016) at different world-leading facilities have shown that in the peer-review evaluation of telescope time proposals female astronomers have, on average, 20-30% less chances to win telescope time than their male colleagues. Similarly, past studies of bibliometrics in the field of mathematics and astronomy (e.g., Mihaljevi?-Brandt et al. 2017; Caplar et al 2017) have revealed several disadvantages for female researchers, ranging from less publications at the beginning of their careers, fewer single and/or first authored papers and in less high-ranked journals, overall lower impact. For the former, we will present the counter-measures that have recently been or are about to be deployed to ensure a more transparent and fair peer-review evaluations. For the latter, a new, independent analysis of gender patterns in bibliometric statistics in the field of astronomy will be presented based on the data collected by the ISC Gender Gap project, across journal types, countries of affiliation and geographical regions.

Gender dimension in STEAM curricula at Universitat Politècnica de Catalunya: a teamwork process to create the recommendations guide

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↳ **Keywords:** Gender dimension in curricula, polytechnic universities, institutional change

The Universitat Politècnica de Catalunya, UPC-BarcelonaTech (UPC, www.upc.edu) is a public university belonging to the STEAM (Science, Technology, Engineering, Arts and Mathematics) field. Since 2007, UPC has been involved in the definition and development of Gender Equality Plans (GEP) to enhance gender mainstreaming, i.e. by reducing gender biases at all levels of the institution. In 2016 the UPC started its 3rd GEP with 10 strategic lines. Later, in 2017, it began its participation as a partner in the H2020 project Gender Equality in Engineering through Communication and Commitment (GEECCO, 2017-2021). The GEECCO project has three main pillars: (1) decision making; (2) academic career; and (3) gender dimension in teaching and research. It is within this third pillar where gender in

curricula was firstly addressed at the UPC. As a result, a new strategic line was added at the GEP. In 2018, the Catalan University Quality Assurance Agency (AQU Catalunya) enacted a regulation to incorporate the gender perspective in all higher education programs at Catalan universities from the 2020-2021 academic year onwards, which constituted a pioneering measure in Europe. This new framework triggered a UPC pilot project during the 2018-19 academic year to integrate the gender perspective in teaching, named GiD (acronym for Gender and Teaching, in Catalan). The drive group included GEECCO staff together with members of the UPC Education Science Institute.GiD was conceived as a UPC instrument to promote the change among its teaching staff. An open call was defined in order to build a team of teachers under one main goal: to prepare a UPC specific guide of recommendations to aid with the assessment and practice of a more gender-inclusive teaching. The call was a success, obtaining a team of 41 lecturers teaching at 8 different UPC degrees.GiD methodology was based on the 4 teaching pillars: contents, methodology, classroom management and assessment. The fundamentals of each pillar together with some examples were presented to the team and discussed along 5 working sessions. The application of the proposed strategies in the ongoing courses and lectures were assumed. Within GiD project a questionnaire was drawn up and distributed to analyze the students perceptions on gender equity at UPC. This was done in collaboration with students associations and 540 students answered the questionnaire (M. Alsina et al.). Stemming from the results obtained in the questionnaire and from the experience gained all along the project, the UPC recomendations guide was published. In order to ensure a long-term sustainability of the efforts and to promote a school culture, several training sessions have been provided and the guide is being disseminated among the different UPC centres.GiD has transformed the integration of gender dimension in teaching from an initiative in the frame of GEECCO to an institutional matter. Moreover, a network of expert lecturers from different UPC schools and campus has ben built and can spread the voice to the entire UPC community. To sum up, GiD can be seen as a seed for the introduction of gender dimension in teaching.

Preventing and addressing gender based violence at Spanish Universities: if the mountain won't come to Muhammad ...

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender based violence, university, prevention, intervention, LGBTI

Gender based violence (GBV) is a pervasive social and public health problem all over Europe (FRA, 2014) and prevalence is even higher for young people, including University students (Delegación del Gobierno para la Violencia de Género, 2012). Moreover, both young women who suffer gender based violence and young men who perpetrate it tend to seek professional help for this problem to a far lesser extent than older adults. On the other hand, most (Spanish or European) Universities do not offer any specialised services for their students (or staff) affected by GBV, beyond the sexual harassment protocols they are obliged to have in place by law. To improve prevention, early identification and access to specialised services for both young survivors and young perpetrators of GBV in the University context, the Programme for Universities against GBV was developed in 2015 by Conexus Association, a non-profit NGO in Barcelona, Spain. Through memorandums of understanding with different public Universities in Catalonia (University of Barcelona, Autonomous University of Barcelona, Politechnic University of Catalonia and Pompeu Fabra University) and in close collaboration with their gender units and students associations, the main activities of the programme have centred around 1) awareness raising on gender equality and GBV in the University communities through campaigns and workshops, 2) training on identifying and addressing GBV in the University context (for both students, teachers and other staff) and 3) delivering specialised services to female students whove suffered and male students who have perpetrated GBV in their relationships. Lately, all activities of the Programme have been extended to include and address violence in LGBTI relationships, too.This presentation will briefly explain the main objectives and development of the Programme since its creation and report on the data collected so far on the activities delivered, the numbers and profiles of people who participated reached and attended. Finally, the main lessons learned, current challenges and future perspectives of

this innovative and integrated programme to prevent and address GBV in Universities will be shared and discussed.` `

"Less than yes means no": Sexual consent in universities

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Consent, sexual harassment, university, prevention, communicative acts

Recent data from the Association of American Universities found significant levels of sexual misconduct on campus associated with an increase in the rate of nonconsensual sexual contact by physical force or inability to consent (AAU, 2019). To prevent and eliminate sexual harassment and abuse at universities and research centers is crucial to increase the scientific knowledge on the issue of sexual consent. The student movement was pioneering in opening the debate on consent in sexual relationships. Increasing policies and awareness campaigns on this issue have been developed in different countries, particularly in the US, in the UK, Australia, among others. These campaigns started focusing on the slogan, "no means no." Importantly, they contributed to breaking the silence about sexual violence and harassment on campus and universities as well as to advance to current understandings of consent based on the idea that "only yes means yes". Despite all the progress made so far, new scientific considerations are needed to broaden the understanding of consent providing new elements beyond verbal language and speech acts. The popular and widespread definition of consent, "only yes means yes" may remain insufficient to analyze situations in which, despite someone saying "yes", there can be other coercive and unfree social interactions, power relationships, among others, behind that "yes", which actually means "no". Multidisciplinary approaches have addressed the issue of consent. According to the National Sexual Violence Resource Center (NSVRC, 2015), consent is understood as an affirmative and enthusiastic agreement clearly communicated and ongoing yes. This communication draws on the contributions provided by the first Spanish RTD project that investigated Gender-Based Violence in Spanish Universities (Valls, 2005-2008), as well as on a complementary research project Impact of communicative acts in the construction of new

masculinities (Soler, 2010-2012). Also, we conducted an integrative literature review on the topic. The aforementioned scientific contributions have opened new understandings of social relationships at universities, such as the concept of "institutional power" and "interactive power." The first refers to the power someone has within institutions, while the second one is related to the power provided by the interactions established among people (Flecha, Tomas & Vidu, 2020). Both contributions go beyond verbal language and speech acts opening new via to understand potential unconsented sexual acts that in the past might not have been clearly identified as not consented. Also providing further analysis on elements, social interactions power and interactive power relationships at universities to identify current harassment and sexual violence (Flecha et al., 2020; Valls, Puigvert, Melgar & García-Yeste, 2016). This contribution aims to bring to light new approaches to the issue of consent embedded in the scientific contributions of the theory of Communicative Acts and social inequality in gender relationships. Implications for research, policy, and practice will be discussed to achieve effectively sexual consent and prevent sexual harassment and violence at universities.

Gender Equality in Higher Education in Portugal

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality, higher education institutions, gender relations, Portugal

This paper aims to present the preliminary results of a research project on gender equality in higher education that is being conducted in Portugal with funding from the EEA Grants and to discuss the recent but rapid institutionalization of gender studies in this country by focusing on the role of the Interdisciplinary Centre for Gender Studies (CIEG/ISCSP-ULisboa) in this process. CIEG, which was founded in 2012 and was awarded the Excellent rating by the Portuguese national funding agency for science, research and technology (FCT) in its two assessments, is the only Portuguese research centre that focuses specifically on gender studies and is one of the institutions involved in the research that will be presented in this

paper. The main goal of this study is to produce knowledge and tools to mainstream gender equality in the Portuguese academia and to emphasize the role of higher education institutions in promoting values of citizenship and diversity.Portugal stands above the EU-28 average in the proportion of women in higher education (ISCED 5-8) and has been identified as an example in terms of gender balance in research, even in subjects where women are generally underrepresented (European Commission, 2019; Elseviere, 2017). However, strong gender inequalities persist in this universe as shown by the high percentage of women in precarious situations and the low proportion of women in top positions, namely among deans, vice-deans and full professors (European Commission, 2019). Additionally, qualitative research has highlighted that, in general, those in decision-making positions show a gender blindness and presume that higher education in Portugal is gender neutral (Carvalho, White and Machado-Taylor, 2013). This paper will start by exploring the gender inequalities revealed by the secondary analysis of data collected by central public services on faculty members from public and private higher education institutions in Portugal. Then, it will focus on CIEGs contribution to the institutionalization of gender studies in this country by considering its activities in the following spheres: research, teaching at postgraduate level and knowledge dissemination. It will be argued that higher education institutions have a key role in the promotion gender equality as part of a broader commitment to the values of citizenship and diversity and that the recognition of the work undertaken by research centres such as CIEG may contribute to that collective effort.

Prevention and care of sexual harassment in universities.

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↳ **Keywords:** Second Order Sexual Harassment, bystander intervention, sexual harassment, prevention, university

One of the main policies fostering gender equality in research, technology and innovation system are those addressed to eradicate and prevent sexual harassment. The European project ASTRAPI aims to carry out a European Toolkit, which will provide methodologies and tools to prevent and handle sexual harassment in the work place. As partners in this project,

we are contributing with successful actions implemented specifically in universities for the attending and eradication of this social problem. This paper presents three of these actions, as results of the literature review and our involvement in prior research on gender violence in universities. These actions are: 1) The institution's recognition of the problem; 2) Networks of support: Bystander intervention; 3) Second Order of Sexual Harassment (SOSH).Institutional recognition of the problem: sexual harassment is still a problem that remains normalized in some university contexts. A culture of silence still prevails among victims for fear of reprisals. This silence enables impunity for the harasser. Although male harassers in universities are a very small percentage, they benefit from this law of silence. Universities need to stop understanding the problem of sexual harassment as an individual problem. There is a need for an institutional recognition that eradicating sexual harassment requires involvement of the whole university community - because if you are not part of the solution you are part of the problem (Puigvert et al. 2017).Networks of support (bystander intervention): facing institutional resistances, solidarity networks have an essential role to play (Vidu, 2017). In Spain, the Solidarity Network of Victims of Gender Violence in Universities was created by survivors and faculty who supported them in response to the lack of institutional response, after the first complaint filed against a professor for sexual harassment at the University of Barcelona. Second Order Sexual Harassment (SOSH): In 1990, Dziech and Weiner (1990) have been pioneers in emphasizing the idea that those who stand in solidarity with the victims may suffer negative consequences because of that, so they also need to be supported, attributing to them the concept of second order of sexual harassment victims. From that decade onwards, no further research was carried out on the consequences for those second order victims. One of the reasons of this lack of research has been to focus the emphasis on the direct victims and to prioritize their welfare and to provide the necessary tools for institutions to act in favor of survivors and against harassers (Vidu et al., 2017). Nevertheless, the number of reports and people who broke the silence has increased as victims have felt supported (Choate, 2003). In the last decade, it has become more evident that it is key to also support those who assist victims facing the risk of possible reprisals (Burn, 2008). In this sense, it is impossible to overcome sexual harassment if second order of sexual harassment is not also addressed. It is precisely to support and meet survivors needs that it is essential to protect those who support them (Banyard et al., 2010).

Big Data and Gender Equality - New tools for the Analysis of Recruitment Procedures in Higher Education Institutions

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↳ **Keywords:** Big Data, gender equality, appointment procedure, indicators for structural change

Appointment procedures are a vital element in the long-term quality of research and teaching at higher education institutions. However, the nature of the procedures also leads to inequalities. The lack of formalized recruitment, the composition of appointment committees in conjunction with a homosocial recruitment culture as well as gendered performance evaluations lead to systematic discrimination, especially against women. This presentation will focus on the analysis of the integration of gender equality in appointment procedures in German Higher Education Institutions on the basis of a big data web analysis. The majority of these institutions have adopted legal rules, guidelines and/or recommendations for appointment procedures in order to professionalize them and to counteract gender-specific inequalities. The universities also provide extensive information on their websites on the gender equality perspective in the appointment procedures and on the stakeholders involved. The analysis is part of a research project that aims to develop quality standards and guidelines for gender equality measures in Academia in general and especially for recruitment procedures, gender competence and mentoring. The project applies a mixed methods approach, consisting of qualitative interviews, a web survey and a big data analysis. The big data analysis will be carried out using data from the German Academic Web collection (GAW). It contains regular crawls of all German university web pages since 2012. Both the methodical procedure and first results of the analysis will be presented. The analysis aims at developing and testing indicators for the structural integration of gender equality in recruitment management. The tripartite approach starts by identifying lines of cooperation between central units responsible for appointment procedures and the gender equality units. In order to measure the scale of the integration of the regulations and policies, a stocktaking of the relevant appointment documents will be carried out. It will be filtered out which universities have adopted such guideline, how binding they are and to what extent gender equality is prioritized. Finally, the guidelines are subject to a qualitative analysis that aims at mapping focus areas and trends, especially in

the course of time using text mining tools. The results of the project actively contribute to new insights in the stage of integration of gender equality oriented recruitment management and a broader understanding of gender-equitable structures in higher education institutions. Furthermore, a contribution can be made to a web-based, comparative gender-oriented higher education research.

Reaching Top Management in Academia

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Leadership, university top management, training program

In Switzerland and in Europe, universities are still male-dominated institutions. Although there is almost a gender balance among doctoral students (EU: 48%, CH: 44%), women are less represented in academia, as they move the academic ladder. There are only 24% women in A-grade academic positions at European level, and 23% in Switzerland [1]. The European University Association (EUA) recently reported that between 2014 and 2019, the number of female rectors has increased by 36%. However, there are only 14% of rector positions in the 46 EUA countries held by women. In very few countries, female vice-rectors are a majority (Latvia, Denmark, Norway, and Island) and some countries reported gender balance. Overall, women hold 30% of all vice-rector positions, after several initiatives were implemented in the last five years [2]. In Switzerland, as in many other countries, there is a paucity of women in academic leadership positions (e.g. deans, presidents) [3]. Important actions were taken at national and institutional levels towards achieving gender equality in academia. However, a leadership program focused at high-level academic leadership was missing. All Swiss universities have joined their efforts and started an exclusive leadership program, to specifically train and empower female professors to become university leaders. The H.I.T. High Potential University Leaders Identity & Skills Training Program Gender Sensitive Leaders in Academia is part of the cooperation program Equal Opportunity and University Development by swissuniversities [4]. The H.I.T. Program is centered on skills and leadership identity training for female professors from all disciplines across Switzerland. It is structured in four blocks: Training (Workshops),

Networking, Personalized leadership development (individual coaching) and Gender and Diversity projects [5]. The H.I.T. Program was implemented for the first time from September 2019 to April 2020. Twenty-two participants, female professors from all Swiss universities, have gained specific skills in academic leadership, expert knowledge about the Swiss higher education system and expertise in innovative, diversity-aware leadership. We will present the outcome of this pilot program, including evaluation points from different actors of the program: participants, trainers, partners and other collaborators. Throughout the program, a valuable network of participants, role models and experts has been created.

Women in the neo-liberal academia: one step back or one step forward? The case of the life sciences.

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Neoliberal university, STEM, gender equality, women in academia

Over the last years, women have made a significant progress in academia and science all across western countries. Yet, vertical segregation persists, as women are still under-represented in the upper ranks of the academic hierarchy while being concentrated in non stable positions. A well established scholarship has attempted to investigate the mechanisms and the reasons for which women are disadvantaged in the career progression and/or are more likely to drop-out from academia. Explanations include persisting biases in recruitments, a chilly organizational climate, the maternity penalty, womens concentration in teaching and administrative tasks, the lack of support and their exclusion from relevant networks. Within this literature, many authors have investigated the implications on female academics of the recent, neo-liberal, market-based University transformations, arguing that these changes are reinforcing gender inequalities by precarizing early-career phases and reproducing gender-blind discourses on merit (Murgia and Poggio 2019, Van den Brink and Benschop 2011). A few others are less clear-cut in their evaluations, by recalling how the old university model entailed entrenched elites and old boy networks preventing womens advancement in academia (Ferre,

Zippel 2015). In this perspective, current transformations may even disrupt such dynamics. In Italy, neo-liberal university transformations have been defined by (1) the flexibilization of early-career phases (law n. 240/2010), (2) the introduction of systems of evaluation of researchers productivity and (3) the cuts in the public expenditure for higher education, with consequences both in terms of research funds and new recruitments. This paper aims at investigating the effects of these recent transformations for women in the Italian academia and in the life sciences more specifically. A mixed-model design has been adopted focusing on the University of Milan (UMIL). Repeated cross-section data on Italian and UMILs faculty have been collected and analyzed with the aim of identifying the changes before and after the implementation of the recent University reforms. Afterward, in-depth interviews to faculty, post-docs as well as drops-out of the Department of Biosciences have been conducted in order to grasp the organizational mechanisms and the individual strategies underneath womens advancement in the life-sciences. Preliminary results suggest that the recent University transformations have ambivalent implications for female academics. Data show a deterioration of the female representation in the early-career phases after the University reform, while the growing reliance on quantitative-based evaluations may reinforce gender-blind practices in the selection processes. On the other hand, new opportunities for women may occur as long as University transformations reinforce team-work dynamics and because of the increasing need to rely on external funds. However, increasing female opportunities seem to parallel worsening work conditions as long as precariousness is exacerbating socio-economic inequalities among younger researchers, by reinforcing the divide between those who can and those who can not afford a long time of contractual uncertainty. In this perspective, neo-liberal changes may condition the access to tenure track positions and create inequalities among women themselves.

Building academic excellence: a gender impact analysis of the Spanish transfer sexennium

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality, knowledge transfer, academic evaluation

Although formal equality between women and men in the evaluation of academic merit seems undisputed, late research has highlighted the existence of implicit discrimination and unconscious biases, which are intertwined with both the definition of the object of the evaluation and with its objectives. Furthermore, the very process of evaluation is also subjected to these biases, a process in which concrete research outputs are defined as the main (and almost exclusive) indicators of excellence and taken as valuable information for defining academic trajectories. Likewise, the persistence of different gender and organizational cultures particularly reinforced by the segmentation of men ad women in different knowledge areas, turns equality a harder goal to achieve, at least in real terms. The differences in participation rates and even in success rates between men and women, in previous calls for evaluation of academic activity by the Spanish government are a strong indicator of the persistence of these biases, particularly relevant in the Social Sciences and Humanities, where precisely, the presence of women is, in general terms, more balanced or even higher. This paper aims to stimulate an open reflection on knowledge transfer (KT) evaluation policies from a gender perspective. To do this, we first analyse how KT have been defined and operationalized for being measured in this call (What it is considered, and what not, KT in the different areas? Second, we analyze the data from the applications submitted to the Call of Knowledge Transfer Sexenia, launched by the Government of Spain as a pilot initiative in 2018. The analysis of these applications, as well as their success rates, across different areas and fields offer an opportunity to identify the potential impact oft different measures on the mitigation or reproduction of gender biases in scientific and academic careers.The analysis is aimed at enhancing a global reflection on the role of universities as institutions of production and transmission of knowledge, as well as their necessary leadership in the transformation of society to make it more sustainable, equitable and dynamic. How these processes are indeed gendered, and how they can be revisited from a gender perspective to aim at more just and real transformation is the focus of this paper.

Kurdish women rising above the glass ceiling: adopting resilience to foster vocations in STEM fields in Iraqi Higher Education

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender inequality, Kurdish women, resilience, Iraqi higher education, STEM

Despite the fact that today there are many more women holding powerful positions all over the world, there is still a considerable gender gap in the representation of women in academia and especially in science. In relation to women having a careers in STEM fields, developing and developed countries record quite closely in ranking. According to recent data about women in science, the gender gap in science is 41.5% for Arab States as compared to Central and Eastern Europe with the ratio of 39.3% (UNESCO, 2019). Additionally, the advancement of the status of academic women in Iraqi Kurdistan is not satisfactory. Women are immensely under-represented in the scientific-technical vocations, particularly in STEM fields and among STEM degree holders (Ranharter, 2015). Most leadership positions of academic occupations in STEM fields, are exclusive to men and the higher the academic ladder rises, the fewer number of women is recorded. This is an issue related to gender inequality, where the problem of low female access to such positions entails considerable long-term risks for universities, who are unable to remain competitive. However, there is also evidence that women in such male-dominated fields, start to challenge stereotypes and conventions despite discriminations and negative attitudes they are continuously exposed to, they develop resilience and react differently to threatening cues (Bella and Crisp, 2015). For instance, based on a report from Gender Gap in Science project, women are more likely than men to say that they rely on their personal determination, hard work and adopting resilience for their success in science (Guillopé and Roy, 2020). Moreover, while women in Iraqi Kurdistan Higher Education face a visible glass ceiling and various barriers structured by a religiously conservative patriarchal society, a minority group of women succeeded in climbing the ladder and achieved their vocations in the STEM fields in academia. Those women managed to challenge the asymmetric and stereotypical representations of women that relegate them to social and professional roles traditionally attributed to women in the context of Iraq. Therefore, this paper focuses on

analyzing and understanding the reasons behind the success of a small group of women in overcoming barriers. The paper looks at the elements and strategies the women utilized to challenge the norms and develop a strong pipeline of women in STEM careers. The theoretical framework of the study is based around a model of resilience against structural inequality. The analytical sample comprised of twelve women selected from two public and private universities in Kurdistan Region of Iraq and semi-structured interviews were conducted as a technique of investigation. The twelve selected women were in senior and managerial positions in the STEM fields. The responses of the participants were analyzed through qualitative approach of narrative method in order to examine their perceptions of the existent phenomenon. The experiences of those women who succeeded to achieve, attain and promote their vocation in STEM fields were investigated in relation to their resilience at the individual, institutional and social levels.

A research funder and policy makers perspective mainstreaming gender equality

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Research funding organisation, gender equality, diversity, action, review process, grant Evaluation, application success, application rate

Science Foundation Ireland (SFI) aims to remove and mitigate any existing or perceived factors that may limit the participation of women in STEM careers, including the securing of research funding. We present some of our experiences implementing gender initiatives to increase the proportion of women in SFIs portfolio of awards. In-light of the underrepresentation of women in Science, Technology, Engineering and Mathematics (STEM), Science Foundation Ireland has been developing initiatives to tackle the under-representation of women in the STEM research sector and ensure SFI-funded research is relevant to everyone. SFIs Gender Strategy (2016-2020) aims to increase the proportion of women in our portfolio of awards. SFIs target is for female award holders to represent at least 30% of all award holders by 2020 and ensuring that the research funded by SFI is

relevant to everyone in society by considering any sex / gender dimensions. In order to understand the gender balance within Science Foundation Irelands portfolio and to review current gender initiatives, applications to SFI were analysed longitudinally from 2011 to 2017. These data included the application status (awarded / declined) and funding amount requested and awarded, as well as gender success rate. Here, we highlight initiatives supporting a stronger representation of women in STEM and demonstrate how SFIs Gender Strategy integrates into Irelands national policy on gender in Higher Education. Overall, the number of female award holders within SFIs portfolio increased from 21% to 26% between 2015 to 2017. In 2015, a gender initiative was introduced into SFIs Starting Investigator Research Grant (SIRG) Programme, which led to a 22-percentage point increase in female award holders compared to the 2013 SIRG call, when no gender initiative was in place. In 2019 a wider / broader eligibility criteria was introduced to a new funding initiative, SFIs Frontiers for the Future Programme, which expanded the eligible applicant pool and provided more opportunities to secure funding by female applicants. These changes resulted in an increase in the number of female applicants. Specifically, we received an average of 21% female applicants in previous comparable mid to late career stage programmes; this increased to 35% in the 2019 SFI Frontiers for the Future call. Overall the gender balance in SFIs portfolio has improved and specific initiatives such as SIRG and removing eligibility barriers are having a significant impact. SFI will pursue novel initiatives throughout the lifecycle of research funding to improve equality and diversity in the system. We will continue to monitor the impacts of our gender actions, and to innovate and contribute to international best practice.

From theory to practice: possibilities and challenges with courses for professionals in gender mainstreaming at higher education institutions

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender mainstreaming, intersectionality, higher education, teaching module, introductory course

In Sweden, requirements for gender mainstreaming are high both in the Higher Education Act and the evaluations of the quality of higher education undertaken by the Swedish Higher Education Authority. Gender equality and gender mainstreaming in education are

also key quality factors in the universities own quality assurance systems. However, according to previous research, teachers often experience gender mainstreaming in higher education as a challenge (c.f. Heikkilä & Häyrén Weineståhl 2009; Lindroth & Bondestam 2014). Even if many teachers have the theoretical knowledge, we argue that there is still a lack of knowledge in how to transform theory to practice in everyday education. Hence, there is a need for more tools that support teachers in their efforts with integrating a gender perspective into the teaching content, design and implementation. In this presentation we will discuss the development of a teaching module and an introductory course in gender mainstreaming and intersectionality in higher education. The overarching aim with the course is to develop the course participants (i.e. teachers at Halmstad University, Sweden) ability to understand how to move from theory to practice, i.e. how to translate gender theory and integrate a gender perspective in the content, design and implementation of their education programmes. During the presentation we will present and discuss both possibilities and challenges with this kind of courses in gender mainstreaming and intersectionality.

Gendering interdisciplinary joint health research projects: Challenges and Chances

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↳ **Keywords:** Gender dimension, health literacy, interdisciplinary joint projects, research cycle

The consideration of gender as an analytical category in research content and research programmes, both at national and European level, has for many years been one of the demands of academic associations and (research) policy institutions and funding programmes of various kinds. Nevertheless, there is still a clear discrepancy between "knowledge" and "action", between awareness of the importance of the gender dimension in science and research and its actual inclusion in research content and methods. Against this background, the Essen College of Gender Research (EKfG), a central interdisciplinary research institution of the University of Duisburg-Essen, next to initiating and carrying out gender research projects itself, is offering its advice and support in the strategic

development of research-oriented gender components in collaborative research activities of the university. The challenges and chances of resulting collaborations which aim to integrate the gender perspective and gender analysis into non-gender research projects will be in the focus of the proposed oral communication. The paper will reflect on EKfGs current involvement in the research network "Health Literacy in Childhood and Adolescence (HLCA)", funded by the German Federal Ministry of Education and Research (BMBF).[1] The collaborative project aims to investigate different dimensions of health literacy in childhood and adolescence from different perspectives in health promotion and prevention and to develop application and practice-oriented results. In the first funding phase (2015-2018), the network focused on theoretical-conceptual basic research on health literacy in children and adolescents. The participation of EKfG in the consortium next to an advisory function in the consortium's steering committee , was designed to concentrate on the exploitation phase and support the evaluation and dissemination of the results of the consortium from a gender perspective as well as their translation into recommendations for further research, application and practice orientation. Not surprisingly, limited consideration of the gender perspective in the phases of the research process preceding the exploitation phase, especially in the conception and implementation phase, leads to the fact that central prerequisites for obtaining gender-sensitive results are not (or cannot be) fulfilled or developed. Consequently, this results in a lack or gaps in the significance of the results. However, only results and recommendations in which all genders feel taken into account can be expected to meet with sustainable social acceptance and responsiveness. In the second funding phase, (2018-2021), focusing on intervention research, the HLCA Consortium is striving to actively advise and accompany the subprojects on the integration and consideration of the gender perspective in as many phases of the research process as possible explicitly addressing gender aspects in a separate work package to support the development and design of gender-sensitive HLCA interventions depending on the various requirements and needs of the subprojects. The paper will examine whether and in what way the integration of the gender dimension has been achieved in the HLCA consortium up to now and which recommendations for the role of gender researchers in non-gender projects maybe designed on this basis.

[1] FKZ 01EL1424A01EL1424E; http://www.hlca-consortium.de/

Gender inclusion improvements in secondary education

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↳ **Keywords:** Gender equality, secondary education, early age inclusion

Gender inclusion needs to be addressed at an early age. We can definitely talk about gender equality in adulthood as we are the ones that supposedly have the right to speak up and the ones in charge of implementing new policies that tackle arising issues. Nevertheless, gender inclusion needs to be developed at a much earlier age. Right now, new behaviours have been developed in primary schools, where a substantial importance has been put into distributing toys equally amongst boys and girls, into encouraging fair play between sexes and promoting equality and inclusive language. Still, as children grow older, society tends to relax and assume children no longer need guidance and girls empowerment. The years just before university are the ones that I consider the most important ones. On that period psychological traits are forming; identity develops and integration matters to young students. High schools definitely play a very important role. Families might come from different backgrounds, educational levels or even non-inclusive religions or societies, and thats exactly why educational institutions need to put extra emphasis in giving role models to the young forming generations. Teachers are role models outside the families for children in secondary education and the ones that have the power and circumstances to make the change. Working towards gender equality needs to be specially addressed at secondary education, ages from 12 to 18 years old. Those are the children that are experiencing changes in their bodies at the same time that their minds evolve. Current public educational system does not stress enough. Their perception of their surroundings will determine their career choices, and furthermore, their life choices and personal determinations. Thus, this is further addressed as a whole, taking in consideration aspects such as personal development, group development, teaming strategies, adult-youngster relationship, peers interactions, families cooperation and prospective plans related to career orientation. Teaching in STEM related areas is that we have the best working platform to succeed with the change.

Do awards produce gender bias in STEM fields?

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender bias, academic careers, STEM fields, awards, Cum Laude

Gender differences exist in academic careers, and the question is what factors do contribute to thesedifferences. Elsewhere we showed that success in academic careers partly being on the right momentat the right place (Van Balen et al, 2012), as many factors do influence careers. One of the factors areawards researchers receive, such as cum laude for a PhD thesis. In the Netherlands, cum laude is awarded only in exceptional cases, and research has shown that it has a positive effect on the academic career (Brouns et al, 2004). Recently, it was found out that men get the cum laude award about twice as often as women do in most of the STEM fields. This has resulted in a public debate in the Netherland last year.In this paper we analyze the gender bias in award awarding cum laude, as an example. Our case is auniversity in the Netherlands, where cum laude is awarded only for 4.3% of all PhD theses and alsohere men get it more often than women (5.5% versus 3%).Is the difference between men and women because the examination committees adequately pick outthe best dissertations and that more men than women happen to be in that group (Van den Besselaar etal 2017)? Or is the decision making biased, and in this case especially gender biased, and whatmechanisms might cause such bias?In order to test this, we have to measure the quality of the PhD-research. As most STEM PhD-theses in the Netherlands consist of several (published) journal articles, we use the articles authored by the(former) PhD student until 3 years after the PhD was received as a representation of the thesis. We then use citation based indicators to measure the quality of the work. A first regression analysis suggests that the quality of the work does have a positive effect of getting the cum laude award, but that gender plays a role: controlling for the quality of the thesis, women have a lower chance to getthe cum laude award. The next question is why this is the case and in the paper we test various explanations. Does apartfrom the quality of the work, specific social variables (such as the social relation between the PhD student and the supervisor, or the personal characteristics (personality) of the PhD student) may play arole, and why male PhD students profit more than that then females PhD students do.Our

analysis suggests that awards reinforce existing gender bias in the science system if theprocedure cannot be objective, it may be better to get rid of them at all.

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Scientific literacy through gender lenses in initial teacher training

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Women

Several national and international studies and reports (Elsevier, 2020; CSIC, 2020) call for attention to the scarce presence of women in scientific careers. Among the reasons behind this phenomenon, stereotypes, gender roles and sexist behaviors as a result of a gender differentiated socialization stand out, together with the so-called glass ceilings or, in other words, womens difficulty to access leadership positions, the leak theory or the loss of womens talent as they progress in their scientific careers, the absence of co-responsibility in house-work or care, and the scarce presence of women in school curriculum, resources and didactic materials. The present communication aims at bringing out the lack of references to women scientists that may ultimately serve as role models to encourage scientific vocations among young girls (3-to-6-years old). It is achieved by means of the coeducational interinstitutional and interlevel program, granted by the FECYT, Infaciencia3. De las niñas de hoy a las científicas de mañana. Its main objective is to promote gender equality. It is defined by an interinstitutional nature since three different agents take part: the university, the teacher training center and several early childhood education schools. It is also interlevel since both children and university students are involved. More precisely, it aims at: (1) Increasing childrens and students knowledge about the life and scientific contributions of

both historical and contemporary women scientists who have been mostly made invisible; (2) Identifying the obstacles that these women scientists have had to overcome simply because they were or they are women; (3) Promoting scientific vocations among young girls and university students as the studied women scientists serve as role models who have had to overcome barriers in order to unfold they valuable aspirations and professional careers. In the end, looking to initial teacher training through gender lenses may have a multiplier effect in order to carry out school practices that are inclusive and coeducational. If teachers lack gender equality training, it will not be possible to transform a merely mixed school into an authentic coeducational school. This contribution will develop a specific activity of the program: Recycled women scientists, which was carried out with students of the Degree in Early Childhood Education at the University of Córdoba and, particularly, with those enrolled in the course Intervention Strategies in Early Childhood Education, which is taught in the 4th year of the Degree. University students, mostly women, implemented two pedagogical strategies -resource recycling and role-playing- in order to: (1) Deepening into the life and contributions of women scientists; (2) Applying a gender-sensitive approach to the study of these biographies, in order to reveal situations of direct and indirect discrimination; (3) Dressing up as they were the studied women scientists, using recycled materials, in order to recreate their lives and experiences; (4) Producing a one minute video to explain women scientists life and contributions taking into account young childrens preferred ways of learning and communicating; and (5) Offering suggestions to achieve a gender inclusive science by motivating young girls participation in scientific experiences.

Pre-service teachers gender stereotypes towards students competences and their relation with ambivalent sexism

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↳ **Keywords:** Gender stereotypes, pre-service teachers, ambivalent sexism

Introduction: Recent research suggest that teachers of primary and secondary education present gender stereotypes towards the academic competences of boys in STEM

(scientific-technical subjects) and of girls in non-STEM fields. Likewise, female teachers tend to show more egalitarian responses to these stereotypes than male teachers, and teachers of primary education tend to have fewer gender stereotypes towards boys and girls competences than teachers of secondary education. In addition, the levels of ambivalent sexism of pre-service teachers correlate with this gender stereotypes. **Objectives:** Gender stereotypes towards the competences of boys in Mathematics, Science and Technology (STEM subjects), and of girls in Biology, Arts and Language (non-STEM subjects) are analysed from pre-service teachers of primary and secondary education, controlling the effect of ambivalent sexism. Likewise, the impact that gender and the itinerary training of future teachers (Primary or Secondary) has on these stereotypes is examined. **Method:** The scale of gender stereotypes towards the competences of the students used in the study by Sáinz, et al., (2014), and the Spanish version of the Inventory of Ambivalent Sexism by Expósito, Moya and Glick, (1998) have been used. The sample is made of 310 students: 184 enrolled in Primary Education Degree and 126 in the Masters Degree in Secondary Education Teacher Training (M age = 23 years old, S.D. = 6.12) from various universities in Spain. **Results:** The analysis of covariance shows that the pre-service teachers with more benevolent sexism hold more gender stereotypes towards the competences of girls in non-STEM subjects and of boys in STEM. Conclusions: The results show the influence of benevolent sexism on gender stereotypes towards the academic competences of boys and girls from pre-service teachers.

Professorship on probation? Perspectives of female and male junior professors on their interim evaluation

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topics: GENDER AND INTERSECTIONALITY

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Junior professors, interim evaluation, status insecurity, disciplining

In my paper I will present selected findings from my dissertation project: "The professional habitus of junior professors". The study focuses on the perspectives of "junior professors" (comparable with assistant professors in the US) and their everyday practices in the context of their special position in the German higher education system. The "junior professorship"

(max. of six years) is a relatively new academic position in Germany established in 2002. The path has been introduced as an alternative qualification path to a habilitation on the way to full professorship. The paper will focus on the following questions: How do junior professors assess the interim evaluation with regard to its selective effect? What are their experiences in the context of their special position? 15 junior professors from universities in North Rhine-Westphalia were interviewed using a photo survey combining visual and auditory data. Theoretically, the work is based on Bourdieu's habitus-field concept (Bourdieu 1993). Interim evaluation procedures after around 36 months form a particularly positional feature of the junior professorship. The outcome of these evaluations influences the future of the position holder. Junior professorships are often held by women. However, current study results indicate a process of social closure concerning the social background of the holders (Möller 2015). In terms of higher education policy, this evaluation instrument is criticized for being non-transparent and the procedure is also inconsistently regulated throughout Germany. Evaluation commissions have a lot of room for interpretation of the holders qualification and therefore power. On some results: The interim evaluation is perceived by some male junior professors as a "pseudo-event" that has no selective effect, but is merely intended to test their ability to work under pressure. In their view, however, they had already proven their willingness to take risks and their ability to work through the academic qualification path. From their perspective it undermines both networking and cooperation at equal footing. Female junior professors, especially first-generation academics, on the other hand attribute a disciplinary effect to the interim evaluation. They experience the lack of transparency with regard to the evaluation criteria as particularly burdensome and criticize the narrow time horizons in which they have to prove their qualification as university teachers and researchers. This is particularly challenging for people without an academic family background, as this group of people also has to habitualize internal university structures, implicit norms and customs at the same time. The tight time constraints and the opaque weighting of the evaluation criteria in the context of the interim evaluation also lead to supposedly voluntary self-exploitation. Female junior professors in particular speak of stressful experiences here, since family-related reductions in working hours are not taken into account when reviewing the goals achieved. Finally, the presentation will reflect on how the interim evaluation can be further developed in an intersectional way, taking into account gender specific findings, and how it has the potential to strengthen the social permeability of junior professorships.

Mitigating gender bias in oral exams – practical ways forward

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Oral exam, bias, checklist, rubric

The gender imbalance prevalent in academic recruiting also affects higher education teaching negatively. While the leaky pipeline notoriously perpetuates the prevalence of male academics, specifically in the classroom, male teachers are more likely to receive positive evaluations than female teachers, and male students are shown to be given more attention and opportunity to contribute than female students. With a disproportionate number of male scientists and teachers in certain academic fields, and classroom cultures that may grant female students less opportunity to thrive than male students, academic institutions are in danger of perpetuating notions that certain fields of teaching and research are in fact gendered. Particularly for STEM fields, this tendency may exclude potential female inputs that would benefit the entire field while producing fewer female graduates to meet the future demand for STEM expertise (1, 2). Therefore, Higher Education Institutions (HEIs) need to address bias systemically throughout their professional, academic, pedagogic and assessment structures and practices (3). Anonymous marking is an example of institutional bias checking in practice, which may mitigate the effects of assessor biases. In addition, some HEIs provide pedagogic guidance for teachers such the online resource http://unlimited.sdu.dk/, which offers insights and resources on bias aware teaching and learning. However, more can be done to check bias especially with non-anonymised examination methods such as oral exams, which provide no protection against among others, gender bias, expectation bias, halo effect and stereotype threat. As oral exams and assessed student presentations are commonly used examination modes in some countries, there is a need and an opportunity to develop and trial resources which support transparent, criteria-aligned and fair oral exams. In this oral presentation we share the rationale for, and the evaluation of a checklist and assessment resources designed to support teachers in the mitigation of bias during oral exams. The checklist and assessment resources were piloted in the context of an inter-disciplinary engineering course at a Danish HEI, with 65% male and 35% female students, during the autumn semester, 2019. The purpose of this pilot study is not to identify teacher bias but to

evaluate the effectiveness of the checklist and assessment resources in supporting transparent, criteria-aligned and fair oral exams and to identify what further measures could be taken. The checklist identifies recommended in-course, in-exam and post exam practices and the assessment resources include an oral exam question rubric co-developed with the students. Data from observations of the oral exams, an interview with the course teacher and a student focus group were analysed and the findings informed the second iteration of the checklist and assessment resources. To date the checklist and associated guidance on bias aware oral exams has been disseminated via the HEIs Centre for Teaching and Learnings newsletter and published in DUT, the Danish University Pedagogy Networks journal. The presentation will conclude with time for delegates to review the checklist and to share feedback on how it may be developed further and its wider applicability in HEI contexts.

In front of the Covid-19 the Conciliation: Double Standards!

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Scientific research, pandemic, equality, gaps, conciliation

While women are leading in various research sectors, including public health, where they have been at the forefront against COVID-19, they have suffered from various gender inequalities, which prevented them from being leaders in other fields. Indeed, several authors have raised the alarm about the worrying statistics about the timid participation of women in scientific research during the pandemic. Pinho-Gomes et al. (2020) comment in this sense that despite the progress achieved in the last decade in the academic field and in the scientific research environment, the latest statistics indicate that women have had a lower contribution to authorship during the period of Coronavirus. On the other hand, Viglione (2020) points out that this drop in participation was visible in all disciplines, and that, although it has been modest, the difference was visible compared to the usual research schedule, which may have greater repercussions for their careers in the future. This contrast is due to several factors, including: the digital gender gap, the gender pay gap, the gender labor gap, the mental burden, and the lack of co-responsibility due to the closure of schools, daycare centers and senior centers. which makes it difficult to reconcile professional

and personal responsibilities (King & Frederickson, 2020). The objective of our analysis is to answer the following questions: Why have women published less than men in scientific journals? What impact does this delay have on their professional careers? Will the pandemic erase all the advances that women have made in science in recent years? And what measures should be taken to fulfil this lack of participation in academic production? Therefore, a bibliographic review and an analysis of the latest world statistics on the subject is proposed.

Person Perception on gender-related inequalities in the Italian and Japanese Aerospace Higher Education systems

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender gap; women in STEM; academia; aerospace; Japan; Italy; perception

The United Nations is calling for people to be aware of the current worldwide Gender Gap and to contribute to its reduction. For this purpose, education is fundamental to allow people of any gender to globally contribute to social, economic and political life. A learning environment free from gender stereotypes could highly contribute to open up new opportunities for the next generations, thus encouraging them to embrace gender equity as a fundamental societal value. Nowadays, less than a third of female students choose higher education courses in STEM subjects, restrained by gender stereotypes and expectations regarding womens roles in society. Moreover, women generally perform well and obtain higher graduation scores than men in STEM faculties, but less than 30% of the worlds researchers are women, and theyre generally paid less than male colleagues. Such phenomena are particularly observed in fields historically characterised by a lower female representation and a lower number of women in senior positions. Among them, the aerospace domain can be taken as a valid example of the persistence of gender-related inequalities and barriers, with the number of women stacked around 20% for the last 30 years. Therefore, this field can be considered as a representative study case for investigating gender-based disparities, especially in the Higher Education

system. In detail, the focal point of this paper is individuals perception on gender inequality. Through a questionnaire, we outline the main relationships between respondents beliefs that their gender constitutes an obstacle, and the degree of gender inequality they perceive within the aerospace field, comparing the situation in Italy and Japan. Indeed, the way people perceive such a phenomenon may be significantly affected by cultural factors: how a person sees the world based on cultural background may lead to biases and conflicts. Focussing on a single cultural background and perspective may be not enough to obtain an in-depth overview of the situation. To widen the research area, two very distant societies, yet presenting similar traits concerning gender inequalities and gender gap conditions, are considered and compared: the Italian and Japanese ones. Italy and Japan have respectively the first and the third-largest Gender Gap among all advanced economies. Furthermore, Japan and Italy are the two G7 nations with the lowest 2020 Global Gender Gap Index. Hence, the access to a rich network of communities and university organizations operative in the aerospace sectors in both countries allowed data collection from students and researchers in 2020-2021. In the study, both the conceptual framework and approach are detailed, and the results are discussed and contextualized by taking into account different cultural factors and participants characteristics (gender, nationality, role, etc.). Finally, the presented findings are used to propose some remarks to improve students/academic professionals' perception of gender-based issues in the higher education systems of the Italian and Japanese aerospace faculties.

Women as leaders for change - methods for change based on knowledge, analysis and reflection

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↳ **Keywords:** Women as change leaders, organizational change, gender equality methods

Gender equality work is developed through an immense amount of projects, initiatives and learning processes over time. It results in change and resistance in differing dimensions. Many organizations have adopted women only programs as a gender

equality strategy. However, women only programs have been criticized for maintaining gender inequalities rather than promoting change. The main point of the critique is that women only programs often have a fix the women-approach (Ely & Meyerson, 2000) focusing on adapting women to an existing inequitable culture rather than challenging and changing this culture. Nevertheless, in later years, scholars such as de Vries (2010), Holgersson et al. (2014) and Benschop et al. (2015) have suggested that women only programs can have potential for change if they are indeed designed to challenge and change established organizational cultures. The paper draws on this scholarship and on empirical data from gender equality work in an technical university that has had several women only programs over a period of 15 years. These women only programs have been based on methods and ways of thinking around change, referencing concepts of e.g. women as power resources (Holgersson et al., 2014), memory work (Haug, 2000; Jansson et al., 2008; Wahl et al., 2009) and interactive and reflective processes (Holgersson & Wahl, 2018). We argue that women only programs to some extent can increase gender equality if the program is designed in such a way that women are empowered to become change agents through knowledge, analysis and reflection. The paper focuses empirically on one of the programs that is specifically addressing the importance of women as not only agents for change, but as leaders of organizational change. Women in leading positions, from both faculty and administration in the university of technology, that were decicated to gender equality applied to the program. Out of 50 applications 18 women were chosen. The program was based on gender studies and specifically gender studies about organizational change. The aim was to increase womens influence in the university in general. The program consisted of 12 days training in the period of one year. Follow-up interviews with the participants were conducted 1,5 years after the program. The interviews included reflections around what the program had contributed to most individually during the program, and in what way the women considered themselves as acting as leaders of organizational change after the program.

Balance4Better: We Are HERe more than a gender campaign

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↳ **Keywords:** Attraction campaign, gender gap, STEM education, social communication

Context: Achieve gender equality and empower all women and girls is part of the ultimate global challenge (Goal 5 of SDGs). The gender balance in STEM education is a challenge that has both horizontal and vertical dimensions [1]. Politecnico di Torino, an Italian technical university with Engineering and Architectural courses, has a long history of attraction campaign aiming to reduce the gender gap in its engineering enrolment [2]. Despite these efforts, more remains to be done for the student population and high-level academic positions. During the academic year 2019/20, considering the engineering first-year enrolled students (around 4500), 26% were female. In its Strategic Plan "Polito4impact", the University has included a set of specific objectives to raise the average percentage of female students enrolled in the first year of engineering programs to over 35% and achieve full gender equality in some degree programs by 2024. **Purpose:** To boost the girls' attraction, a new vision is established. Instead of organising an unstructured series of events dedicated to young females, the idea is to have them as main actors. That is, to create a female network of engineers that supports girls in career decision through the use of media and new technologies. This shift will allow the creation of "real" and "young" role-models and ensure peer-to-peer interaction. **Approach:** In 2019, students' Hackathon "SheHacks PoliTo" design a new strategy that includes its visual aspects and contents. "We are HERe" was the winner project and, as the name highlights, "to be here" is the starting point of a more balance STEM environment. The key element that characterises this new attraction approach is to focus on experiences rather than formal events. The experiences are of many different types: (i) peer to peer mentoring among female students, both one-to-one that one-to-many; (ii) summer schools; (iii) round tables; (iv) personality tests; (v) study support; (vi) career advisory. All these activities work manly on the attitude toward STEM career rather than on the cognitive side. The communication is fresh and immediate through the social "Instagram" with the female students' stories without filters. Under a constructivist

quarry, this new methodology's impact is evaluated through a qualitative approach that includes formal structured surveys and observations of the students' interactions. **Results and conclusion:** Females who participate in We Are HERe activities train various skills such as creativity, scientific storytelling, curiosity, respect, and collaboration. Moreover, they share their doubts and thoughts about choosing Engineering studies with female students who overcame them. This personal growth translates into greater self-esteem, and, in the end, girls feel more valued. This positive experience has been shared with South American Universities within the "W-STEM: Engaging women into STEM, building the future of Latin America", a Capacity Building EU-project. The use of fluid and fresh communication to reach a wider audience and female students' direct engagement as "role model" is an innovative and creative way to attract STEM students that can be easily implemented in other institutions worldwide.

Strategies to dynamize virtual classrooms using female role models in Science and Technology.

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Virtual classroom, avatar, gamification, STEM, gender

Despite the efforts to improve gender equality in society, gender segregation across industries and sectors in the labour market, as well as in educational programmes (degrees, subjects), is still a reality. The science, technology, engineering, and mathematical (STEM) fields, in which girls and women remain underrepresented worldwide, is a clear example of this. Among the many barriers that may contribute to this gender gap, it is worth noting that culturally prescribed gender roles still have a profound influence in the vocational aspirations of girls, with certain careers being perceived as less appropriate for their gender. The systematic lack of female role models in STEM has been related to girls lower stated interest in these disciplines. In fact, research shows that the presentation of female role models and alternative gender narratives in education, can have a significant positive effect in girls expectations of success and aspirations regarding STEM disciplines1. Therefore, the

inclusion of a gender dimension in education seems paramount to counteract stereotypes and foster equal opportunities2. We have implemented an educational innovation project which introduces a gender perspective into the contents and dinamization strategies of virtual classrooms in different e-learning degrees related to Science Education (3 subjects in Elementary and High School Teacher Trainning) and Research in Digital Media (1 subject in Journalism, Publicity and Marketing). Our goal is to give visibility to women in STEM and encourage reflection on gender stereotypes. Virtual learning environments demand creative and engaging contents, which we have re-designed introducing a gender perspective. First, we have updated the contents of the subjects under study, incorporating the discoveries and contributions of brilliant women in STEM which have traditionally been written out of history. We have created avatars of this female celebrities, which appear regularly in the virtual classroom, either starring in audiovisual resources where they take the role of teachers - explaining concepts in their area of expertise -, or acting as presenters of activities. Second, we have created a transformational learning experience through gamified scenarios, learning activities and participation in forums and book and film clubs, with a common background theme linked to reflection on gender questions. We will evaluate the students knowdledge about this female celebrities before and after the course and their perception of the interest of this gender-based contents, by quantitatively analizing the answers of participants to initial and final surveys. Participation and engagement will be assesed with metrics available within the virtual learning platform, as well as through qualitative methods (observation of behaviour, analysis of speech) and will be compared to control virtual classrooms where this gender-driven dinamization has not been used. Preliminary results indicate an improvement in the students knowledge about the female contributions to the fields of STEM and students interest and curiosity towards this gender-conscious approach. We also foresee further impact beyond the project scope, given the huge influence that these future professionals future teachers, journalists and media professionals, broadly speaking can have in the perceptions and ideas about the role of girls and women in society.

Neither Sheldon, nor Koothrappali, nor Wolowitz: How to change stereotypes in Physics and Engineering with videoconferencing

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↳ **Keywords:** STEM vocations, role models, videoconferencing

Physics and engineering are among the STEM fields with the lowest representation of women and are still perceived by society as "male professions". If we ask children or young people to imagine a physicist or an engineer, most descriptions will be a mixture of a man in a white coat with one of the male characters from the TV series The Big Bang Theory. To get more students, especially more girls, interested in these studies and to encourage scientific and technological vocations we have to dismantle the stereotype of the physicist or engineer as a male, weird, freaky, extremely intelligent and with few social skills, and create new professional references with whom they can feel identified. In 2017, after celebrating the International Day of Women and Girls in Science with face-to-face activities for the local public, a group of colleagues from the Instituto de Astrofísica de Canarias (IAC, Spain) began to meet with the aim of co-creating initiatives that would contribute to foster interest in STEM among students, especially girls, and change gender stereotypes in these areas. This is how Talk to Them: Women in Astronomy came about, a project in which women astronomers, physicists and engineers hold videoconferences with schools in which we explain our work and answer students' questions about scientific and technological careers, the Universe and the methods and tools we use to study it. We chose the videoconference format in order to offer a close and contemporary view of the women working in STEM, while reaching as many schools as possible, quickly and sustainably, especially in regions that are far from our headquarters. The project began its activity with schools in 2019 and is now in its third edition. It has a coordinator and a growing group of speakers (26 this year) from the IAC and collaborating institutions, covering practically all areas of astrophysics and other fields such as technological applications to medicine and space weather. The coordinator is in charge of managing communications, maintaining and updating of the project's website and resources, project dissemination and evaluation. The collaborators coordinate with the teachers and carry out the videoconferences. During these three years we have interacted with more than 3000 students, from Kindergarten to University, reaching practically all regions of Spain and also several Latin American countries (data as of March 15, 2021). In this

communication we will present the results, impact and lessons learned from the project during these three editions, how we adapted it to continue carrying it out during the lockdown declared to combat the COVID-19 pandemic, and the analysis of the surveys conducted with students, teachers and collaborating speakers.

"The Gender of Science" project. Enhancing awareness on gender issues in secondary school students for a conscious choice of their professional future

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↳ **Keywords:** Gender issues, secondary school, project-based learning, STEM, gender awareness

Although a number of studies, during the last three decades, have gathered solid evidence that men and women possess similar abilities and aptitudes (Benbow et al., 2000), several educational and professional fields are highly male-dominated, with a greater presence of women in areas with lower employment, career, and income prospects. In fact, despite the apparent rise recorded in recent years in the number of women involved in Science, Technology, Engineering, and Math (STEM), men continue to outnumber women significantly. According to the UNESCO report (2017), only 35% of STEM students at university are women and, in some fields, such as physics, engineering, and computer science the difference in enrollment between the two groups is even larger. Moreover, the number of women in STEM further declines when shifting to the professional world. Actually, men account for about 70% of worlds researchers, and this percentage further increases at higher decision-making levels. In almost all Humanities, the picture is the opposite. In order to make both male and female students aware of gender-related issues and able to recognize the role that gender plays in their educational and professional choices, appropriate actions should be designed and implemented at earlier stages of the educational path. This communication presents the The Gender of Science project developed by the Neapolitan Association Women in Science within the Italian government plan to promote high-quality education. The project aims to enhance secondary school students awareness on gender issues to prepare them for a more

conscious choice when enrolling in a bachelor degree in the Higher Education context. Specifically, it intends to create a space in which secondary school students can reflect, debate, and research on gender issues and roles. It is a project-based learning experience for classrooms of students aged 15-17. Relying upon a student-centered approach and the benefits of cooperative and collaborative learning (Pujolàs, 2009), male and female students have to work together in small groups to collect data and elaborate a gender report of their school. Such a report, presented at the end of the project to the whole school, includes statistics on school staff, students surveys and interviews. The Gender of Science project is structured in six 3-hours-long sessions, and students are required to conduct autonomous work between each session for a total amount of 30 hours. Apart from providing basic theoretical concepts on gender, tutors help the students in the development of their reports, guiding them in preparing a survey and analyzing the data collected. The first session has a fundamental role. Indeed, a board game was created for the specific purpose of making students reflect through the use of language on their stereotypes and prejudices on gender and roles in contemporary society. Gamification is a powerful tool in education as it allows for engagement in the learning process and the development of a positive environment. The project was implemented in four classrooms of secondary schools in Naples, Italy, between 2019 and 2021. The communication will discuss the advantages and disadvantages of such an experience.

A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to Measure It, How to Reduce It?

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender

Our aim is to present the achievements of a three-year project (2017-2019) [1,2] funded by the International Science Council, including eleven partners working together, precisely eight international unions in all disciplines of Mathematical, Computing, and Natural Sciences, UNESCO, and two non-governmental organizations in gender. This is the first study of this amplitude ever done. We shall also present its future and new developments in 2020 and 2021

[3]. Three different methodologies have been used: a global survey of women and men scientists with more than 32,000 responses; an investigation of gender patterns in millions of scientific publications; and the setting-up of a best-practice database of initiatives that address the gender gap in STEM at various levels. As a whole, we observed that the gender gap is very real in mathematics and science. Womens experiences are consistently less positive, regardless of discipline, geographical zone, and level of development. Furthermore, women remain underrepresented as authors in the most renowned journals. On a positive note, the gender productivity gap has been closing since 1970. We have provided a set of recommendations for different audiences: instructors and parents; scientific and educational organizations of all kinds; scientific unions and other worldwide organizations which are members of the project. We shall also describe the role of the international newly established Standing Committee for Gender Equality in Science (SCGES), and the actions which have been token up, noticeably at the European level, in 2021, to implement the recommendations, in particular in organizations such as scientific departments, research institutions, and universities. The partners are the following: the International Mathematical Union; the International Union of Pure and Applied Chemistry; the International Union of Pure and Applied Physics, the International Astronomical Union; the International Union of Biological Sciences; the International Council for Industrial and Applied Mathematics; the International Union of History and Philosophy of Science and Technology; the United Nations Educational, Scientific and Cultural Organization (via its project SAGA); GenderInSITE; the Organization of Women in Science for the Developing World; and the Association for Computing Machinery. Several other international organizations in STEM or in SSH fields have joined or are in the process of joining SCGES.

Guide for higher education teaching with gender mainstreaming in industrial engineering

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender mainstreaming; higher education; STEM; industrial engineering

This work explores how gender mainstreaming can be included in the teaching and research of industrial engineering, a framed discipline in the acronym STEM (Science, Technology, Engineering and Mathematics), an area of knowledge famous for having (especially in the West Countries) a low proportion of female students. In 2018, the Catalan University Quality Assurance Agency (AQU Catalunya) enacted a regulation to incorporate the gender dimension in all higher education programs at Catalan universities from the 2020-2021 academic year onwards, which constituted a pioneering measure in Europe. Moreover, in 2018, [University] began its participation as a partner in the H2020 project Gender Equality in Engineering through Communication and Commitment (GEECCO, 2017-2021). The GEECCO project has three main pillars: (1) decision making, (2) academic career, and (3) gender dimension in teaching and research. It is within this third pillar where gender in curricula is addressed yielding to the guide (Reference) presented in this work. The guide (Reference) is structured in the following parts. Firstly, a contextualization on the impact that the low proportion of women students of engineering has on the generation of industrial technology is presented. In addition, it also reflects on the masculinization of the professional and academic culture of this discipline. Secondly, the planning of the incorporation of the gender mainstreaming in the teaching of technical disciplines is addressed. A proposal for the revision of the industrial engineering teaching plan through the incorporation of transversal competencies is presented, as well as the modification of the teaching contents and assessment. Regarding the latter, the authors propose different types of intervention on the contents and assessment by dividing the subjects into (1) scientific foundations, (2) technologies, and (3) professional subjects. This part is complemented by a block of recommendations for teaching in which the authors offer advice on the use of gender-sensitive language, the use of egalitarian visual resources and on the theme of the contents to make them more inclusive. Thirdly, a series of recommendations for the adoption of a gender mainstreaming in research is presented, emphasizing the types of projects that are developed within the framework of the Bachelor, Master and Doctoral Theses. There is little research and manuals that address gender-specific issues in STEM and how they could be addressed. Therefore, this work paves the way for further insight into the specific gender bias in industrial engineering and is an essential tool for people involved in teaching and research in this engineering field from a critical spirit. This guide contributes to several Sustainable Development Goals (SDG), mostly to SDG5, which is about gender equality. Providing women with equal access to education, technology and decent work will nurture sustainable economies and benefit societies and humanity at large. Even though SDG5 is a stand-alone goal, other SDGs can only be achieved if the needs of women receive the same attention as the needs of men. For example, access to decent work and regular income for women directly contributes not only to poverty reduction (SDG1) but also support better education (SDG4).

A feminist and inclusive approach to online teaching and learning in higher education

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Feminist pedagogy, intersectionality, online teaching and learning, digital technologies; higher education

This contribution argues and makes a proposal on how feminist pedagogies, aligned with other critical pedagogy approaches reinterpreted from a sociocultural learning approach, can contribute to renewing online teaching and learning methodologies in higher education and on the role of educational technologies from an intersectional and inclusive perspective in our increasingly digitally-mediated societies. Unlike other proposals on how to integrate the gender perspective from specific disciplinary areas, this approach takes pedagogical practice as a whole, regardless of the field of knowledge in which education is framed. That is, it wants to pay attention to all the elements involved in the teaching and learning process, both from the perspective of design and practice and its evaluation. The purpose is therefore to introduce critical reflection and discussion and also to provide guidelines, not so much about what is taught and learned, but especially about why and how it is done. The focus is placed on a subset of pedagogical practices, those mediated by the use of digital technologies. This involves considering the educational use of ICT as an element that crosses and reconfigures all the dimensions of analysis of the pedagogical activity as well as the role that the gender perspective can represent in each of them. In this way, taking into account the current multiple technology-based teaching and learning modalities (virtual, hybrid and blended, flipped, open and social, MOOC, etc.), this paper also discusses how each of them can reproduce or help to subvert some of the barriers of more conventional face-to-face learning environments. As a proposal to foster equity within technology-based learning environments, the paper argues the need to give continuity to the authors who have reinterpreted feminist pedagogy in the framework of virtual learning environments whithin the current digital society (FemTechNet 2013, Kirkup et al. 2010). The concepts of digital and educational inclusion are addressed as a framework to confront intersectional inequalities in the contexts of online teaching and learning. To this end, the paper presents the theoretical foundations of the proposal, based on a sociocultural

learning approach, and provides a set of principles for feminist pedagogical practice (Crabtree, Sapp & Licona, 2009) organized in a series of methodological and cross-disciplinary dimensions to introduce an intersectional perspective into the design and implementation of online teaching and learning in higher education. The goal is to contribute with a more nuanced analysis of the uses and impact of ICT in higher education and to invite both learning designers and teachers to reflect on the effects of adopting or not certain learning methodologies in terms of equity and social justice.

Giving female role models to girls to improve gender diversity in sciences

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↳ **Keywords:** Fostering

In France, like in most of European countries, the lack of girls in scientific sectors is really worrying. To deal with this problem, each year in Lyon since 2017 on the International Women's Day the French association Femmes & Sciences has been organising the event "Sciences, un métier de femmes!" (Science, a woman job!) exclusively dedicated to high school's girls from Lyon area. Our goal is to encourage young girls to choose scientific and technological disciplines to pursue their education when in higher education. The high school girls attend a lecture on gender stereotypes by a specialist in gender issues in science, to help them overcome the obstacles from received ideas ; then they meet scientific women working in a wide range of fields during several speed dating sessions. We want to give girls female role models to convince them that science is a field for women too and to encourage them to have ambition for their future career. We'll present these events, organized by Femmes & Sciences thanks to a strong support of LabEx ASLAN and ENS-Lyon, their organisation and the success of the preceeding editions which demonstrate the relevance of such targeted actions. Well also present the results of the questionnaires filled every year by the participating high school girls, to estimate the impact of this event on girls about to choose their academic career. Indeed, the 6th edition is already foreseen on March, 8th 2022. Femmes & Sciences (Women & Science) is a French non-profit association whose aims are: i) to promote women scientists; ii) to encourage young people, especially girls, to pursue on scientific careers; iii) to set up a peer support network. These events are central to

actions aimed at convincing girls that science is accessible to them in Femmes & Sciences principal fields of action.

Gender differences between university students in times of pandemic

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender, COVID-19, Higher Education

The objective of this exploratory research was to identify gender differences between university students on how they perceive their academic studies during the 2020-2021 academic year in the framework of the Covid-19 context. The sample of this research was made up of 40 young university students, between 17 and 30 years old, residents in Spain and belonging to the following institutions: University of Salamanca, Pontifical University of Salamanca and Comillas Pontifical University. A questionnaire was developed to collect information, marking age, gender, university and educational modality as independent variables. Using a Likert scale from 0 to 4, the young university students answered a series of questions to measure their level of technological equipment, internet connection, social isolation, schedule stability, financial concerns, stress, anxiety, and university dropout during this academic year (2020-2021). Based on the above, the association of the variables was analysed through contingency tables and Pearson's chi-square tests. In this sense, the following results were found: In the first place, it was found that female university students, compared to their male peers, perceive that they are more socially isolated, have greater difficulties in maintaining a regular academic schedule, feel more stressful, feel more anxious and are more likely to dropout their academic studies. In second term, it was found that male university students, compared to their female counterparts, perceive that they have less technological equipment, have poorer internet quality and feel greater financial concerns. Thirdly, it is appreciated that young university students who receive 100% virtual education, compared to those who maintain a face-to-face format, are the ones who are suffering the most from this context of pandemic, especially due to social isolation and high levels of interest in leaving the university career. Finally, it is important to mention the two major contributions of this exploratory research. The first is the creation of a profile of young

university students by gender in times of pandemic. Second, provide inputs to the universities themselves and political authorities on what aspects must be influenced to take care of young university students during this and the next academic years.

Navigating UnChartered Waters: Anchoring Athena SWAN into Irish HEIs

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↳ **Keywords:** Athena SWAN, Gender Action Plans, Irish HEIs

The Athena SWAN (AS) Charter is a flagship accreditation scheme that recognises the need for action to address gender equality within higher education institutions (HEIs). Hitherto restricted to UK institutions, the year 2015 marked the entry of Athena SWAN to Irish HEIs. This paper charts the journey to Athena SWAN into Ireland, dating back to 2012, through a series of critical events, supported by EU sponsored structural change projects in 3 Irish universities. It involved negotiations with the Equality Challenge Unit (now Advance HE) by a national group of Athena SWAN advocates from Irish HEIs, along with key stakeholders. The paper provides a case study of the engagement by Trinity College Dublin, in alliance with other Irish HEIs and stakeholders, in bringing Athena SWAN into Ireland, from inception to adoption. It demonstrates the importance of the three concurrent EU FP7 Projects: INTEGER (TCD), FESTA (UL) and GENOVATE (UCC) that paved the way for Athena SWAN take-up in Irish HEIs.

The UK Athena SWAN (AS) Charter was extended to Irish Higher Education Institutions (HEIs) in 2015 to provide a catalyst for change towards gender equality and to transform institutional cultures, through AS Gender Action Plans. This paper charts: the journey of Athena SWAN to Ireland; its rate of adoption by Irish HEIs; and its impact on the sector. Drawing upon the perspective and contribution of Trinity College Dublin, as an institutional case study accelerator, the paper examines some prevailing critiques of the Athena SWAN Charter and demonstrates how some of these shortfalls have been overcome in the Irish HEI sector, most notably through linking Athena SWAN awards to sectoral and research funding. Taking into account criticisms of Athena SWAN, most notably in the UK, there are many benefits attached to the award: it is administered independently and impartially; applications are vetted by a stringent peer review process; supports are available to

unsuccessful (as well as successful) applicants; and there is a degree of consensus among critics that achievement of an AS award is not an easy or pre-destined outcome. The recent announcement by Jean-Eric Paquet, Director-General, DG Research and Innovation, that all public institutions will be required to design and implement a Gender Equality Plan, in order to be eligible for Horizon Europe funding, sends a firm signal that gender equality remains a serious concern and requires tougher measures to implement throughout EU HEIs. Athena SWAN has provided Irish HEIs with a platform to allow them to benchmark against institutions in Ireland and UK, access examples of better practice and to form alliances for mutual support.

Gender Equality Units in the university field: Actions and challenges in La Covid-19

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IMPLICATIONS OF THE COVID-19 FOR THE DIFFERENT DIMENSIONS OF GENDER EQUALITY POLICIES IN R&I

↳ **Keywords:** Gender Equality Units, telework, conciliation, COVID-19; policies

The aim of this paper is to analyze the role that the Gender Equality Units of Spanish universities have played during the COVID-19 crisis. One year after the beginning of the pandemic, societies are facing great changes and challenges in the so-called "new normality". Different studies published by leading international institutions and organizations such as EIGE (European Institute for Gender Equality) and The National Academic of Sciences, Engineering and Medicine (2021)[i]; or the different recommendations made by UN Women (2020)[ii], have been warning about the impact that Covid has had on women's professional careers, while highlighting the relevance of the role of women during this period. The academic environment is one of the sectors where the impact of Covid has been most noticeable, both because of the change in new ways and formats of work (teleworking), and because of the impact that confinement and conciliation may have had on women in the academic environment. The RUIGEO (Network of Gender Equality Units for University Excellence) with the aim of preventing gender inequalities and

asymmetries, which the COVID-19 pandemic is causing, and better manage the risks arising from a context of uncertainty, developed a guide of good practices for universities: "Telework and co-responsible conciliation in times of COVID-19"[ii]. On its website, in the BP section, it lists the main actions carried out during the health crisis of COVID-19, grouping them into the following categories: Telework and conciliation, psychological assistance, psycho-pedagogical support, awareness campaigns, reports and social action. Based on an exhaustive and strategic analysis of the information available on the websites of the 52 Spanish universities, which are all members of RUIGEO, we will carry out a comparative study of their practices ranked in the five categories mentioned above. The goal of is to analyze whether these practices are really contributing to prevent and manage the risks and negative effects of the pandemic in and from the academic sector: In which areas have they been most active? What protocols have they developed? Which have had the greatest impact or acceptance? Do these practices help to improve teaching, research and management? After this first analysis of the situation, we will implement our study from a qualitative approach by conducting a series of interviews with the heads of equality units, in order to delve into the impact of the actions carried out by the universities. At the same time, we will investigate which are the tools to generate common policies and actions from the Equality Units to face the new obstacles that are emerging and which can revert in the advance of equality between women and men in Spanish universities.

Counteracting the Leaky Pipeline in STEM: The Human Brain Project Approach

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Science

The Human Brain Project (HBP, https://www.humanbrainproject.eu) is one of the FET (Future and Emerging Technology) Flagship projects. Started in 2013, it is one of the largest research projects in the world. More than 500 scientists and engineers at over 140 universities, teaching hospitals, and research centers across Europe have come together to address one of the most challenging research targets the human brain. In line with the European

Commission's gender agenda for Horizon 2020 the HBP, special attention is paid to gender equality. The HBP intends to serve as a good practice example specifically for large scale sciences projects and in general European funded projects characterized by similar challenges. Despite its complexity the HBP has played a pioneering role in advancing gender equality by improving the gender balance of scientists in leadership positions from 16% in Sept. 2017 to 35% in February 2021. With the beginning of the so called Special Grant Agreement 2 (SGA2) the HBP implemented a Vision called WE ARE HBP which stands for Work for and Engage in Activities and Research for Equality in the HBP. The Diversity and Equal Opportunities Committee (DEOC) is an advisory body to the Project Coordination Office (PCO) and Directorate (DIR) of the HBP. The DEOC is the body responsible for implementing the gender activities planned in the HBP Gender Action Plan (GAP) addressing four areas of intervention to (i) develop and support HBP Stakeholders to share a vision on diversity and equality, setting targets, supporting, and carrying out own activities, (ii) analyze structure and processes of the HBP to identify leverage points for change, (iii) contribute to Research and Lectures at HBP related workshops and publications, and (iv) support, individuals, teams, leaders, offering advice on diversity in teams as well as career building workshops. The strategic outline of the GAP and its measures were developed by the coordinating partner institution convelop; all references are available at https://www.humanbrainproject.eu/en/about/gender-equality/ In this presentation, the main gender structures and activities carried out in the HBP will be displayed as examples of how gender equality can be promoted and fostered successfully in one of the largest research projects in the world. The HBP thereby follows a cascade model (Wallon et.al 2019), which has been introduced first in Germany for universities, research and funding institutions. It has been successfully implemented in combination with a leadership letter of personal commitment and guidelines, contributions to conferences and workshops (Grasenick, 2019), a high-potential mentoring programme, etc. The main challenges to increase the number of women in higher-level positions and in education activities have thereby been addressed successfully, as the figures demonstrate.

Are gender inequalities shaping the impact of COVID-19 on academics work conditions and performance? Evidence from a Portuguese research-intensive public university

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↳ **Keywords:** COVID-19, gender, work conditions, time usage, productivity, intersectionality

The lockdown has caused substantial disruptions to academic activities. With the closure of universitys campuses, schools and day care facilities, teachers and researchers were required to work from home and manage their fieldwork research, transfer courses to online platforms, and continue academic productivity, while simultaneously caring for and home-schooling their children. Academic women, and especially those who are mothers, are likely to find themselves at the heart of these conflicting domestic and professional pressures, as long-standing evidence demonstrates that women perform significantly more domestic labour and care work than men, including in academic households. Using the lens of the intersectionality, this paper aims to explore the impacts of the COVID-19 lockdown on work conditions, time use and scientific productivity of women and men academics, and to reflect on the implications of the disparities outlined for gender structural change and gender policies and measures in universities. We draw on the results of a survey of 218 faculty from one of the major Portuguese public universities and one of the oldest in the world. Data were processed and analysed using the SPSS statistical software and a range of descriptive and inferential, univariate, bivariate and multivariate statistical analyses of the material were conducted. The survey findings offer some indication that gender inequalities are shaping COVID's impact on working conditions, work-life balance challenges and academic time usage and efficacy, making it particularly more difficult to academic women, particularly younger mothers in non-tenure-track positions to correspond to the ideal type of academic during the pandemic crisis. The study gives important insights on the extent to which the distinctive burdens imposed by the lockdown had impact academic productivity, placing women scientists with children up to 12 in disadvantage as compared to childless women and men with and without children, who increased their scientific output during the confinement. The inequalities that were observed not only in academic productivity but

also on the material and non-material working conditions to work remotely have important implications for gender institutional change policies and measures, and should be considered by academic institutions when making decisions regarding funding, hiring, tenure and promotion.

About the influence of the COVID-19 pandemic on Communities of Practice (CoPs) working towards gender equality in academia: Results of the ACT project evaluation

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↳ **Keywords:** COVID-19 pandemic, Communities of Practice (CoPs), gender equality, academia, structural change

Despite the ongoing efforts, there are common problems with the successful implementation of Gender Equality Plans (GEPs) in research organisations. These problems typically stem from a lack of practitioners necessary know how but also result from scattered efforts at inter- and intra-organisational levels. The Horizon 2020 project ACT aimed at overcoming these struggles in implementing GEPs by promoting institutional change through the advancement of communities of practice (CoPs). ACT created a range of services and resources to support targeted CoPs and enabled the development of eight new, demand-driven CoPs with a total of 147 members from 33 countries in March 2020. The focus was on enabling effective sharing of experiences and lessons learnt from gender equality actions to support structural change in RPOs and RFOs throughout Europe. In spring 2020, the CoPs were surprised by the COVID-19 pandemic. This article aims to present the effects of the pandemic on the CoPs, which could be identified in the project evaluation. The evaluation is based on semi-structured interviews with CoP members (n=21) and CoP facilitators (n=7) from May to July 2020, as well as monitoring and progress reports provided by the CoP facilitators. It became evident that the pandemic influenced the development and actions of the CoPs on three levels: First, the pandemic and related political measures affected the CoP member organisations and individuals. This was reflected in an increased individual workload and a change in the relevance of the issue of gender equality in some member organisations. Secondly, the CoPs had to re-plan their activities while transitioning

to working online. Thirdly, the pandemic led to changes in the CoP communication and community due to the effects on the first and second level. Despite the difficulties, positive effects were also observed, such as the development of solidarity with colleagues through sharing at a more emotional level. Overall, the results display the challenges and opportunities that the CoPs faced during the pandemic and can also provide insight into the reactions and coping strategies by the CoP facilitation.

Fostering Women to STEM MOOCs - The Fostwom Toolkit

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** STEM MOOCs, gender balance, gender balance toolkit, open toolkit, gender gap

Fostering Women to STEM MOOCs (FOSTWOM) is a project that mainly focuses on three of the seventeen goals for sustainable development (SDG) in the 2030 Agenda for Sustainable Development; Quality Education (SDG 4), Gender Equality (SDG 5) and Reducing Inequalities (SDG 10). According to 2030 Agenda the 17 SDGs are integrated and indivisible, meaning that all SDGs are also means to achieve other SDGs. A recurring and overarching goal for 2030 Agenda is Leaving no one behind. Based on this, a starting point for the project is that education on equal terms is an important prerequisite for preparing young people with the knowledge, skills, attitudes and behaviors required for a sustainable future. However, education is far from available on equal terms. Some are held back due to discrimination, bias, social norms and expectations. This also applies to STEM education where women's voices, expertise and creativity are largely lacking. The aim of the FOSTWOM project is therefore to present actions for better gender balance within STEM education, and to make STEM education more accessible to young women, using the inclusive potential of Massive Open Online Courses (MOOC). An assumption is that free and easy access to online courses in STEM can give female participants an increased opportunity to attend STEM courses, especially women from countries less egalitarian or less

economically developed (D'Ignazio & Klein, 2020). Another assumption is that the virtual environment that MOOCs offers can also have potential to provide a more inclusive and safe learning space for female students (Lee et al., 2017). Based on the results and analysis of data from previous research (FOSTWOM Report, 2020), the project has developed a gender balance Toolkit, i.e. a collection of recommendations and resources for content experts, instructional designers and visual designers, to use as guiding principles while preparing and designing storyboards for MOOCs and their visual components. Subsequently this list of recommendations will be applied in designing the three planned MOOCs of the project. The FOSTWOM Toolkit aims in this way to raise awareness around gender balance indicators, and to get everyone involved in creating MOOCs to reflect critically and design MOOCs in a more inclusive way, so that the MOOCs attract a more diverse range of people and, specifically regarding STEM MOOCs, attract more young women who want to learn. The aim is that this set of tools is to be used by any person or institution that wants to develop MOOCs with gender balance, or to check if offered MOOCs are gender balanced. The Toolkit is also expected to be useful to institutions wanting to create a policy regarding gender balance for their MOOCs and online teaching and learning productions. The FOSTWOM Toolkit checklist will be open to comments and suggestions from the public with the aim of collecting feedback to be analyzed before every new release during the project lifecycle. At the end of the project, the Toolkit will be released with a CC license so that anyone can adopt and adapt it to their own scenario.

Gender Inclusiveness in Data Science and AI on the African Continent

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Data Science, Artificial Intelligence, Africa

Data science and artificial intelligence (AI) are viewed as prominent drivers of technological change as global economies transition into the Fourth Industrial Revolution (4IR). In Africa, innovative technologies as a result of this transition can act as crucial markers of the trajectory of innovation across the African landscape. Shedding light on the persistent

gender gaps is a first step in creating initiatives that can close the gender gap and build new pathways to economic opportunities for women in the 4IR [1]. Emphasis should therefore be placed on inclusion of women in capacity development linked to new and emerging skills needed for the 4IR, to ensure their inclusiveness and leadership in a digitized economic and social landscape [2]. The UK-South Africa Newton Fund, Development in Africa with Radio Astronomy (DARA) Big Data programme, represents a human capacity development intervention looking to increase Africas research and skills base in data-driven science and associated technologies needed for dealing with extremely large data sets [3]. DARA Big Data programme has provided training and development opportunities in data science to science and engineering students from the Square Kilometre Array (SKA), an international undertaking to build the worlds largest radio telescope, Africa partnering countries since 2017. To promote the inclusion of women in developing data science and AI skills on the African continent, a case study was undertaken of DARA Big Data to determine the existing gender gap in its training and development initiatives and what factors potentially contribute to the gender gap in the DARA Big Data initiatives. During this presentation I will be presenting the Women in Data Science Report of the DARA Big Data case study [3]. The findings from the DARA Big Data case study highlight the need for targeted interventions that can be implemented at programme, institutional and policy level to ensure womens participation in capacity development. The case study serves as a steppingstone in the promotion of gender equality in building technological leaders of the future, with recommended actions based on experiences gained through implementation of the programme. Interventions discussed to increase womens representation have included the use of existing networks across Africa to advertise training opportunities, to provide female mentorship, to build a data science alumni network using past female participants, to organize specific female in data science events in Africa, targeted internships and scholarship opportunities for African women and implanting basic computer programming skills at the primary and secondary level. In addition, the recommendations can be easily applied more broadly to other areas in science, technology and innovation in promoting gender equality. Africas ability to harness scientific and technological knowledge is crucial for its socio-economic development and competitiveness when moving into a digitized age. However, the inclusion of all in society, especially women and girls, are needed for the continent to fully participate in this technological age and achieving its development goals.

Changing a University: Gender Initiative for Excellence (Genie) at Chalmers

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender equality, technical university, unconscious bias, strategic recruitment, culture change

Sweden tops gender equality rankings, but Swedish academia is still lacking women in top positions. To address gender inequality in its faculty, Chalmers University of Technology has invested 300 million Swedish kronor (30 million) over ten years in Genie, Gender initiative for Excellence. Genie aims to increase the universitys success and excellence via gender equality efforts. Compared to other gender equality initiatives, Genie stands out in that it is well-funded, long term, led by faculty, and spans the whole university. The overall goals of Genie are: (1) Increase the proportion of female faculty to at least 40% at each career level. (2) Remove the structural and cultural obstacles that hamper womens careers. (3) Create a working environment that is diverse, inclusive and supportive of excellence in research and teaching. Genie was launched in 2019 and the first two years have included building trust, organization and links to different stakeholders inside and outside the university. The current work is divided into three parts and includes both top down and bottom up activities. The first part is central actions, that include financial support for faculty hires, visiting researchers, internal projects, and education, as well as awareness efforts. The second part is about measuring and analyzing. Here, we investigate positions, departments, divisions, salaries, sick leave etc. with gendered glasses and we exploit employee survey questions. The third part involves support to the departments to get local, concrete efforts going. To catalyze action, each department has received Genie funding to use freely. The work within the departments is most important; to change the academic culture, the majority must be onboard, both formal and informal leaders. In future, we will focus on training of ambassadors, add more mentorship programs, and implement custom made action plans in the departments. Genie is a large-scale experiment in its early phase.

From Strategy to Implementation: Building the Capacity for Gender in Research and Higher Education.

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Research, STEM, capacity building, higher education, gender

The implementation of measures for gender equality in higher education has been proven to be a complex and challenging task. The aim of achieving gender equality implies an organisational change process. Like every change effort, strategies and measures lead to resistance and defensive attitudes. Thus, gender equality officers and task forces can be considered as change agents who must build a powerful coalition of multipliers with influence, to identify obstacles and success factors and to develop a communication and support strategy accordingly. Research and teaching as key functions of higher education organisations are effective points of leverage. Graz University of Technology (TU Graz) has defined a strategy that integrates gender and diversity measures in science and teaching alike. The Office for Gender Equality and Equal Opportunities is a driving force in the implementation of the strategy. It has thereby broadened the internal coalition by cooperating closely with the rectorate and service departments for research and in-house training. The service departments act as multipliers for gender equality. They offer workshops, coaching and advice tailored to meet the specific challenges and requirements of STEM researchers and lecturers.Based on strategy and the results of an evaluation a capacity building plan was derived and successfully implemented. It comprises amongst others a training course offering researchers and lecturers at TU Graz to become gender experts themselves. Complementary, a conjoint lecture of all faculties highlights how gender and diversity aspects are integrated in the different fields of research. Both initiatives have sparked significant interest. Scientists have developed new gender-based research topics and contributed. Additionally, guiding materials have been co-created and potentials for further development have been identified. The coalition for gender equality has broadened substantially. At the conference, we will present the process and the specific measures for capacity building. We will discuss obstacles and success factors for the

perspectives of scientists and researchers as well as service departments. We also put a focus on the broader strategic context, the interrelation of different organisational functions and the need for a holistic perspective.

Definitions of care among the student community of the University of Granada: discussion between traditional conceptions of care and feminist criticism

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↳ **Keywords:** Care, student, university, conciliation

Multiple feminist researchs have argued the sexual labor division that assigns women the domestic and care sphere and assigns men the public sphere and market productivity. Currently, this distribution of roles still significantly influences the daily life of women, who assume a relevant part of care work. This way, both public and private institutions, have developed conciliation policies that address this problem. However, conciliation mechanisms seem to be focused on making paid employment possible, displacing the value of care work and making human care needs and interdependence invisible to the society. In this communication we explore the role of the State, exemplified in the University of Granada, in the provision of care and political measures that favor its performance, as well as the concept of care that is promoted by the institution for the student group. As well as we explore the conceptions about care and conciliation of this group, and the strategies that they implement in their daily life. This work is the result of the investigation "Care linked to conciliation in the community of the University of Granada" (2021) carried out by the University Institute for Research on Women and Gender Studies of the University of Granada in which authors participated. A qualitative research, which aims to analyze the problems related to care practices and the possibilities of work-life balance faced by people who are part of the University of Granada and their effects on third parties. The results show that, on one hand, in part of the university community a notion of care continues to exist that prioritizes paid jobs in the public sphere; that links care needs with dependency situations; and that is sustained by a family tradition that relegates this work to the women of the family, especially mothers. However, on the other

hand, we also find approaches to care understanding them as an emotional accompaniment to situations of loneliness, valuing the importance of care work and the existence of human interdependence.

Chutes and ladders: Gendered systems of privilege and disadvantage in higher education science

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** STEM; physical science, gender system, contingent faculty

After decades of virtual exclusion from participation in STEM, women in Eurowestern contexts are studying and forging careers in these male-dominated fields in increasing numbers. While equal representation is positive step, women in STEM often do different work than men. STEM workplaces are vertically and horizontally segregated by gender, and women are frequently doing work for lower pay and prestige. The purpose of this research was to characterize a case of vertical segregation in higher education- teaching intensive, contingent faculty positions in physical science - and to explore how and why gender matters for these 'teaching faculty'. Using data collected from a two-year ethnography, I use the analytic lens of gender as a multi-tiered social structure (Risman, 2018) to argue the female teaching faculty are kept in lower-status positions associated with teaching through metaphorical glass obstacle courses (DeWelde & Laursen, 2011) that are maintained by higher-status men. These glass obstacles include limited recognition, low levels of respect, and pay being withheld or only increased after a struggle. At the same time, their male colleagues are elevated through metaphorical glass escalators that move men out of a feminized and woman-dominated occupations (Williams, 1992). I make a theoretical contribution by bringing together these glass concepts into the metaphor of a game of chutes and ladders, whereby ladders are mechanisms that are reserved for the elevation of men. The chutes are reserved for women; regardless of how they approach their work, no matter what their experience, style or pedagogy is, they inevitably land on a chute and are pushed back into their place more teacher, less scientist. Chutes and ladders predict a

gendered experience for these teaching faculty because women are doing feminized work in a masculine-dominated field. They are intelligible as teachers, less so as physical scientists. Teaching is lower status, and therefore their female disadvantage is magnified. They are pushed back into the role of teachers to satisfy every level of the gender system. Individually, their identities as educators evolve while their science identities atrophy; interactionally, stereotypes about women desiring flexibility and having husbands to support them are perpetuated while expectations that they should have fulfilling careers are stunted; and institutionally, rules are applied to reify hegemonic beliefs. Men on the teaching faculty, on the other hand, are intelligible as physical scientists and are less intelligible as teachers. Because science is high status, their male privilege is magnified. Mens advantages reinforce gender system. Individually, their identities as research scientists are maintained due to the male bodies that predominate as research faculty; interactionally, their access to the social network of powerful men feeds an expectation that they should not be considered ordinary teachers; and institutionally resources are distributed in their favor based on cultural logics around male breadwinners. This study has significant implications for higher education and gender equity, and points to the need for policies that foster gender equality through structural change rather than focusing on individuals' deficits.

Do gender inequalities play hide and seek in universities? On the need to develop new indicators to improve gender equality plans

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender, inequalities, higher education, indicators, women

The gender equality plans developed in most universities and higher education systems are based on a list of indicators that measure gender inequality. They include, among other aspects, information about recruitment, promotion and retention of both men and women. Their objective is the assessment of several dimensions that are thought to characterize the academic career. This article analyses 15 Spanish universities located in the Mediterranean region using such indicators. Data were obtained through the equality units of each

university and information was collected from 39 variables that were subsequently analyzed by using descriptive statistics. The results asses gender inequality and, crucially, reveal some ambivalences. On one hand, the data suggests an improvement in women's access to academic careers, as well as in their retention. On the other hand, however, the data continues to pinpoint a clear prevalence of men in key management positions -and thus in the governance structures- as well as greater scientific productivities among the male population. There is a growing body of research that uses indicators to examine the situation of women in science. A range of such indicators, variables, indices and calculations have come to be part of the debate and analysis of this issue. We have more and more information that can be used to explain part of the gender imbalance at universities. Despite the availability of extensive data in this area, we believe that universities are still failing to collect some of the most relevant information that they need in order to design truly effective policies to forward equality between men and women. In this context, we discuss the need to design new indicators that focus on the emerging inequalities that women are facing even when, as in the Spanish case, they are becoming the majority in certain professional categories. These indicators should lead to more effective equality plans, which must be able to cope with the increasing complexity and competitiveness of the environments in which GEPs are being designed and implemented.

Fostering Gender Equality awareness in a COIL Virtual Exchange Project at undergraduate level

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↳ **Keywords:** COIL, international virtual exchange, undergraduates, women in literature, gender equality

We present a case study related to Gender Equality that integrates topics in Sustainability education with diversity, equity and inclusion efforts to increase student awareness and build international virtual exchange networks. Using the COIL[1] (Collaborative Online International Learning) framework, undergraduate students from partnering institutions build relationships through recorded icebreaker self-introductions and dialogue, develop cross-cultural projects, and manage conversations on gender inequalities, community

development and social justice. Students from a SUNY New Paltz (New York, USA) Women in Literature GE course partner with English Textual Analysis (English Degree) students at Universitat Rovira i Virgili in Tarragona, Spain on an international virtual exchange project titled Artists of the Self developed in the Fall term, year 2020. By analyzing three short stories written by women, students examine non-conforming characters who resist cultural norms and values in order to create new identities for themselves as an act of survival. For their final group presentations, students compare Spanish and U.S. perceptions of womens mental health stigma, gender (non) conformity, teen suicide and sex work as relevant to their chosen stories. Four United Nations Sustainable Development Goals[2] frame these critical thinking projects: #5 Gender Equality; #10 Reduced Inequalities; #8 Decent Work; and #3 Good Health & Well Being.

[1] COIL (Collaborative Online International Learning) is an innovative methodological approach involving collaborative teaching and learning by online means. The dedicated COIL Center, created by the State University of New York
(SUNY) in 2004, develops and facilitates authentic opportunities for intercultural and transnational learning addressed to high school and college students and practitioners: http://coil.suny.edu/page/brief-history-suny-coil-center.

[2] https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Representation of Women in editorial board positions in Sport Sciences journals

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↳ **Keywords:** Gender inequality, sport sciences, editorial board, leadership positions, women

Introduction: Although the inclusion of women in the scientific community has increased in recent years, women continue to be underrepresented in numerous scientific fields (1). This underrepresentation of women is even more pronounced in leadership positions (i.e., members of editorial boards and Editors-in-Chief) in scientific journals (2). Exploring gender disparities in these positions is of interest because editors have authority and decision-making responsibility to address policies oriented toward improving scientific dissemination (3). A lack

of diversity in editorial committees is concerning since it could be leading to narrower points of view, limited perspectives or lack of sensitivity towards issues related to women. However, the representation of women as Editors-in-Chief in the Sport Sciences journals is unknown. We hypothesize that women would be underrepresented as Editors-in-Chief in the journals of the Journal of Citation Reports (JCR). **Methods:** We identified Editors-in-Chief sex from JCR Sport Sciences journals by exploring institutional profiles, photographs, personal websites, Google Scholar, ResearchGate or social media. We further identified the quartile (Q) in which each journal was ranked according to the 2019 Journal of Citation Reports. **Results:** We found that of 103 Editors-in-Chief in 85 JCR Sport Sciences journals, 12% (n=12) were women and 88% (n=91) were men. When further exploring the proportions in different quartiles, this underrepresentation was exacerbated the higher the journal was ranked. In journals ranked as Q1 (n=21), 7.7% vs 92.3% (women vs men, respectively); in Q2 (n=21), 10.3% vs 89.7%; in Q3 (n=21), 13.6% vs 83.3% and in Q4 (n=22), 15.4% vs 84.7%. Indeed, in the 85 journals identified, 73 (85.9%) did not have women as Editor-in-Chief. **Conclusion:** Our results show that women are underrepresented as Editors-in-Chief in Sport Sciences journals. These results suggest that women are not present in relevant decision-making processes like which topics should be of interest in the field of Sport Sciences, which articles should be accepted/rejected or improving scientific knowledge on the female population. Editorial boards should be as diverse as possible and not mainly led by men, especially since gender heterogeneity will likely lead to higher quality research and publication. Women are underrepresented in editorial board positions in Sport Sciences journals and this gap becomes bigger as higher is the journal ranked according to the 2019 JCR. Further research is needed to deeply understand the causes of this gender gap in the field of Sport Sciences.

Teaching innovation as an instrument for institutionalizing of gender equality in universities: a SWOT analysis of its impact

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Higher education

The processes of institutionalising gender equality policies in Spanish universities are in the consolidation process, although with different projections in areas and indicators of the institution. Despite progress in some aspects (such as, design of gender equality plans and analysis of the female presence in different organisational and leadership positions), gender dimension in university studies is almost absent (Larrondo and Rivero, 2019). This research analyzes teaching innovation as a specific area for the gender equality institutionalization and the concretion of diversity policies in Spanish universities. Teaching innovation is considered a strategic tool for the change and transformation of teaching practices and an instrument for the renewal and improvement of institutions. A SWOT analysis (strengths, weaknesses, opportunities,and threats) of the existence and development of specific teaching innovation programs on gender issues is carried out. A public university located in the AndalusianAutonomous Community (Spain) is taken as a case study. In the 2014/15 academic year, this university created a educational innovation modality to promote gender equality within the gender mainstreaming implementation framework into all institutional areas. All teaching staff who had coordinated the innovation projects on gender equality since the beginning of this modality implementation and some members of the Commission in charge of its design were interviewed. In addition, project reports and the relationship of this initiative to the institutionalization of teaching innovation on gender equality and diversity in the national scene were analyzed. This paper provides evidences in the field of gender equality policies in higher education (Smith, 2011). On the one hand, this institutional initiative encourages and recognizes the introduction of the gender perspective in the university teaching. On the other hand, there is a certain opportunism because specific actions are developed in the classroom with little knowledge and reflection on gender equality due to the vertical and prescriptive model of teaching innovation.

Intellectual disabilities and gender: views from Portuguese young professionals

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Intellectual disability gender-based violence, victimisation, academic training skills

The invisible intersection between gender and intellectual disabilities continues to impact the lives of the women who experience gender-based violence, namely, domestic violence (Thiara, Hague, & Mullender, 2011; Meer & Combrinck, 2015). There is a gap regarding the specific training of professionals in terms of adequate training for the monitoring and care of these women, and this gap starts in their higher education. The academic portrait has been presenting itself as unfit to include these fields of expertise in their curricula. Many times, these professionals enter the professional reality feeling unprepared to deal with these cases after concluding academic courses. In this way, the project ATHENA BEGIN: European cooperation against gender-based violence towards people with intellectual disabilities aims to address the needs of professionals and young professionals in the sense of training for gender equality and promotion of the rights of women with intellectual disabilities who are victims of domestic violence. In this sense, the Portuguese project team resorted to a series of activities, of which, a focus group with professionals and young professionals from crucial areas for intervention, such as psychologists and criminologists. The purpose was to know and understand the main needs experienced by these professionals and how these can be bridged. The results presented two main needs (1) in the field of knowledge in intervention within gender-based violence against women with intellectual disabilities and (2) the need for skills in intervention within victims with intellectual disabilities, in the field of intellectual disability and of victimisation under gender-based violence, respectively. Aside from the significant need to implement and develop academic training in this field of work, there is also a need to commit to ongoing training after the academic path has ended. Such results suggest that young professionals do not feel prepared for intervention towards this vulnerable group and consider that the gender perspective is still insufficient in academia, therefore reckoning the intersection and

consequent interaction between gender and intellectual disability of women, in regards to the absence of training. The results and main implications of the study will be discussed during the event, as well as clues for future research.

"Everything needs to change, so everything can remain the same": the impact of remote work on gender inequalities in Academia.

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topics: IMPLICATIONS OF THE COVID-19 FOR THE DIFFERENT DIMENSIONS OF GENDER EQUALITY POLICIES IN R&I

GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** COVID-19, gender inequalities, academic career, moral careers, smartworking

The recent COVID-19 outbreak has generated a deep change in the ways work is organized in Academia. The peremptory need to guarantee physical distancing to contain the infection has imposed on almost all the teaching and administrative staff a confinement at home and a remote control of teaching, research and service activities, that have all been transferred from the usual face-to-face practices in presence to online platforms. Beyond the contractual formulas used to specify this change - from teleworking to smart working to the more generic "work from home" - a rich harvest of studies (Vaziri et al., 2020; Cui, Ding & Zhou, 2021) has shown how the translation of material work relations into virtual ones had not a neutral impact on men and women. In fact, the overlapping of moments connected to professional tasks and family and care-related moments in a context of collision between public and private spaces has generated a higher documented stress among women than men. A survey at the University of Cagliari on a population of about 300 teachers of both sexes in different phases of their academic career (from researchers to full professors) has been the occasion for inspiring our paper: if it is true that this change in university work practices started in the name of emergency, and has been accompanied by a narrative of temporary condition, in the hope to "return to normal", there is the risk that a good part of it, after a year of mandatory testing, will be institutionalized after the end of the pandemic, leading to a new normal working condition. A pivotal issue concerns the pre and post Covid-19 meaning of work-life balance, which in light of the overlapping of work-family

boundaries and the pervasiveness of the work sphere on the private one must be kept under control. Women, on average, perform a disproportionate amount of childcare, housework and family responsibilities (Bianchi et al. 2012), and they are likely to be more affected than men by the current pandemic situation. Women in academia, therefore, would seem called to deal with a different use of their working time than in the past, which could certainly impact on their productivity and consequently on their career. The sclerotization of the unequal contents associated with the gender moral careers with respect to the reconciliation between work and private responsibilities, which in just twelve months seems to have returned to the fore, should not be liquidated as an effect of the emergency, destined to finish with it. On the contrary, it should be kept in mind whenever the temptation arises to formalize the temporary change into structural change in the way of working, without foreseeing equally solid changes in the measures to combat gender inequalities. For example, by setting in a better way the strategies already planned in the gender equality plan defined by the University of Cagliari before and regardless of the pandemic: eg. the criteria for evaluating scientific productivity, or a number of teaching hours compatible with conciliation needs.

The Gender and LGBTI+ Dimension in Information and Documentation Studies: A case study of the University of Barcelona

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↳ **Keywords:** Information and documentation studies, gender dimension, LGBTI+ dimension, participatory action research

This article explores the knowledge, perceptions, evaluations and positions of students and teachers regarding the integration of gender equality and LGBTI+ perspectives in the teaching of a bachelors degree at the Faculty of Information and Audiovisual Media (FIMA) of the University of Barcelona (UB). The article explores in depth the students and teachers knowledge about the current level of integration of the gender and LGBTI+ perspectives in the curricula and teaching of the bachelors degree in Digital Information and Documentation Management taught at the FIMA of the UB. We also aim to determine the

perception that both teachers and students have of what it means to integrate the gender perspective in teaching and what are the advantages, resistances, shortcomings, and challenges to doing this. The final objective of the research was to detect and make visible the good practices that teachers implement in their teaching activity to integrate the gender and LGBTI+ dimension. We will carry out an empirical analysis based on participatory action research (Chevalier and Buckles, 2013) at the FIMA. This approach involves researchers and participants working together to understand a problematic situation and change it for the better. It also makes it possible to liberate participants to increase their awareness of the situation so they can take action. The data collection methods include focus groups, observations and a scientific literature review. We will conduct four focus groups: two with teachers and two with students (scheduled for April 2021). Each focus group will be composed of 6-8 people and we expect to cover between 6 and 8 subjects of the bachelors degree. These 6-8 subjects will be selected taking into account various criteria: course, semester, topics (long tradition in the field or innovative), and the nature of the contents (theoretical/practical), among others. We will take care to ensure that the participation in groups (students and teachers) is diverse in terms of gender. Our analysis will provide empirical evidence on the implementation of the gender and LGBTI+ dimension in information and documentation studies, which is a relatively unexplored area. In addition to understanding the current situation, which will help us to identify the challenges, difficulties and benefits of integrating a gender and LGBTI+ perspective into information teaching, this analysis also aims to detect good practices that tend to be invisible in everyday teaching activity and give them visibility and recognition. Therefore, this research will become action. It is important to highlight that the Catalan case is especially interesting in the current context, as the gender dimension has become a strategic line in the Catalan university system in general, and in the UB in particular. In addition, in May 2020, the FIMA approved its Action Plan on Gender Equality, which includes, as one of the main strategies to be applied in the next two years, the integration of the gender dimension in university teaching. Finally, this communication is an outcome of the Gender Perspective in Information and Media Studies (GENDIMS): anàlisi i proposta research project, funded by the REDICE-20 research programme of the UB.

How can the Gender and LGBTI+ Perspective be integrated into Media Studies? A Participatory Action Research Approach

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↳ **Keywords:** Media studies, gender perspective, LGBTI+ perspective, participatory action research

Currently, the gender perspective has become a strategic line both in the entire Catalan university system and in the University of Barcelona in particular. This provides an excellent scenario in which to reflect together with teachers and encourage them to introduce the gender and LGBTI+ dimension into their daily teaching practice. This is one of the main objectives of the research project we present here: Gender Perspective in Information and Media Studies (GENDIMS): anàlisi i proposta. The study received funding from the REDICE-20 research programme (University of Barcelona) to be carried out between 2020 and 2021 in the Faculty of Information and Audiovisual Media (FIMA). Through collaborative research that aims to promote social transformation starting in the classroom, this article focuses on the way teachers can integrate the gender and LGBTI+ perspective into the subjects they teach. Based on two creative workshops conducted with teachers who teach the Bachelors Degree in Audiovisual Media at the FIMA of the University of Barcelona, this Participatory Action Research (Chevalier and Buckles, 2013) aims to get teachers and researchers working together to understand a problematic situation (the low level of integration of the gender and LGBTI+ dimension in university teaching) and change it for the better. Between 6 and 8 teachers of the bachelors degree will participate in these creative workshops (scheduled for April-May 2021). They will be selected according to different criteria related to the course they teach. Care will be taken to ensure that the participation is diverse in terms of gender. These workshops will be used to prepare materials (audio visual material, guides, etc.) that will be deposited in a repository to be used by all faculty teachers (also with authorship). The repository will be open access and will share both the good practices detected during the fieldwork and the materials created during the project. This research action seeks to work collectively to explore different ways to integrate gender and the LGBTI+ dimension into daily university teaching and also detect good practices that are often invisible in the teaching practice and give them visibility and recognition. This analysis is particularly

important at this time, as currently there are complaints and protests against gender inequalities in the audiovisual media sector all over the world. Integrating the gender dimension into media studies is one of the main and necessary steps towards redressing these far-reaching gender discriminatory practices.

Assessment of Academic Advancement Workshops for Female Faculty in STEM in Canada

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topics: GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Academic advancement, workshops, impact, promotion

In Canada, female STEM faculty make up less than 30% of faculty at the highest professorial rank of Full Professor despite large cohorts of undergraduate female students in these fields. Differences between STEM disciplines are notable. With this data in mind, the Canadian Natural Sciences and Engineering Research Councils Network of Women in Science and Engineering Chairs have delivered academic advancement workshops for female Assistant and Associate Professors in the STEM fields, across the country over the past ten years. The intent of these 1-2 day workshops is to provide tools for female faculty to succeed in their promotion applications, to empower them to apply for promotion/tenure, and to share best practices. 74% of attendees found the workshops useful for learning how to frame their tenure and promotion applications; 67% of attendees successfully applied for promotion after the workshop. We have observed directly how learning from other female professors who have been through the tenure and promotion process can significantly assist more junior faculty on embarking on this important yet often perceived as, a huge obstacle in their career progression. This presentation will present an overview of the workshop content and will discuss the direct and indirect impact of these workshops across Canada over the past decade.

Gender mainstreaming in humanities: integrating gender dimension in higher education linguistic-literary curricula

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender mainstreaming, higher education curricula, humanities, linguistic–literary studies, good practices

Universities are crucial to avoid generating and transmitting gender-biased knowledge. Education is one of the universities fundamental activities. Staff with teaching responsibilities has an essential role in changing the way disciplines are taught. Integrating a gender dimension in teaching curricula is a means to achieve gender equality in society. Therefore, mainstreaming gender into teaching should be one of the central features of gender equality university policies. Despite the legislative effort, there is an observable legislations lack of enforcement on introducing the gender dimension into the university teaching (Pastor et al. 2020). In fact, it is recognized that curricular reform is one of the most neglected policies when dealing with gender (in)equality in higher education (Verge 2020). In this contribution, we present an initiative, developed at Universitat Rovira i Virgili, aimed at supporting the integration of the gender dimension in university curricula at different levels (undergraduate and postgraduate). The ongoing project purpose is to provide guidelines and recommendations, affecting both the design of courses and how they are taught, for effectively mainstreaming a gender perspective in higher education teaching. Our project focuses on humanities, specifically on the degrees related to the linguistic-literary area of knowledge. Even though recently, major emphasis has been put on developing models for integrating the gender perspective into the university curricula in scientific and technological fields, it is acknowledged that efforts should still be made to develop gender mainstreaming in humanities teaching practices. Our final goal is to facilitate the implementation of gender mainstreaming by providing specific teaching resources. Although good practices have been generated for the introduction of the gender dimension in higher education, when implementing approaches, it is important to take into account the specificity of the discipline since the particular features of each area determine the aspects to which gender perspective can be applied and how it can be mainstreamed in

the curriculum. In the first stage of our project, we have identified the gaps and resistances to the introduction of the gender dimension into the teaching practice within the faculty members of Universitat Rovira i Virigili as well as the way gender mainstreaming is included in the university curriculum of linguistic-literary studies. In the second stage, we have proposed and implemented a protocol of good practices to include the gender perspective in the teaching of language and literature. Currently, we are developing a resources database for the integration of gender perspective into the bachelor and master curricula and the teaching practice. The database includes subjects across different fields of linguistics, literature and second and foreign language teaching. For each subject, a gender-sensitive curricula is proposed. Specifically, our online resource indicates contents, tools, support materials, learning outcomes, references, assessment methods, etc. which, from the perspective of gender dimension, should/could be integrated into the curricula of the undergraduate and postgraduate programs at our university. In short, our main scope is to help university professors in their teaching practice by developing good practices for gender-balanced courses.

An Exploratory Study on Experiences of Indian Tribal Women in STEM Research

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Higher education, India, STEM, tribes, women

The underrepresentation of women in science, technology, engineering and mathematics (STEM) disciplines poses a continued concern across the globe. The aim of the present study is to explore the experiences of tribal women in STEM research in one of the North-Eastern states of India called Mizoram. The total literacy rate in Mizoram is 91.33% (Male- 93.35%; Female- 89.27%) according to 2011 census of India (the latest) and it stood third in terms of ranking of states and union territories. 94.43% of population in the state is under the scheduled tribe category of India (Ministry of Home Affairs, 2011). The society is patriarchal in nature and the men in the household of Mizoram takes control of social, religious and economic affairs. Public higher education institutions are more prevalent in the state. Various central and state government institutions offer STEM higher education courses.

Participation of all genders in higher education are encouraged in all disciplines, still the differences persists especially in STEM disciplines. The gendered norms and social stereotypes show impact on students in doctoral research in science and engineering (Gupta, 2007) and also economic conditions and influences of family are linked with gender related issues in India (Vindhya, 2007). The influence of socio-economic, cultural and familial factors of the society largely contributes to the gender gap in STEM disciplines. The empirical research includes a sample of 30 doctoral research women from various STEM disciplines in the state of Mizoram, India. Mixed method approach is applied. Questionnaires and semi-structured interview schedule prepared by the researcher is used for collecting the data. The results show that there is a stronger influence of societal factors contributing to barriers on womens entry into STEM disciplines at different levels of higher education among Indian tribal women. The experiences of tribal women in STEM research show that women are experiencing more burden than men due to the stereotypical household chores and taking care of the family members. The study concludes that there needs to be policy initiatives in providing supportive environment to women in higher education and changing the perceptions of the society towards women to bring gender equity in STEM higher education.

Maximizing Female Student Success in Earth Sciences and Mining Education Programs in Ethiopia

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Higher education; STEM; gender; Ethiopia; success

This paper offers the findings of a research project on maximizing female student success in earth science and mining engineering university programs in Ethiopia. This project aimed to understand the challenges faced by female undergraduate students in these programs, and to offer recommendations to promote gender equality in mining-related higher education in Ethiopia. The study collected and analyzed sex-disaggregated quantitative and qualitative data from undergraduate students, faculty and staff at four Ethiopian universities, two in the capital city of Addis Ababa, and two in northern Ethiopia (in Mekelle and Axum). The majority of the data was collected in November and December 2018. This

paper details the findings from the original dataset, including survey data from 221 female students, and 418 male students of mining engineering and geology, and 130 surveys from faculty and staff. The lower number of female respondents reflects the lower numbers of enrolment of women in these programs. The team also facilitated 19 focus group discussions with students and key informant interviews with students, faculty and staff. The paper explains the rationale behind the research design and survey questions, presents the findings from the data analysis, and offers recommendations for maximizing female student success in mining related university programs. International best practices for promoting gender equality in earth sciences and mining engineering programs, and their possible relevance for addressing the challenges identified by this study, are also discussed With respect to many of the variables associated with having a successful university experience, this study found that female students fare worse than males. For example, female students were more stressed than male students about failing, had lower grades, and faced more skepticism and gender biases (which were especially pronounced during field study assignments). Many gender biases were held equally by females and males, although for some gender norms, the differences between male and female responses were statistically significant. With respect to leadership qualities, for example, far more females than males believed that women could be strong leaders. Some findings contradicted gender norms and perceptions. For example, male students reported being more concerned about becoming married and having a family than females (countering perceptions that females were preoccupied and males disinterested in marriage and family), and male students were more aware of gender issues than faculty and students often thought. Although the paper does not contradict the findings of recent large studies (1) on gender norms, biases and expectations, it does give a more complicated picture. This paper joins a small body of academic work (2) that suggests people can misperceive the gender norms and expectations that others hold, and these misperceptions may impact their behaviour. The paper details the complex ways gender expectations and pressures are perceived by male and female students, faculty and staff and discusses the implications of this complexity for programs aiming to maximize female student success in STEM fields. This research was undertaken as part of the Strengthening Education for Mining in Ethiopia (STEM) project funded by Global Affairs Canada (GAC) in partnership with Alinea International.

Academic labour under pandemic crisis: gendered intersectional perspectives on impacts and strategies to accommodate remote teaching/research and growing academic service/care demands

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IMPLICATIONS OF THE COVID-19 FOR THE DIFFERENT DIMENSIONS OF GENDER EQUALITY POLICIES IN R&I

↳ **Keywords:** Gender, COVID-19, faculty, academic service/care, remote teaching

Multiple gender inequalities mark academia. These inequalities have been aggravated since the beginning of the pandemic period. The great centrality of bibliometric indicators in the evaluation of scientific performance for access and progression in the teaching and research career juxtaposes with the decrease in the submission of articles with individual female authorship and the increase in those with male authorship (as per e.g., Nature, Science, The Lancet). In addition, there were several warnings and testimonies about the difficulties of reconciling remote teaching and research work with personal and family life in this context. There are abundant evidence that the pandemic has made the negotiation between public and private on which academic careers are organised even more painful (Corbera et al., 2020; Pereira, 2021). The intersectional perspective alerted us to the fact that the impacts of the pandemic crisis of COVID-19 on academics are differentiated, depending on sex, age, scientific area, type of employment relation, and household composition (especially in the case of single-parent families and/or families with children under 13 years old). This paper will present the results of the project, ongoing at the Centre for Social Studies at the University of Coimbra, "Pandemic and Academia at home - what effects on teaching, research and career? Study on changes in the higher education and research system" (FCT/077), with funding from the Portuguese Foundation for Science and Technology. This project aims to identify the experiences of people who carried out research and/or taught in higher education (university and polytechnic) in Portugal during the pandemic crisis. The strands included in the study include the adaptation strategies of academic work in a pandemic context in relation to: i) contingency measures adopted by Portuguese higher education institutions (HEIs); ii) remote working methods of teaching and evaluation; iii) work/family balance; iv) restrictions to the execution of research plans and; v) perceived impact on productivity and on career opportunities. In methodological terms, we worked

with a mixed explanatory sequential research plan, using the qualitative results to interpret the quantitative ones. We applied an online questionnaire survey. The working universe consists of 7,883 teaching staff spread across 7 universities and 7 polytechnic institutes. The results of this survey are analysed in semi-structured interviews with trade unions, government and institutional representatives and in focus group with teachers and researchers. The results of the surveys are submitted to inferential statistical analysis and the interviews to thematic analysis. Beyond the recurrent variables and indicators in studies on the impact of COVID-19 (regarding productivity and work-family balance), we wanted to make different questions (Pereira, 2021). Within this framework we address issues related with the institutional and individual adaptation and future perspectives on remote teaching, on remote scientific meetings and on academic service/care. Our study will contribute to give visibility to academic service/care from a gender and intersectional perspectives (Guarino & Borden, 2017).

Gender Fairness in the Artificial Intelligence Framework

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↳ **Keywords:** Gender issues, bias, trustworthy AI, machine learning

As Artificial Intelligence (AI) is becoming ubiquitous in our everyday life,there are challenges and risks that cannot be ignored. In particular, it is urgent to understand how to develop a so-called trustworthy AI [1]. One of the principles to fulfill in order to increase the trust of people in AI systems is the fairness of the algorithms being employed, which can be considered as the absence of any prejudice or favouritism toward an individual or a group based on their inherent or acquired characteristics. However, several recent case studies have shown that many Machine Learning (ML) algorithms are unfair and bring to applications affected by biases in different fields, from machine translation to assessing geodiversity issues, from predictors of crime recidivism to predictors in medicine, from face recognition to recruiting tools (for a state-of-the-art survey of works on bias and fairness in ML see [2]). Speaking of gender bias, we adopt the definition given by EIGE [3], i.e., prejudiced actions or thought based on gender-based perception that women are not equal to men in rights and dignity. The hypothesis is that ML algorithms are not gender neutral due to their nature of being

bottom-up and data-driven. They can capture and subsume the most common biases diffused in society and even reinforce them. In fact, they are trained on data provided by people, and people are biased in conscious or in unconscious way. So, to develop a gendered innovation in AI, that is including the gender dimension in its content, means ensuring that the biological characteristics as well as the social and cultural features, behaviors and needs of both women and men are taken into consideration [4]. More in general, to produce excellent research, an inclusive approach considering the most important intersecting social categories is needed. A first conclusion is that it is crucial for the implementation of a Trustworthy AI that developers and users of AI-based tools do not pursue a blind application of data-driven AI methods since it can lead to a strong reinforcement of existing social and gender bias. So, when we use ML tools we should check whether the data used for training the underlying algorithms includes also all the bias about gender and ethnicity diffused in the society. A second conclusion arises from the analysis of the relationship between the AI framework and the presence of women in this sector, that is always very low both in the academia and in the industry. To change the general fairness of AI framework, it is necessary to improve the global representation of women in technical roles and in boardrooms in the technology digital sector and to adopt general policies to create robust and gender-inclusive AI principles, guidelines and codes of ethics.

Gender Gap in STEM Academic Career in India

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Gender, higher education, India, Indian Institute of Technology, STEM

Indian higher education has experienced tremendous growth in terms of increase in number of institutions and enrolment in all types of institutions including science, technology, engineering, and mathematics (STEM). Indian higher education has reached the stage of massification (Varghese, 2015). Studies find that growth in higher education does not seem to have reduced the inequalities in higher education by gender, social groups, location (rural and

urban) and between the rich and the poor (Tilak, 2015). Studies have continuously highlighted the gender disparity in STEM higher education across the world and it is further continuing in academic career (Marginson, et al. 2013). The current research investigates the gender gap in faculties in STEM disciplines in Indian Institute of Technologies (IITs), India. Indian Institute of Technologies are the Indias top prestigious institutes which are striving for better world ranking. The study uses the data from All India Survey of Higher Education (AISHE), the data available on the websites of the institutes, other secondary sources and literatures. The findings indicate a significant gap between men and women at different ranks (assistant, associate and professor) of faculty in IITs. The overall average representation of female in selected STEM disciplines in IITs of India reveals that only 9% female are in faculty position and the remaining 91% are male. Our findings prove that STEM disciplines are dominated by males in IITs in India where females are visibly lower. Further, findings indicate that underrepresentation of women faculty differ across the discipline within the STEM disciplines in IITs. Societal attitude towards women in science and technology plays a pivotal role implicitly in appointing faculties in IITs. There is a serious need to increase the representation of women faculty in STEM higher education in IITs for the growth and development of the country. Practicing positive discrimination to provide equal opportunities for women, creating supportive system for women workforce in academics to lessen the challenges, organising programmes to change the perception of society towards women and more incentives and research funds to women for conducting researches are needed at different levels of education in STEM higher education for achieving the sustainable development goal (SDG)- 5 on gender equality in all walks of life including decision making.

Examining gender unconscious biases and good-practices:Examining gender unconscious biases and good-practices: BBC- Israeli academic college as a case study

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

Keywords: Academic colleges in Israel, gender equality, leaky pipeline, unconscious gender bias, gender inclusive good practices

This study, conducted in the framework of the CHANGE[1] project, presents a mapping and examination tool of gender inclusive good-practices in academic colleges in Israel, referring to the leaky pipeline model (Dubois-Shaik & Fusulier, 2015). This model assists in identifying gaps and unconscious gender biases in recruitment, promotion, and funding processes of female researchers, thus revealing unconscious biases which might inhibit the promotion of talented women to senior positions in various fields - industry, education, and others aka the glass ceiling (Ansari 2016). Quantitative figures clearly show a decrease of women along the academic career path (SHE Figures, 2018 Figure 6.1, p. 116). The aim of this study is to identify the weak points which perpetuate inherent gender gaps in the academic and scientific system resulting with a decrease of female researchers in higher ranks and positions. The Israeli case study of Beit Berl Academic College is in fact a multi-layer case, consisting of gender gaps in three parallel contexts: academia in general, research funding organizations (RFOs) and processes, and an additional and unique context of Israeli public academic colleges, as historically not being defined as research performing organizations (RPOs) by law, thus significantly lacking adequate research resources, nevertheless are evaluated and measured by research productivity as universities. Staff members in colleges, especially women, are often challenged in all these three contexts. An examination of gender inclusive good practices in RFOs and RPOs was conducted in this study, followed by a categorization of practices into six major groups, defined by targeted solutions to specific gaps along the leaky pipeline model: Special support instruments for researchers; Womens presence in decision-making bodies; Organizational transparency; Gender mainstreaming and sensitization; Gender experts, education, and trainings; Policy, budget, regulation and monitoring. This typology also clarifies the level of implementation of each group of practices in the social-ecological academic environment whether it be the microsystem (individual researchers), meso or exo-systems (RPOs or RFOs) or the macrosystem (ministries, national regulation and beyond). The mapping, which is still a work in progress, is conducted through an online questionnaire addressed to a group of academic staff members in Israeli colleges, specifying the good practice typology and concrete examples in each category. Based on CHANGE and other gender-oriented EU projects, we will argue that effective implementation of gender inclusive policy requires the activation of several good-practices of several categories and implementational levels, synchronically and by different kinds of actors in the system.

[1] CHANGE - CHAlleNging Gender (In)Equality in science and research has received funding from the European Unions Horizon 2020 research and innovation programme under grant agreement No 787177. The project is coordinated by the Interdisciplinary Research Centre for Technology, Work and Culture - IFZ (Austria), further partners are: Rheinisch-Westfälische Technische Hochschule Aachen (Germany), Universidade De Aveiro (Portugal), Zilinska Univerzita V Ziline (Slovakia),

Nacionalni Institut za Biologijo (Slovenia), Fraunhofer Gesellschaft Zur Foerderung der Angewandten Forschung E.V. (Germany), Beit Berl College (Israel).

A Conceptual Framework for Identifying Factors Contributing to the Development of Transparent, Sustainable and Resilient Gender Equality Plans in Business and Management (B&M) Schools

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↳ **Keywords:** Gender equality, Gender Equality Plans/GEPs, gender equality barriers, enablers

Women remain under-represented in all disciplines and at all levels of academia, especially at the professorial level and in senior leadership roles. Gender Equality (GE) research has focused mainly on STEMM subjects, while little research has been performed in Business and Management (B&M) context (Roseberry et al., 2016). TARGETED-MPI is a SWAFS-HORIZON2020 project aiming to address the knowledge and practice gaps that impact on mechanisms used to encourage fairness, transparency and equity and foster B&M schools sustainability and resilience through the use of GEPs. The knowledge gap comprises a lack of holistic and in-depth research of both structural issues (e.g., recruitment, promotion, retention practices) and cultural issues, including social practices and socialisation systems (unconscious implicit schemas) that account for how and why inequality persists. In addition, there is little accurate statistical evidence that illustrates who is impacted by inequality and at what stages in their careers. The practice gap results from the limitations associated with the development and implementation of effective GEPs aimed at achieving GE, building capacity for sustainable inclusive action and promoting institutional and cultural change. The overarching strategic objective of the TARGETED-MPI project is to introduce institutional changes in Business and Management (B&M) Schools to drive more inclusive, sustainable and transparent academic cultures. An important input for the development of sustainable, transparent, resilient, and integrated GEPs in B&M Schools is the identification of the factors influencing gender equality in academic institutions. This paper presents a multi-layer conceptual framework that reveals the inter-related factors (cultural context, meso-level

factors and career and personal outcomes) which impact on GE. The proposed framework was developed through a systematic review of the literature. This comprised conceptual and empirical papers, reports, and surveys to map factors that influence gender inequality in academic organisations and, more specifically, in B&M schools. Following thematic analysis, career structuration theory, the sociological concept of meso-structure, and a cultural dynamics model, we classified the information we extracted from the primary sources into three themes of factors affecting and/or expressing GE: i) factors setting the cultural context within which an academic organisation operates; ii) meso organisational factors that reflect the effects of the cultural context into the way that academic organisations are operated and managed (we call them organisational meso symptoms); and iii) factors personally felt affecting individual careers of female academics. These three themes constitute the elements of a three-layer conceptual framework. The constituent elements of each layer interact within their layer while each layer interacts with the rest of the layers and thus reinforce each other. This framework was used to identify the factors that negatively affect GE in academia and which act as barriers to the creation of a gender balanced academic working environment. It can also be used to identify a host of factors that act as enablers and can contribute to the development of effective GEPs leading to more inclusive, sustainable, transparent, and gender equality-minded academic organisations.

Is the university a real egalitarian space? Experiences of gender discrimination in the university community from a transgenerational and interprofessional perspective

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality, gender-based discrimination, university community, detection, intervention, focus groups

Introduction: Spain ranks 8th out of 28 EU-member countries in the Gender Equality Index. This can be partially attributed to applying equality-based gender policies in various

institutions in recent years, including universities. However, social constructs based on patriarchal and hetero-cis-normative models perpetuate gender discrimination (GD), even in university contexts which are generally considered to be places of privilege. Objective: The aim of this project was to explore experiences of GD in the daily life of the University of Seville community members, as well as identify possible ways of action by deconstructing discourse, evaluating knowledge, and examining the effectiveness of existing measures. Method: In October 2020, two discussion groups were held under two premises: detection of needs, and proposals for action/intervention. In each group, 6-7 key informants participated in-person, selected through the combined criteria of sex, age and university-group membership (undergraduate and postgraduate students, administration and services staff, and teaching and research staff). These groups interacted simultaneously with a virtual audience of 47 attendees using the Blackboard Collaborate platform, thus establishing a collaborative space for reflection. After transcribing the discourse, a thematic categorical content analysis was conducted. Results: Three blocks of results were identified (1, 2, and 3). The first refers to the identified GD situation (1): 1.a) slower career progression for women than men, due to more caregiving responsibilities; 1.b) microsexism hidden through word-choice/language; and 1.c) sexual harassment and gender violence. The second block (2) details the reasons behind this GD: 2.a) a capitalist and patriarchal society which establishes gender roles; 2.b) the intersectionality of experiences of discrimination, converging characteristics such as immigration, disability, or socioeconomic status; and 2.c) the hierarchical and endogamous structures of the university, and the disconnection between the groups. The third block (3) is related to proposed action: 3.a) make university resources visible in public spaces, e.g. Referees Network of the Equality Unit; 3.b)improve involvement and participation of university community through teaching innovation programs;3.c) transversal, specific and compulsory training in gender perspective, e.g. restructuring study plans, professional training for teaching and research staff and preparing materials to promote egalitarian relationships; 3.d) networking to create common work spaces and active communication channels between different agents; and 3.e) evaluation and monitoring, reflecting on the needs and impact of current measures. Conclusions: Participants perceived the university as a space that maintains mechanisms and hierarchies perpetuating GD. Equality plans in universities are a powerful tool to critically analyze and change a system marked by GD. Such complex and changing phenomena requires bringing the individual and collective experiences of university-life closer to decision-making spaces through transgenerational and inter-professional approaches. Therefore, awareness should be raised about GD and useful measures can contribute to making the university community an equal and safe environment.

Challenges in incorporating the Gender Perspective in Higher Education Teaching and Research: the case of a Portuguese University

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Teaching; inclusion; diversity; gender equality; science and higher education institutions; Portugal

Concerns and actions to promote gender equality in European societies gained momentum with and through a gender mainstreaming perspective and positive action measures in science and higher education institutions (SHEI) (Lombardo & Meier 2008). Such actions follow the commitments to make higher education more socially inclusive and diverse, enshrined in the establishment of the European Higher Education Area (EHEA) social dimension strategy and in the European Research Area (ERA) funding frameworks. These steps aim at stimulating cultural and institutional changes to address gender imbalances in research institutions and decision-making bodies. It is in this context that specific funding was assigned to the development of gender equality in SHEI, with many European institutions designing and implementing Gender Equality Plans (GEP). Including gendered and non-normative voices in curricula represent steps towards more inclusive, gender friendly learning and working places, but also existing power relations and dominant perspectives on global issues and teaching practices are challenged (Archer 2007; Asamoah & Pauwels 2020). In this regard, progress and positive outcomes have been achieved, not without, however, institutional resistance and barriers. This study aims at exposing the experience of a Portuguese university in becoming a more inclusive and equal institution in what gender and diversity is concerned, namely through the development and institutionalization of gender mainstreaming. More specifically, attention is placed on the path taken towards the inclusion of a diversity and equity approach to teaching (science) and research activities through the creation of a curricular unit (course) on Diversity, Equity and Inclusion to be lectured to all master programs in this institution. The importance to advance gender mainstreaming at the curricular level lays in the lack of attention and action that this dimension has been receiving. European Union (EU) policies specially under the Horizon2020 framework Science with and for Society have targeted scientific excellence to

fully utilising gender diversity and equality and avoiding an indefensible waste of talent (EC 2019). Gender equality within ERA has included gender balance in research teams and in decision-making bodies and procedures, and the integration of the gender dimension in the content of R&I proposals and procedures. However, issues related to equal treatment and equal opportunities for men and women and/or (the impact of) gender and cultural stereotypes are often absent from higher education training. This lack of gender awareness at the curricular level is of particular concern, considering that, as the source of knowledge production, SHEI are powerful educational institutions, given their ability to reproduce knowledge, reconstruct the past through their perspectives, and to determine their students' knowledge discourse (Asamoah & Pauwels 2020). In parallel, SHEI have become and aspire to be increasingly more internationalized, a fact that necessarily implies greater capacity to deal with an increasingly diverse student and staff population. This paper aims thus to provide a reflection on our path to the attempts to create more effective gender mainstreaming trough the development of a course focusing on diversity and equal opportunity(ies) within contemporary societies, involving disciplinary collaboration within different faculties and departments.

Changing technology research for good? The Austrian case.

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equity, technology research, research funding, community of practice, Austria

Since 2012 the European Commission defined gender equality in research as a key priority for the European Research Area, and funded institutional change projects. One of those projects, aiming at improving gender equality in higher education and research, is CHANGE[1]. In this paper, we, the coordinating team of CHANGE, present results from an Austrian case study comprising seventeen interviews with experts from research funding organisations (RFOs), ministries, and a regional government. Furthermore, we provide insight into a co-creation process that aims to improve gender equity in Austrian technology research by building a community of practice (CoP). The CoP specifically

targets technology research, as the expert interviews made clear that there is a strong need for improvement in this particular area. Although Austria has implemented several laws that have increased gender equality at universities, these laws have had little impact on universities of applied sciences (traditionally STEM oriented) and hardly any impact on industrial research (with a heavy emphasis on technology and innovation).[2] But instead, Austrian science policy has potential leverage through research funding: In Austria, the total budget for research and development is 12.69 billion Euro. Of this, 3.66 billion Euro comes from public funding and 6.04 billion Euros from Austrian companies. Consequently, the largest proportion of research expenditure, 69.9%, is in the corporate sector, with the higher education sector far behind at 22.4% (Federal Ministry of Education, Science and Research et al. 2020). So how exactly can research funding contribute to improving gender equity in Austrian technology research? Firstly, it must be dealt with the fact that women are underrepresented not only as students, but also as professionals and researchers in STEM fieldsfor example, the share of female researchers in Austria is 39.9% in higher education and 17.1% in the business sector (European Commission 2018). Thus, a science and research policy that aims for gender equity in all research practice organisations (RPOs), including the business sector, must link research funding, including funding for industrial research, to gender equity goals and monitor and evaluate these goals. Secondly, RPOs (especially outside higher education) need to be encouraged to implement gender equality plans and to build gender equality competences. The latter was the aim of our co-creation workshop with 8 RFO stakeholders and a series of workshops with stakeholders from ten RPOs from technology research, using existing materials (from other sister projects, e.g., GEECCO, with an explicit focus on engineering) and customizing them to the needs and the context of specific organisations in our Austrian CoP. [1] CHANGE CHAlleNging Gender (In)Equality in science and research has received funding from the European Unions Horizon 2020 research and innovation programme under grant agreement No 787177. [2] In 2000, the Austrian government committed to gender mainstreaming and since 2002 gender equality is a leading principle for all universities (Universitätsgesetz 2002), making gender equality offices and gender equality plans obligatory at all Austrian universities. Furthermore, in the budgeting reform of 2009/2013 gender has been included as one of five impact goals for the public sector.

Gender gap in adolescents expectations of future occupations and sociopolitical participation: The contribution of personal wellbeing, concerns with social issues, and social efficacy to reproducing inequalities

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Adolescence, gender inequality, occupational aspirations, intended sociopolitical participation

Introduction: Despite an increase in adolescent girls preference for typically male-stereotyped jobs and political participation, there is still an important gender gap between the number of girls versus boys enrolled in science, technology, engineering, and mathematics (STEM) careers, their future occupational aspirations, as well as in their political participation. Girls show to be more likely to choose non-STEM careers and occupations for their future and be more engaged in social participation, whereas boys tend to be more likely to choose STEM careers and occupations, and to participate more in political activities. In this context, schools have an important role for increasing womens participation in society and reducing the gap between men and women in future occupations and sociopolitical participation. **Objective:** This study aims to explore adolescents gender inequalities in their job aspirations and expected sociopolitical participation, understanding the contribution of factors such as psychological well-being, concerns with social issues, and self-efficacy. In addition, this study explores the role of socioeconomic inequalities in maintaining the gender gap. **Method:** This research is based on a sample comprised of 8,598 adolescents (50.6% girls) aged between 11-18 years, who participated in the 2019 edition of the study Opinion Barometer of Childhood and Adolescence (Barómetro de Opinión de la Infancia y Adolescencia) in Spain. The study was conducted in the University of Seville and supported by UNICEF. Selected measures were, in addition to sex and age: job aspirations and values, intended sociopolitical participation in the future, family material affluence (as a measure of socioeconomic status), KIDSCREEN questionnaire, concerns with

social issues, and self-efficacy. Descriptive statistics, correlation and regression analysis were performed. **Results:** Data showed an important gender gap in adolescents for both future occupational aspiration and job values, as well as for sociopolitical participation as adults. Although similarities were also found among boys and girls with no differences in the most valued occupations and the aspirations for some of them such as researcher, journalist or philologist, differences were noticeable. Girls scored higher in their valuation of all occupations and tended to manifest a higher likelihood for choosing non-STEM occupations than boys. In addition, boys showed a higher likelihood of participating in sociopolitical activities in the future. Moreover, girls showed lower well-being and self-efficacy, and higher concerns with social issues compared to boys. These differences contributed to increasing the gender gap in future jobs and political participation, besides the additional influence of socioeconomic status. **Conclusions:** Given the observed differences in adolescents´ attitudes and aspirations for future occupations and sociopolitical participation, interventions are needed in order to equalize opportunities among men and women in society. Understanding factors that contribute to reproducing these inequalities during adolescence, which are maintained into adulthood, will help to reduce the gender gap before these inequalities crystallize.

How Wominar series can raise awareness about gender and foster vocation in STEM

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** EO*GI, webinars, role-models, networking, Women in Copernicus

Gender awareness raising aims at increasing sensitivity, understanding and knowledge about gender (in)equality and challenges, foster their visibility, and mobilize changes. Gender-inclusive curricula in higher education curricula seem to have this effect and raise interest about this topic among students (Grünberg, 2011). Different actions aiming at introducing the gender dimension in research and training were identified (www.plotina.eu;

www.superaproject.eu; www.ge-academy.eu; www.gender-spear.eu). One of them is the inclusion of specific gender modules or lectures in study curricula, which might be especially important in the Curricula of STEM studies due to the well-known gender imbalance in education and the consequent g widening of gender gap in later and higher career positions. (McNally, 2020). For the relatively new fields of Earth observation and Geoinformatics (EO*GI) no systematic assessment of gender-related issues was available. The initiative Women in Copernicus (www.womenincopernicus) tried to partly close this lack of data by the generation of a report (Jagaille et al., 2020) and found out that being a minority is one of the main barriers identified for women working in this sector. An increase of the visibility of female role models and networking possibilities were solutions proposed to minimize this obstacle. When specifically thinking of students and young professionals, creating knowledge about existing networks can be crucial to facilitate exchange, mentorship or examples, thus minimizing potential barriers for them entering the sector. Women in Copernicus therefore designed the webinar series Bridging GI and Space initiatives fostering gender equality to give an overview of existing initiatives and successful networks in the EO*GI sector promoting gender equality and inclusion and showcase womens testimonials as role-models. In 8 webinars the following initiatives were invited to present their portfolio of activities, toghether with women testimonials: Space Women Space Girls, Space4Women, Women in Aerospace, Women in Geospatial+, Geochicas and the Eurogi Women in GI policy focus group. This not only offers the possibility for students in the EO*GI field to get familiar with gender-sensitive topics, but also to get in direct contact with representatives of initiatives, increasing future networking and potential career options. While the webinar is open to the public, participation can also be accredited as part of an elective lecture in the Copernicus Master in Digital Earth (www.master-cde.eu), focusing on geospatial and EO technologies in the context of digitalisation. To evaluate the impact of the participation in the webinar series for the awareness and importance of gender-sensitive topics, 3 questionnaires are implemented, including questions about the knowledge of the current gender-situation, perceived importance of gender dimension and importance of gender-related initiatives. (1) a pre-survey is issued before the wominars to assess knowledge of gender-related topics (2) a second survey is issued shortly after the webinar series to see if engagement with the topic influenced awareness, personal perception, and interest and (3) a third questionnaire is planned one year after the webinar to evaluate possible positive mid-term effects for gender awareness in general, but especially also personal benefits, such as acquiring of new skills, knowledge about education/training opportunities and job postings/offers.

Gender Impact and Confinement in Academia: a study on working conditions, academic time usage and academic production during the Covid-19 crisis at the Complutense University of Madrid

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender equality, academic time usage, COVID-19, gender impact, academia

Under the Horizon 2020 SUPERA Project (Supporting the Promotion of Equality in Research and Academia), a survey on working academic conditions, academic time usage perception and academic performance during the Covid-19 lock-down was conducted at the Complutense University of Madrid (UCM) in June 2020. It was distributed among the whole census of the faculty staff at the university, getting back more than 1500 responses, representing almost 25% of the population. Overall, the results are very clear that female faculty staff experienced a much harder time than their male colleagues during the lockdown. The survey was divided into five main blocks (academic and socio-demographic variables, Working conditions, Academic performance, Uses of time and perception of efficacy and Institutional support) and significant differences were found in all of them. Women experienced worse working conditions, an increase in the dedicated time to both domestic and academic work and felt less supported. All these conditions and gender roles distribution in academia have consequences in the academic performance and production. This oral communication presents the main empirical results of the survey, shedding light on the gender differences in academic time usage perception, already existing before the pandemic and aggravated during the lockdown. Differences that contribute to perpetuating the gender roles that were confirmed and sharpened during the confinement, also regarding the distribution of academic activities. Female academics perceive they spent more time in teaching and students attention (experiencing a drastic reduction in their publications) while male academics dedicated more time to research, writing and publishing. These results are explored in light of further qualitative and participatory analyses that connect them with persistent structural inequalities that can be found at the

university setting. It also discusses possible alternative measures discussed through a participatory process for working with the survey results led by the Gender Equality Nodes Network in the different UCM Faculties.

Integrating the gender dimension of technology into engineering education

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender sensitivity, engineering education, gender and technology

Gender diversity in engineering has been a hot topic for more than a century, and many attempts have been made to attract more women to the field. Between 2013-2020, at least 12 international EU projects, involving 50+ European universities and research centers were carried out with the aim to improve the climate for women in STEM, and many universities have committed to Athena Swan certifications. Despite vast efforts, slow progress (and quite a few backlashes) can be seen. Most of the efforts to diversify the gender balance and reduce discrimination of women in STEM have focused on the working conditions of academic staff. Promotion, employment and publishing bias are some of the discriminatory practices facing academics that have been tackled with various new equality practices, such as bias training, transparent promotion processes and gender equality policies. What has remained more or less intact and unchanged is the content of STEM educations. This is the case even though there is a vast field of research on gender and technology, i.e. the study of the gendered nature and consequence of engineering. While gender and technology exists as a topic it is not mainstreamed: there is the regular technology and there is gender sensitive technology. Fertilizing engineering education with research from the gender and technology field is a way to reach the staff of the university in a more hands-on way, in their own practice of education. It also places focus on technology, rather than the organizational climate, which is a topic closer to engineers research fields. Gender sensitizing the education content (rather than the context) may

provide an alternative way to work with STEM diversity because it does not ask people to assess themselves as agents perpetuating gender discrimination but allows them to keep a personal distance. The gender dimensions in physics, algorithms, city planning, traffic security, etc., include biases and power controversies. Once engineering researchers are able to understand the gender dimension of technology, they are potentially more ready to understand the gender dimension of their own organization: the academy. Integration of gender and technology studies into the engineering education is the process investigated in this paper. The data is collected in a series of workshops where teachers at a university in Sweden work to incorporate gender and technology research into their courses in other engineering fields. The struggles and challenges of teachers are analyzed through an ethnographic approach: their work is observed as it is carried out in the workshops and closely related activities. Theoretically, this study uses tools from feminist organizational studies combined with boundary work (Gieryn, 1983; Liao, 2016): a method of analyzing what people do in order to change existing practices or power relations and jurisdictions. This makes it possible to study how through doing a new practice, the opposite practice can be undone (Van den Brink & Benschop, 2012). The goal is to understand how gender-and-technology aspects are integrated in the engineering education in order to find ways to make engineering education more gender sensitive.

The pandemic impact on women's career in Academia: A wake up call to rethink productivity

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Pandemic, productivity, neoliberal academia, inequality

The Covid19 outbreak has unveiled the longstanding gendered inequalities in the academia. Due to the shift of academic activities to virtual platforms, the boundaries of time and space between the private and professional spheres became more blurred, resulting in a more unbalanced division of home labour including childcare and house duties between the sexes (Schiebinger et al., 2008), with women devoting even more time to household and care work. Preliminary studies have shown how the pandemic is tanking women's research productivity,

assessed using conventional neoliberal indicators of performance, such as paper submissions to scientific publications and preprint servers, grant applications and new research projects.). In the context of the neoliberal academia (Slaughter & Leslie, 2001), publishing in indexed international journal is seen as the main goal of academic work (Pereira, 2020), hence a decrease in the standard productivity is highly detrimental to scholars career, fostering loss and hindering the tenure and/or promotion for early career women (Cardel et al., 2020). The gender blindness of higher education institutions and research centers minimizes the unequal impact of pandemic on scholars, thus women were expected to continue to conduct research, teach, and carry out their administrative duties from home normally. At the same time, the tendency to delegate to women most of the academic service and the emotional work to take care of students well-being (Cardoso, 2017; Guarino and Borden, 2017) was exacerbated, without offering them any extra support to continue their research agendas. In a long term, this gap in knowledge will affect social and health policies to deal with the pandemic aftermath. Analyzing the literature on work-life balance, care work, emotional labour and intersectionality within neoliberal academia, we examine how the pandemic has significantly undermined much of the advancement achieved towards gender equality in research and innovation. Drawing on new empirical evidence gathered from mixed-methods research, based on a survey, 15 in-depth interviews and one focus group with academic women in Portugal, we show how the so-called advances towards gender equality in academia were sustained by a fragile work-family balance arrangement supported both by the state and universities, and at the same time by an active disregard of scholars holistic wellbeing. Our results adds to the existing literature on gender gaps in academia by arguing that the responses to recent health crises within academia indicates how womens particular needs and vulnerabilities continue to be regarded as a minor issue, in spite of the growing popularity of gender equality plans. Furthermore, it points out how traditional productivity indicators might not be suitable for evaluating womens academic productivity during (and after) the pandemic, calling for a more integrated and fair evaluation process.

Gender Equality Policies in Higher Education and Research: Best Practices and Future Challenges of the Women in Science Committee of Catalonia

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INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender equality policies, Gender Equality Plans, gender mainstreaming in university teaching, gender-based violence

Presentation Since 2005, the Women in Science Committee (WSC) of the Inter-University Council of Catalonia (CIC) has been working to put gender equality as an strategic and central role on the agenda of universities and research centres. This communication wants to present some of the most significant actions, focusing in the recent ones. **Women in Science Committee[i]** The CIC is the coordinating body of the Catalan university system, and of consultation and advice of the Government of Catalonia in matter of universities. The WSC is a pioneer as a committee in the higher education system, with all the Catalan universities represented (12), 1 representative of the CERCA centres (research centres in Catalonia) and involving different governmental agents such as the Catalan Womens Institute or the University Quality Assurance Agency (AQU-Catalunya), among others. The main function of the Committee is to advise and inform the Council on the effective equality of women and men, in the fields of university teaching, research and management, as well as for the development of women's policies in the field of higher education and research Some of the main actions developed by the Committee[ii] are: Equality Plans: The Committee has taken on the role of promoting and coordinating the process of implementing Equality plans within the Catalan university system and, at this time, most Catalan universities have already implemented their second Equality Plan, or are rolling out their third one. Accorded system of indicators to measure the situation of women at universities and research: One of the Committee's most recent and ambitious projects has been agreeing on a System of indicators to assess the situation for women in universities and research centres comparable on a European level. Gender mainstreaming in the curricula: One of the milestones of the catalan Equality Act (17/2015), which is a novelty in European universities, is the mandate to

universities, when presenting a new Degree to be evaluated by the Quality Agency for accreditation, must prove how it has incorporated gender mainstreaming in the curricula. With the advice of the Women in Science Committee, AQU-Catalunya set up an Expert Commission to draw up the General Framework for the incorporation of the gender perspective in university teaching[iii] which is a reference at an international level, recognised as a best practice by EIGE. To launch and move forward with this objective, the Catalan Government has launched in 2019 a new important Award to recognise and give visibility for Best university teaching practices from a gender perspective, named Mª Encarna Sanahuja Yll Award[iv] Violence against women: Several actions developed by the Committee in this area, as the interuniversity agreements signed between all the Catalan universities to facilitate the free change of university for undergraduate students who are victims of gender-based violence and their dependent children, and in cases of sexual harassment (as mandate in the recent Catalan law 17/2020 about the right of women to eliminate gender-based violence).

[i] https://dogc.gencat.cat/es/document-del-dogc/index.html?documentId=824932

[ii]http://universitatsirecerca.gencat.cat/es/03_ambits_dactuacio/ciencia_i_societat/dones_i_ciencia/index.html [iii] https://www.aqu.cat/doc/doc_21331700_1.pdf [iv] https://portaldogc.gencat.cat/utilsEADOP/PDF/7911/1752322.pdf

Challenges and potentialities of implementing a gender equality plan in Open and Flexible Higher Education Institutions (OOF HEIs): the case of Universitat Oberta de Catalunya

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↳ **Keywords:** Gender Equality Plans, online teaching, open and flexible higher education institutions (OOF HEIs)

One of the most dramatic transformations of the 21st century has been the intensive development of digital materialities and the consequences they pose for traditional conceptualisations of institutions and organisations. Additionally, the Covid crisis has pushed most of higher education institutions into the digital path. In this presentation we reflect on what specificities, challenges and potentialities do face Open and Flexible Higher Education Institutions (OOF HEIs) when dealing with gender equality policies. To do it we focus on Universitat Oberta de Catalunya (UOC). We use, as empirical data, the process of designing and implementing UOCs new Gender Equality Plan 2020-2025. Through an analysis of this process, we present specific challenges caused by digitalisation and the impact they have for gender equality. For example we address online forms of

discrimination and harassment, digital strategies for counselling for harassment victims, asynchronous online teaching and the existence of overlapping legislations due to the multiple physical location of its students and staff. The presentation is situated at the intersection of the debates around gender equality plans and the digitalisation higher education institution. It aims to highlight that most of academic literature and policy protocols addressing gender equality in Higher Education Institutions have overlooked at the specific needs of these type of institutions who are becoming crucial innovation hubs for gender equality policies in a digital age.

Setting-up Gender Equality Plans in Academia: Challenges and opportunities of defining SMART objectives and guiding targets for the University of Tirana

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender Equality Plans, higher education institutions

This paper addresses some of the challenges and opportunities encountered in the process of setting- up gender equality plans for the University of Tirana, Albania with particular focus in the definition of SMART objectives, guiding targets and respective measures. Based on the results of an initial assessment of the situation of our institution in terms of gender equality, we were able to detect gender biases in existing policies and practices within our institution and we were challenged to spot critical areas for improvement and intervention.One of the objectives set by the European Commission for Gender Equality Plans in research organisations and higher education institutions is the identification and implementation of innovative strategies to correct gender biases including SMART objectives and clear targets. The main gender gaps identifed so far at the institutional level are: 1. Mission and vision of the institution are not gender sensitive. 2. No structures in place to promote and to enforce gender equality. 3. There has been no attempt so far, neither at the main unit level nor at the basic unit level, to develop the Gender Equality Plans and to use the different tools of Gender Responsive Budgeting. 4. Gender aspects not included in

systemic way into research work. Very few articles focus on gender equality analysis and/or take into consideration the gender impact. Some of the objectives included in the initial phase of setting-up a Gender Equality Plan in the University of Tirana were:1. Promoting the creation of dedicated structures to support gender equality work at the institutional level. 2. Gender equality perspective introduced in the strategic plan of UT 3. Greater equality perspective on the distribution of research resources at university level 4. Promoting a gender perspective in Research processes This paper is a critical reflection on the most effective measures to achieve these objectives in our institution and also on the challenges and opportunities that the whole process would bring for the University of Tirana.Our analysis reveals that there are a lot of challenges in setting-up Gender Equality Plans in higher education institution starting with the lack of understanding of gender equality and Gender Equality Plans, misperceptions, resistance, lack of institutional authority and mostly lack of relevant data and statistics.

Teaching Gender Studies at a Technical University during the COVID pandemic

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GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Gender in teaching, didactic, methods

Over the last 20 years Gender Studies have become part of the curricula also at technical universities. Most of the universities have implemented gender studies lectures as a noncompulsory or an elective course (Wahlfach). Some studies, such as Architecture at the Vienna University of Technology provide a compulsory course. The Johannes Kepler University in Linz with its various faculties (law, social sciences,) has an outstanding position in Austria: Gender Studies as an compulsory class is implemented within all faculties and also at the facility of science and engineering that means all alumnae and alumni had taken a course on gender studies and technology and engineering for at least 3 ETCS (European credit transfer and accumulation system) during the course of their studies. Since 2005 the author has held various teaching assignments (seminars and lectures) at different universities in Austria in the field of gender studies and engineering.

The presentation will reflect on the experiences gained and will provide an overview how the lectures have been restricted due to the COVID-pandemic.

Valuing Invisible Academic Labor through Promotion and Tenure Criteria

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Promotion, tenure, academic housekeeping, invisible labor, academic service

As part of a larger cross-institutional project around identifying, measuring, and rewarding academic housekeeping in Swedish technical universities, this paper presents findings from an in-depth study of an Architecture and Civil Engineering department where a 10-year, university-wide gender equality initiative is in progress. Women are disproportionately responsible for low-status tasks that can have negative effects on their retention, performance, and pay in academic careers (Kalm, 2019), including activities that fall under the category of service work (Guarino & Borden, 2017) and how these tasks are valued as part of promotion and tenure (Rosser, 2007). This study takes promotion and tenure criteria as a point of departure for identifying academic activities that are unvalued, undervalued, or poorly defined. I conducted in-depth interviews with twenty faculty members from among a cross-section of positions and a range of seniorities in order to create a typology of activities and in this paper, I focus on the categories of academic service and Ph.D. supervision. In-depth interviews allowed me to cast a wide net for activities, understandings, and terminologies to inform survey development project that will be used across departments at the university. To that end, this paper shares not only findings from my department but also methodological insights into the creation of a replicable tool that will help provide an empirical basis for the revision of promotion and tenure guidelines to promote gender equity. Members of minoritized groups (including women, but also those marginalized on the basis of race and ethnicity, national origin, and sexuality, for example) stand to gain from the formalization of invisible academic labor, as will the academic community as a whole.

Guideline Do's and Dont's while degenderising the STEM field

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Support, STEM, gender equality

The guideline Do's and Dont's while degenderising the STEM field was developed by the GEECCO-project, a H2020-funded project. GEECCO aims to establish tailor-made gender equality plans (GEPs) in four European research performing organisations (RPOs) and implement gender dimension in research programmes in two European research funding organisations (RFOs) with a strong focus in funding technology related and applied research on a national level. All GEP-implementing partners are located in the STEM (Science, Technology, Engineering, and Mathematics) field, which is considered to be a core technological underpinning of an advanced society supporting innovation and economic growth. The STEM field is characterised as follows: Lack of knowledge from social sciences, gender studies, organisational science Strong belief in meritocracy where gender and social disadvantages are not acknowledged. Severe underrepresentation of women Science culture is strongly oriented on attendance culture, excessive working hours, exclusive interest, and constant availability. Strong stereotype about Men are technically/scientifically gifted. Women are not at all. Science positivism approach: There is one problem and thus just one solution. Aversion to qualitative methods The guideline is built on the results of the four-year project and the insights gained from integrating gender equality dimensions and from developing tailor-made Gender Equality Plans (GEPs) for the four universities. These are Technische Universität Wien (TUW) (Austria), Universitat Politecnica de Catalunya (UPC) (Spain), University Mediterranea of Reggio Calabria (UNIRC) (Italy) and Politechnika Krakowska (PK) (Poland). The experiences and insights gained are documented in deliverables and reports, in (internal) project resources such as minutes of project meetings and advisory board meetings, in documentations of help desk sessions (RPOs with supporting facilitating partners). These project-related (informal) sources are supplemented with further information such as reports and publications by other H2020 funded structural change sister projects, and other resources from the body of literature. The aim is to pick out learning effects from the experiences at the four research performing organisations

(universities) and the two research funding organisations involved and make them transferable and applicable to other organisations, especially from the STEM field. In general, this guideline aims to summarise tips and recommendations when implementing gender equality actions and measures in the STEM field and shall provide practical guidance to other RPOs and RFOs who aim to integrate gender equality in their institutions. The document addresses both employers and employees at various hierarchal levels and with different responsibilities but all with one joint mission: to foster (more) gender equality and to integrate gender dimensions in their organisations. The oral presentation will provide an in-depth view on the guideline and will present the first results when implementing the Dos and Donts in the STEM field.

Thinking Gender/Genre: Canons Review through Female Writers of Fantastic Literature

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↳ **Keywords:** Gender/genre, female authors, reverse reading, Western canon

The aim of this paper is to offer the main results of the teaching innovation project "Thinking gender/genre: a review of the canon through female writers of fantasy literature", developed at the University of Alcalá during the 2020-21 academic year. We have pursued the feminization of the Western canon in Literature courses, connecting students with the living creation of female writers who practice a most stimulating and motivating genre: the narrative of the unusual. We have linked two student groups of the Master of Arts in Hispanic and Cultural Studies at University of Alcala ("Themes and motives of literary and cultural history", in the first semester, and "Literature, society and power", in the second semester) with the transfer activity Fantásticas e insólitas. II Cycle of meetings with the female writers of the fantastic, which brings together eight writers from Spain and Latin America. Students of the subject "Comparative Literature: Modernity and Postmodernity", from the MA in Comparative Literature: Literary and Cultural Studies, at the Autonomous University of Barcelona, and students of the Degree in Comparative Modern Cultures, at the University of Torino, have also participated in the project.In addition to providing female

authorship readings to our students, the project has sought to create new interpretive frameworks that help to review canonical themes and motifs of the fantastic from gender perspective. To do this, we have applied the theory of the inverted class and we have followed this work pattern:(1) Reading of a theoretical text in order to offer a theoretical framework + participation in the forum.(2) Reading of a work (novel or volume of stories) by the invited author, taking into account the theoretical framework previously worked on + participation in the forum.(3) Reverse Reading (RR): reading of a canonical fiction text, authored by men, revisited and reinterpreted from the previous readings (1) and (2) + participation in the forum.(4) Synchronous discussion session through the Blackboard Collaborate online platform + preparation of the dialogue with the invited author.(5) Meeting and dialogue with the author in online format.Our paper will enquire about the achievement of the objectives set and will present the most relevant results, with a view to integrating them into the Literature programs both undergraduate and graduate.

Lawgem Project: Gender and law master's studies and attitudes towards gender in academia

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender maintreaming, master's degree, legal professions, academia, gender attitudes

Lawgem Project is an Erasmus Plus KA203 projects: New Quality in Education for Gender Equality Strategic Partnership for the Development of Master`s Study program LAW AND GENDER. The members of the consortium implied are Libera Universita Maria SS. Assunta di Roma, Department of Law Lumsa University Palermo, Italy, Orebro University, School of Law, Psychology and Social Work, Sweden, Universitat des Saarlandes, Faculty of Law Europa-Institut, Germany, and Universidad de Cadiz, Spain. The objectives of this collaboration is to build a fully innovative systemic curriculum of master legal studies, which will encompass all relevant fields of legal education and legal practice, as well as non-legal relevant fields. At the same time, it aims to develop a Law and Gender master`s programme to reconstruct the traditional legal education both in positive law disciplines and those disciplines which are usually seen as more multi-disciplinary, like economic analysis of law, criminology, social

and psychological fields of research and knowledge. We will present two of the main outputs of the collaboration of the five universities represented in this project, despite the difficulties that have arisen as a result of the pandemic: First, the curriculum of the Master in Law and Gender. We describe the overall terms and the structure of the syllabus in the masters degree program. And second, a survey on the attitudes towards gender conducted on each participant university. The overall aim of the survey was to investigate and map conditions and attitudes towards gender equality in academic institutions involved in the project. We will briefly describe the comparative results obtained and specially, Cadiz University results.

Comparative analysis of the academic career of accounting teachers at the spanish public university

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Academic career, accounting, gender

Academic career is a promotion process that is achieved through the achievement of a series of milestones to become hired professors. In the Spanish Public Universities this career is prolonged in time since, on average, an academic in Accounting achieves the chair in 15 years after it obtaining the doctorate, and it usually generates differences between those developed by women and men. Empirical evidence shows differences between the academic careers of men and women. Women continue to be underrepresented in the highest ranking category, and there appears to be what has been interpreted in academia as leaky pipe (Auriol, Griebel & Wilhelm, 2019; Lundberg & Stearns, 2019; Bayer & Rouse, 2016). In other words, throughout the academic career, women suffer greater wear and tear than men and, furthermore, this gap has persisted over time. Causes that explain the different speeds of the academic careers of men and women continue to be widely discussed in academia. There are studies that explain gender differences in academic careers due to the effect that motherhood has on it (Gallardo, 2021; Huopalainen & Satama, 2019; Toffoletti & Starr, 2016;

Ginther and Kahn, 2006), others it show that inequalities are mainly driven by the existence of male-dominated networks on the editorial boards of Italian economic journals (Blau et al., 2010) or on the scientific committees of Economics associations (Hospido and Sanz, 2019). Institutional factors such as selection procedures within academic departments and faculties have also been analyzed (Crabtree & Shiel, 2018; Bagues et al., 2017; Ceci et al., 2014; De Paola, 2016) or public selection procedures (Bosquet et al., 2019; Marini & Meschitti, 2018). Research has attempted to explain gender biases through differences in the areas of scientific research and production (Ginther and Khan, 2004; Lee et al., 2013, Baccini et al., 2014; Zacchia, 2017; Chavance and Labrousse, 2016 and Corsi et al., 2018) and in assignments of tasks at work (Ivancheva, Lynch & Keating, 2019; Vesterlund et al., 2015). Evidence seem to show that the origin of gender inequality in academia is due to a multitude factors and the aim of this this study is to analyze whether in Accounting area of the Spanish public university the probability of reaching tenure and professor is different depending on gender, at what career milestone the leak of female talent begins and, finally, what family, institutional and research production factors explain it. We have collected through a survey the data of 353 scholars of the Accounting area of the Spanish public universities from 1959 to 2019. We use longitudinal analysis and probability models to explore promotion time and its possible explanatory variables. Our results indicate that the academic career of men and women is similar until reaching tenure but, nevertheless, the probability of women will become to professor decreases strongly with respect to men, it significantly reducing the number of women professors compared to men professors. Likewise, motherhood is one of the most relevant factors that can explain this gap.

POSTERS

The struggle to attract, hire and retain more women professors at a cooperative state university in Germany

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender equality, diversity, female professors, attraction and retention of female talent

Our state university faces an gender gap in the top-most positions of our university. We have less than 20 percent female professors and less than 10% professors in management positions.To change that, we have been using a wide array of different methods and tools for the last two-four years that I would like to present via a poster:- Active recruiting via networks- Fempower your future how to make qualified women apply at our university- Sharing contacts of female lecturers in order to make it more common to have women lecture- Networking activities for our female professors in the regionLunchesMeetings with topics of common interestStakeholder involvement- University for Kids make our university more accessible to the young generation- Emergency day and night care to be used in case of urgent travel and / or sickness- STEM mentoring: students go out to schools to attract and mentor female students- Diversity seminars for our almost all-male leadership, etc.I would like to present our efforts, the struggles we had to go through and the results.

Achieving gender equality in Research Performing and Research Funding Organizations operating in the agricultural and life sciences research field

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GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Gender, agriculture, life sciences, GEP, research, education

Gender-SMART is a community of 7 European Research Performing Organisations (RPO) and Research Funding Organizations (RFO), operating in the broadly framed field of research in food, agriculture and life sciences, supported by two technical partners with ample experience in this area.This scientific field, essential to humankind and strongly affected by gender biases, is of specific relevance to implement changes aiming at making research more open to societal challenges ; Are women less capable in managing crops? Feminist Economics (Wang and Fok, 2016). As some of Gender-Smart partner organizations combine this focus with development research (Agricultural Research for Development or AR4D), the project is at the crossroads of two fields of interest that devote attention to gender issues: on the one hand, research on development that has increasingly emphasized the gender dimension, and, on the other, agricultural research with a growing proportion of women.By involving research organizations working in the fields of agriculture and life sciences, Gender-SMART not only aims to support gender equality at each partner organization, but also to integrate policies fostering the incorporation of the gender dimension into the content of research, knowledge transfer and innovation. Gender-SMART has three operational objectives to be pursued:1. Implementing seven fully-fledged Gender Equality Plans (GEP) designed around four common challenges :- Building a Gender Equality Culture; - Developing Equal Career Support Measures; - Reshaping Decision-Making and Governance; - Integrating Gender in Funding, Research and Teaching.2. Change is steered beyond the projects timeline. It will be ensured that GEP transformative strategies and actions:- Are co-designed with the participation of the internal target audiences, to create awareness, consent and ownership;- Are made easily visible and accessible to the internal target audiences and to a broader community;- Benefit from the public commitment of the

top management;- Are integrated and institutionalized to the greatest possible extent in the existing procedures, schemes, strategic documents and institutional frameworks of the partners.3. Lessons learnt and good practices are disseminated within and beyond the Academic world and Europe by better addressing the needs of men and women and preventing gender biases in designing, implementing and disseminating research, notably through education. Gender-SMART aims to build a gender equality culture within each of the partner organizations. An organizations culture is comprised of the beliefs, values and norms of behavior that are shared by the people within the organization.One of the outputs of the Gender-SMART project is to develop gender values for each organisation. With regard to the process of developing corporate values, Lencioni (2002) suggests the approach to developing values should not be an organisation-wide consensus building approachGuidelines have been developed to assist each partner in carrying out the culture and values audit and in designing appropriate gender equality core values and behavioral statements for each institution through a participatory approach.GENDER-SMART developed guidelines to assist each partner in carrying out the culture and values adit and to assist in the design and development of appropriate gender equality core values and behavioural statements for each instittion. A participatory approach was proposed for carrying out the audit and developing the gender equality values.

Gender Distribution in Industrial Engineering Studies in a North-Western Spain University

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** Gender, industrial engineering, industrial technologies, chemical engineering, STEM

Low gender diversity is regarded as a relevant problem in the technological sector, in which male predominance is usually observed, especially when high level and executive positions are considered. Also, frequent abandonment of employment by women has been reported. In recent years, special attention has been paid to the presence of women in STEM studies,

and a number of actions have been set in motion to promote equal recruitment of students in these areas (Botella et al, 2019). Although some studies have been published examining gender ratios in engineering degrees, there is still very little information available for Industrial Engineering, one of the most traditional engineering fields, which is also in high demand. In the present work, an approach to the analysis of gender distribution in the studies of Industrial Engineering at the University of Vigo, in North Western Spain, has been undertaken. Gender ratios in two different degrees (BEng in Industrial Chemistry and BEng in Industrial Technologies) have been compared, both regarding students and teachers. A clear majority of men was found to compose the teaching staff involved in both degrees, with a greater incidence in the two first years, and the degree in Industrial Technologies. Moreover, the differences become even more remarkable when positions of responsibility related to course coordination are considered. The data appear to confirm the underrepresentation of women in positions of responsibility, from which they can act as referents for students.On the other hand, the analysis of students enrollment and rates of success, indicated pronounced differences between the two degrees. While the percentage of women enrolled in BEng in Industrial Chemistry exceeds that of men (around 60:40 ratio), the exact opposite occurs in BEng in Industrial Technologies (around 25:75 ratio). However, the academic performance appears to be better for women than for men, regardless of the degree. These tendencies are consistent with other data reported for the selection of engineering fields of study in other countries (Rouyendegh & Can, 2012).The relatively low presence of women in the field of Industrial Engineering can be attributed to several causes: feelings of insecurity about how to deal with a work environment traditionally dominated by men, fear of being undervalued and considered weak, lack of female referents and mentors in the professional career, etc. Therefore, it seems logical to propose actions the can be carried out at the University level to try to reduce the impact of this situation. Cross-cutting activities for students could be planned, oriented towards the promotion of leadership and critical thinking, personal development and the enrichment of communication skills. The organization of conferences that facilitate contact with professional female engineers or other women in leadership positions would also be of great interest. These measures should be implemented by also integrating male students, to avoid frustration and discrimination feelings, as well as to promote awareness.

Advancing gender mainstreaming in Academia, Research and Innovation: A glance from Italy

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** GEP, RRI, disaggregated data

The role and influence of EU research and policies toward gender issues brought relevant impacts on universities and research organizations.Notable outcomes have been the commitment of many universities and some R&D structures on setting up or improving a gender balanced participation that was practically unknown twenty years ago, and the growing interest in engendering science, stemming from health and medicine to embrace technology and environment, coping with sex/gender analyses of data and processes.Progresses have been made, but there is still huge room for improvement, according to awareness and policies which are different in different countries.In this scenario, the Associazione Donne e Scienza DeS (Women in Science www.donnescienza.it) is a non-profit cultural organisation whose members are women scientists working mostly at Higher Education Institutions and Research Organisations in Italy. DeS has been one of the founding associations and is still member of the European Platform of Women Scientists EPWS (epws.org).DeS and its members have been and are active in the definition of Gender Equality Plans (GEP), as a direct result of their involvement in EU Projects to promote structural changes such as GENERA (https://genera-project.com/), GenderTIME (https://gendertime.org), PLOTINA (http://www.plotina.eu/) or R&I-PEERS (http://ripeers.eu/). Some of them are active in the GENERA Network, as well as in other EU Projects, such as GRECO (www.greco-project.eu), to implement open science and responsible research and innovation (Rubbia, 2019). The role of DeS members vary form participation in advisory boards to active involvement as beneficiary.In these years, DeS initiatives included the organization of annual conferences and events, both at national and international level, on crucial themes that gathered issues from different perspectives and audiences, including education, sexual harassement (Avveduto et al. eds, 2019), environment and climate changes, shaping the scientific and societal debate with a gender perspective.The proposed poster is intended to present the results of the analysis of the

relevant issues emerged, the needs and aspirations from women scientists in Italy (Avveduto, 2019) and on-going activities both on structural change and gender dimension in science and technology in a European perspective.

Evolution of women participation at Universidad Politécnica de Madrid - is something changing?

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APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

↳ **Keywords:** STEM gender gap, high education gender statistics, engineering education, UPM

Universidad Politécnica de Madrid (UPM) is one of the four largest technical universities in Spain. It offers undergraduate and postgraduate programs and hosts research activities in all engineering branches, from agroforestry and biomedical to civil, industrial and communications engineering. As it is common in high education institutions dedicated to STEM, UPM suffers a notorious gender gap. There is a large gender gap in the student population, with 35% of matriculated students being female, and there is an even larger gap in the participation in research, where only 22% of the staff are women (data of 2015, from [1]). Moreover, the research career at UPM shows a thick glass ceiling, with a glass ceiling index (GCI) of 2.22 (2015). In the last decade, UPM has made an effort to understand the factors that perpetuate this gender gap and improve the situation, publishing several statistical studies [1,2] and putting in place a Gender Equality Division and a Gender Equality Plan. Despite this, the number of female students and women that succeed in the research career or reach a permanent teaching position do not seem to have grown at a significant pace in this last decade in most disciplines. Strikingly, many indicators show virtually no progression and in some of them there has even been a regression. For example, the percentage of women in the total of awarded PhDs was the same in 2007 and 2016, around 24%, and the percentage of postdoctoral researchers decreased from 38% to 29% in the same period [2]. Also, the percentage of women within the students graduating at UPM was an unchanged 35% in 2003 and in 2015. On

the upside, some important indicators have improved, especially among those related to senior positions. The percentage of female full professors, for example, has grown from 6.2% in 2003 to 11.9% in 2013 (GCI 2.35) and 13.4% in 2015 (GCI 2.22). The authors of this abstract have strong experience at UPM and have been in different time periods and extent, undergraduate students, researchers and professors at this university. In this work, we will analyse the statistical data of female participation at UPM from [1,2], updating them when possible with more recent data provided by the UPM Gender Equality Division. We will discuss possible factors that perpetuate the gender gap at UPM, focusing on the situation of female students and younger female staff and comparing the situation with the general context of high education in Spain and Europe through recent reports, such as [3]. We will introduce in the discussion the perception of female students and workers that we have gathered through our own experience at UPM, focusing on the proposal of new ideas and perspectives from this community.

Exploring student teachers' competence for gender equality practice: A case study in Spain

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender equality competence, preservice teacher education, self-efficacy beliefs, measurement instrument, Spain

Gender equality (GE) has been a worldwide mission since some decades ago. Spains efforts in promoting gender equality began in the 1980s, and as a signatory of the 1979 UN Convention, the Goverment of Spain formally established a number of legislation policies. One of the most influential has been Organic Law 3/2007 on Effective Equality of Men and Women, which forces universities to train future professionals to become competent in gender issues by mainstreaming gender in course content and programs (Art. 24, Point 2). To become competent in gender issues it is essential to generate educational processes that favor the acquisition of knowledge, skills, and attitudes/values towards gender awareness. This kind of competence is not learned automatically, but

requires a systematic teaching process that helps to make the consciousness move from stereotyped modes of conceptualization to compromised modes going through the intermediate stages of blindness and gender sensitivity (Rands, 2009). Unfortunately, research suggests that student teachers finish their training period without adequate GE competence preparation (Pendergast et al., 2011). Bearing this in mind, measuring GE competence is increasingly demanding at all levels. Teacher self-efficacy has been measured using various instruments and scales (e.g. Gibson & Dembo, 1984; Tschannen-Moran & Woolfolf Hoy, 2001). Although consensus has not been reached about its composition and nature, there seems to be unanimity in that they have to be specific to the construct and multidimensional. Since no specific instrument that measures teacher competence for gender equality has been found in the literature, this study addresses this gap. The study reports on the development and initial testing of a scale designed to measure teacher efficacy for gender equality practice. Based on the theoretical foundations of Rands (2009) and on Bandura's sense of self-efficacy in completing a task (1977), its purpose was to construct and validate the Teacher Efficacy for Gender Equality Practice (TEGEP) scale. The study aims, first, to explore and confirm the dimensional structure of the scale and, second, to learn about the actual level of preservice teachers GE competence at the end of their study programs. Six-hundred and one kindergarten, elementary, and secondary student teachers enrolled in their last year of study at a higher education institution in Spain, representing the cohorts of the year 2017-2018 were surveyed to validate the scale. They were asked for their consent to participate, after permission were gained from the institution and the instructors. Respondents anonymously and voluntarily completed the survey at the beginning of one of their classes during second semester. Response rate was 79%. The sample consisted primarily of female teachers (84%), mean age of 21.44 (SD = 4.10), most of them Spanish (97%). According to exploratory and confirmatory analyses, a scale composed of three sub-dimensions (Efficacy in Gender Knowledge, Efficacy in Practicing a Gender Pedagogy, and Efficacy in Sensitivity and Compromise) explained 55.84% of total variance and 23 items was achieved. Results will be discussed in terms of identifying needs for gender equality competence development as findings can be in clear demand for change.

Gender inequalities in attitudes towards prostitution among university students

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Inequality, prostitution attitudes, university students

Inequalities between female and male rights are related to sexist and gender violence as a reality worldwide. These inequalities are aggravated when, being a woman, a situation of prostitution is added. The prostitution system is a form of violence against women, violating fundamental rights of equality, right and respect for human dignity Brufao, 2008, Barahona, 2015). However, general population continues to believe that men use prostitution to «satisfy sexual needs» and that women are prostituted because they «like it», «economic reasons, money or luxuries» (Torrado, Romero y Gutiérrez, 2018; Meneses, Rua y Uroz, 2018). The work presented is part of a broader project to assess attitudes and beliefs about prostitution in different population groups, to aim guidelines in awareness campaigns and change of attitudes towards inequality and violence against women. The objective of this work has been to explore beliefs towards prostituted women either of men and women within the university environment. 121 university students participated, 82.6% were women and the rest were men with a mean age of 21.5 years (Standard deviation: ±4.7; Range: 19-49). They completed information on sociodemographic data and the scale of Attitudes towards prostituted women and prostitution: Scale of Attitudes towards prostitutes and prostitution (Attitudes Toward Prostitutes and Prostitution Scale Levin y Peled, 2011; Adaptación Cultural de Brotons Rodes, C, Martin-Aragón y Terol., 2016). The results show mean scores that indicate neither agree nor disagree on whether prostitution involves a violation of the dignity of women (M = 3.50 ± 1.3), if it is forcing unwanted sexual behavior (M = 3.57 ± 1.1), or a form of violence against women (3.58 ± 1.2), or show disagreement regarding considering prostitution as a violation in which the victim is paid (1.45 ± .76). These results underscore the importance of researching and implementing specific intervention strategies on gender equality, eradicating contexts of marginalization and vulnerability of women maintained by a sexist and patriarchal culture, of toxic male domination and an accomplice to the sex trade «(CATW, 1991 ; 2020)

Forced reforms, mixed results: Gender inequalities in STEM fields of French higher education since 1998

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POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender inequality, STEM fields, reforms, France

In France, despite the opening of training courses to both sexes, girls and boys continue to make their choice of orientation according to what society attributes to them as a field of competence (Duru-Bellat, 2004 ; MEN, 2012). This prevalence of stereotypes implies self-censorship of girls in both scientific and prestigious training (Blanchard et al. 2016) so much so that the entry of women into engineering schools is described as a respectful revolution (Marry, 2004). Baudelot and Establet (2007) consider that countries that would orient boys towards literature and girls towards engineering training must be invented (p109). As early as the 1980s, in partnership with the National Center for Scientific Research (CNRS) and the MIPADI (Mission de la Parité et de la lutte contre les discriminations) of the Ministry of Higher Education and Research, «Women and Maths» and «Women and Science» associations were created in order to fight against girls disaffection for scientific courses; «Women Engineers» association, created in 1982, has a twofold mission: to promote the engineering profession among young girls and to promote women engineers and scientists in the world of work. In March 2000, one of the main objectives of the Lisbon Strategy was to increase the flow of people into scientific and technical studies by at least 15% and to reduce the gender imbalance in these fields. In addition, several decrees propose to improve professional equality and set up Missions for Parity and Equality. At the same time, there is a growing desire to promote women's research. Thus, in 1998, the L'Oréal-UNESCO Foundation for Women in Science was created, which annually rewards the excellence and talent of women scientists. In 2001, in order to promote the place of women in research and technology, the Ministry of Higher Education and Research created the Prize Irène Joliot-Curie. As of 2011, the Mission for the Place of Women of the CNRS has set up European and international partnerships to encourage professional equality between women and men in research institutions and to promote the integration of the gender dimension in research content. These measures seem to be bearing fruit: since 2012, gender became a priority axis

of two ANR programs. Thus, the aim of this work is to determine whether these measures have really led to a reduction in inequalities between girls and boys in French higher education STEM fields. To do this, we use a logistic model to analyse the influence of gender in access to scientific training between 1998 and 2013. We estimate the probability of access to the various courses (selective courses, STEM fields, engineering degrees) according to the individuals characteristics (gender, social, cultural and geographical origin). Our results are twofold: 1) despite a decrease in inequalities, access to selective courses and engineering degrees remains highly gendered and 2) there has been an increase in inequalities in access to STEM fields. So, despite many rules in favour of equality between girls and boys at school, «co-education remains an unfinished conquest» (Leroy et alii., 2013, p. 9).

Gender equality in preservice teacher education in Greece

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GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender equality, pre-service teacher training, gender mainstreaming, teacher education curricula, Greece

Background: Gender equality (GE) refers to the equal value of women and men in all spheres of life and is a fundamental human right (UN, 1948), essential to achieve peaceful societies and sustainable development. The United Nations have adopted measures to promote GE highlighting its importance in the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW, 1979) and the Beijing Conference on Women (1995), integrating gender mainstreaming strategy at all stages and levels of policies and programs. Furthermore, the United Nations in the 2030 Agenda Framework (UN, 2015) proposed the Sustainable Development Goals (SDGs) including gender equality as a priority. The European Union has become a pioneer in the development of GE with the Nordic countries (e.g. Sweden) being leaders in its promotion, and with Greece occupying the last position in the Gender Equality Index (EIGE, 2020) despite its legislation and remarkable achievements on the issue. Although gender mainstreaming (GM) is a mandatory requirement in Greece, at university teaching level most subjects appear gender neutral. Plans or strategies for GM in the curricula do not exist and GM is not considered a

priority. The current study aims to explore the status of GM implementation in university teaching in Greek higher institutions using the SAGE (Sensitive Assessment for Gender Equality) index. **Method:** The participants (N=637) were all 4-year undergraduate students of primary education, from eight Greek public universities (academic year 2018-2019), aged M = 22.02, SD = 2.34, mostly females (88,2%) and Greek (98%). They participated in an online survey via email or Facebook. Only 34% of the respondents had already received previous training in gender issues. The SAGE index used in this study was the revised version (Miralles-Cardona et al., 2020) composed of 18 items distributed in three factors: Institutional Sensitivity to Gender Equality (5 items), Mainstreaming Gender into Curriculum (7 items), and Awareness of Gender Inequalities related to instruction and learning (6 items). The items are answered on a six-point Likert scale ranging from 1 (Totally disagree) to 6 (Completely agree). **Results:** The factorial analyses (EFA and CFA) performed with IBM SPSS 25 and AMOS 23 provided the same three factors structure with only 16 items, which together accounted for 61.34%% of the variance. Goodness of fit of the 16-item model was assessed using several indices: c2, c2/df, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA). The different indices showed that the scale fits adequately with the three-dimensional model. Reliability (Cronbachs alpha coefficient) for the entire scale was .934 (.890, .872, and .861 for the three subscales, respectively). **Conclusions:** Respondents' evaluation of GE training indicates that Greek education students appear positive for GM incorporation into curriculum but are not aware of gender inequalities and dont perceive a strong commitment to GE education in their respective institutions.

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COVID-19 AND CO- RESPONSIBILITY. An analysis from a gender perspective

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topics: GENDER AND INTERSECTIONALITY
INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Pandemic, gender relationships, old age, sexual division of labor, co-responsibility

In this paper first we will analyze the situation of co-responsibility in the private sphere before the arrival of Covid-19 where patterns of inequality persisted in the cultural, ideological and affective imaginary, despite recent analyzes in terms of conciliation and co-responsibility showed a certain optimism on the path towards generic balance. Following this line of argument, in the second instance we will analyze the ideological, social and existential foundations that can explain the persistence of generic asymmetries in households, focusing fundamentally on the prevalent feminine ideology to show that a reconceptualization of citizenship is necessary to support the political transformations in a profound change in relationships in the private sphere. Finally, we will dissect, the keys to daily life in times of Covid-19 from the abyss and the defenselessness that generated the vacuum of public policies of conciliation and co-responsibility, undermining social distancing, to understand its repercussions and survivals in terms of gender.

The future of employment and the gender gap in STEM careers in Catalonia

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↳ **Keywords:** Youth employment, gender and STEM, university system, education system

The DigitalES report (2020) indicates that there are 10,000 job vacancies in the technology sector. For this reason, STEM careers have become a priority objective for the development of the youth labour market and the fight for equal opportunities, as stated in Goal 5 of the SDGs of the United Nations 2030 Agenda. However, women represent less than 45% of the Catalan, Spanish and European scientific technological community. This issue poses a problem but also an opportunity for collaboration between the academic world and social and political agents. From Catalonia, the presentation in July 2020 of the Ciència i Gènere(1) report by a team of teachers and experts from the International University of Catalonia before the CAPCIT (2) is a good practice in line with this collaboration in policy design. Methodology and main results Once the review of the main literature on the subject has been carried out (Geena Davis Institute on Gender in Media and Lynda Hill Foundation, 2018; Riegle-Crumb, C., Moore, C. and Buontempo, J, 2017; Buschor, C ., Berweger, S., Frei, A. & Kappler, C, 2014; Catherine Hill, Christianne Corbett, and Andresse St Rose, 2010) an analysis of the database of the Catalan interuniversity information system, UNEIX, (3) was carried out. A first result was that more women (55%) access Catalan universities and that they obtain better results, according to the performance rate, efficiency by degrees, and average grade of the transcript, than their male colleagues. However, despite these indicators when analysing the data disaggregated by careers, women represent 70% in degrees in the Health Sciences field and only 20% in technological STEM careers (Science, Technology, Engineering and Mathematics). Why do university women not enter these careers? Discussion, Public Policy Proposals and Contribution The starting hypothesis is that there are educational, family and social factors that would explain the reasons for these gender differences in the choice of technology STEM careers. This situation makes it necessary to open a debate on the design of public, educational and employment policies including the recommendations made by UNESCO (2019) regarding the three areas mentioned: the family (education in equality / co-responsibility, active parental listening, normalization of STEM female roles); society (promotion of series, films and audio-visuals contents with STEM references, collaboration with communication channels and influencers: Instagram and YouTube) and school (development of motivation and self-concept of girls regarding their professional future, promotion of presence of scientific role models among teachers, development of teaching strategies and educational projects that integrate STEM careers into curricula). The presentation of the CAPCIT report before the Parliament of Catalonia presenting these data can be considered a first step in the design of a joint work between the academic world and government entities that will involve in the future the ministry of labour, social affairs and education as well as the entities respective at the regional level.

Integration of the gender dimension in university teaching via Syllabus UNESCO-UniTwin

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↳ **Keywords:** Educational innovation, gender perspective, higher education, Participatory Action Research (PAR), university networks

Educational innovation networks promoted by the universities play an important role in the transversal integration of the gender dimension in teaching methodologies, as well as in the training of teachers and students in this matter. These networks represent spaces for collaboration, exchange of ideas, contribution of new perspectives and transdisciplinary visions that favor and promote innovative proposals in all areas of the education system in general and, without a doubt, also in innovating and advancing the implementation of the gender perspective in higher education. In line with the above, a case study is presented, based on the experiences developed in the context of two research networks for teaching innovation at the University of Alicante. One of them related to youth entrepreneurship (PRP-Emprende-Innova) and the other one related to the application of the UNESCO-UniTwin Syllabus (French, Vega-Montiel and Padovani, 2019) for the inclusion of gender in University teaching (TGR-Syllabus Gender). The studies carried out by Ventura-Franch (2008) and Asian, Cabeza and Rodríguez (2015) have been considered as some of the theoretical references on gender training at the University due to their commitment to education in equity values as well as their promotion of gender awareness. In both networks, a Participatory Action Research (PAR) has been carried out with a twofold purpose: a) on the one hand, for the PRP-Emprende-Innova Network in order to promote university entrepreneurship with a gender perspective; and, on the other hand, b) for the TGR-Syllabus Gender Network, in a more specific way, to implement the gender perspective in university teaching. In both cases, shared work has been carried out by lecturers from the Universities of Alicante, Spain, and the Latin University of Costa Rica. Therefore, it has been possible to establish comparisons between the two different social and educational contexts. The methodology used has been qualitative, based on group techniques that were supported by semi-structured questionnaires to gather information. Likewise, in both studies, the

experiences carried out through the PAR have also been evaluated through quantitative studies by surveys through an online application. The results of both studies show that the collaborative task of the university networks, through the case study presented, can be a great asset for teachers in educational innovation; can foster the engagement of students in learning, and can introduce new critical perspectives for the students. Likewise, it has been observed that the work of the university networks in the treatment of gender issues, not only makes up for the lack of specific subjects on gender equality in the different university degrees, but also constitutes a living laboratory of shared experiences, from which the awareness of the gender dimension in students of different university degrees is stimulated.

Guidelines to incorporate a gender perspective into Mathematics at university level

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Mathematics, statistics, gender mainstreaming

We show how gender perspective can be implemented in mathematics teaching at university. The following aspects are taken into account: 1) an adequate management of the classroom (promoting an equal participation); 2) the visibility of the contributions of women in these areas (with different activities, ranging from quotes to escape rooms); 3) the use of inclusive language (in all levels, oral, written, visual, etc.); 4) the methodology through active teaching (learning by doing mathematics, working in cooperative groups, by projects, etc., instead of competitiveness and individualism); 5) the contents (for example, in statistics, showing the importance of an adequate sampling, the appropriate questions in order to see all the visions, i.e. to show the importance of taking into account gender in engineering or other fields through data); 6) the work in values by humanizing the problems (some math activities can be about discrimination, climate change, etc., i.e. math for social justice); 7) the use of the computer; 8) an appropriate evaluation (assessment should be diverse to take into account the diversity of students, but we also have to take into account some implicit biases in evaluation); and, above all, 9) interpersonal relationships, where empathy is essential as well as breaking with stereotypes and implicit biases. We also show how to integrate gender perspective into

math research, both in pure math and in applied math: in the content, but also as regards to the equal opportunities in a field with few women and minority groups. All these aspects are reviewed in Epifanio (2020).

University Students' First Beliefs On Gender Differences . A Tool For Assessing and Promoting a Gender Perspective in Higher Education

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** First beliefs, gender perspectives, higher education, psychology

An innovation project about integrating gender perspective in Psychology studies (UMA PIE 19-007) is being developed in University of Malaga from 2019 to 2021, due to our worry, as teachers in Psychology degree, about the little attention gender receives along these studies. As a part of this project, our instrument to assess first beliefs of gender differences (IPG) is adapted to a shorter and on line form. Statistical characteristics will be shown in this work. At the beginning of the academic semester, this new form is applied to 360 Psychology students. Descriptive results and frequency of different explanations (biological, educational and constructivist) will be presented and discussed. The need to work on revising these explanations drive us to design some workshops about gender topics (sex in adolescence, peer relations , gender diversity and gender violence) to be developed in practical sessions of Psychology degree matters. Assessing the impact of these activities wiil be finally assessed in a pre-post test with IPG and also in a qualitative way with focus group sessions.

The Impact of SARS-CoV 2 Related Lockdown on urgencies Dental Practice according to dentist gender

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topics: GENDER AND INTERSECTIONALITY

↳ **Keywords:** COVID–19, dentist gender

Introduction. Dental care was suspended during the COVID-19 alarm period, except for dental emergencies, and these would be attended by adopting the appropriate prevention measures in relation to the protocols established in the pandemic. Telework has been considered as an effective mechanism for the provision of services, where ICTs have been a key instrument. Oral Health professionals represent a job category with a very high risk of exposure, due to they work at a working distance reduced (less than one meter from the patient's head) in the oral cavity, where the maximum expression of the possible cellular coronavirus receptors has been described. In addition, most dental procedures involve the generation of aerosols. Objective. In this research, the repercussions of the COVID-19 pandemic on dental emergency care are analyzed according to the dentist gender perspective. **Methods.** A questionnaire was made during confinement to know the dentist performance. The participants gave their consent in accordance with data protection and the protocol was approved by the ethics committee of the University of Murcia UMU (ID: 2850/2020). This is an observational study with an individual descriptive and prevalence base. The questionnaire was operative during the strict alarm period, which began on 14th March until the end of 21st June, 2020. The sample population was made up of dentists, thanks to the collaboration of some Associations of Dentists and Stomatologists of various regions of Spain, respecting at all times the data protection law. **Results.** The mean age of the participants was 42.6 years (SD = 11.4), with 59.9% (n = 371) women versus 40.1% (n = 248) men. The average number of years of professional experience is around 17.7 years (DT = 10.6). We did not find statistical differences in dental emergency care between men and women by telephone (p =0.515), however we find differences in the face-to-face way, being men who move compared to female dentists to attend dental emergencies (p = 0.004). **Conclusions.** The pandemic highlights the way of acting between dentist men and women, we must avoid the perpetuation of gender roles and promote joint responsibility between both genders.

"I've lost this year." Polish women scholars' research productivity during the COVID-19 pandemic.

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↳ **Keywords:** Women, academic productivity, academic careers, COVID–19, higher education reforms

The global pandemic of SARS COVID-19 is one of the greatest challenges of the contemporary world. According to a study commissioned by the European Parliaments Policy Department for Citizens Rights and Constitutional Affairs (2020), this crisis - as well as others in history - is seemingly gendered. Both the earliest papers (e.g. Almanssori & Hillier 2020/2021) and current studies on the issue of gender and pandemic impact (e.g. Lambrechts et al. 2021) show that the effects of lockdowns and higher education institutions shift towards teaching and working almost exclusively online, have a specific impact on women in academia, especially those with dependants. In different countries, this impact may vary depending on the culture, economy, and social context. This presentation aims to examine the experiences of women scholars in academia in one of the EU member countries - Poland. This Central European, post-soviet country is now in the process of significant change in social perception of gender roles and women's rights, which are the subject of the public debate and continuing public protests. At the same time, Polish academia is in the process of introducing a new higher education law, changing the criteria for evaluating the research quality of individual scholars and their departments. These conditions, accompanied by the pandemic crisis, have created a volatile and unpredictable working environment for female academics working in Poland, where 46.9% of academic teachers employed in HEIs in 2019 were women (Statistics Poland: 181). In the EU-27 this average is slightly lower at 42.8% (EUROSTAT Statistics). The proposed poster presentation will present findings from our ongoing study titled Covid Gendered Academic Productivity - Polish Perspective. We have utilised a qualitative online questionnaire, collecting data among Polish scholars in March and April 2021, approximately one year after the COVID-19 crisis was declared a global pandemic. The presentation will be based on at least 133 responses from women working in Polish academia (data collection until 11th April). We consider the perspective of women scholars - from doctoral researchers to full professors, shared through responses to open-ended questions and analysed through the feminist

theory lens. We aim to explain the factors determining their scholarly productivity and other academic duties during the first year of the COVID-19 pandemic crisis. The preliminary analysis suggests that the lack of support, mostly in the context of the daycare for children, homeschooling, and the frustration caused by the need to shift social roles many times during a day, seem to be the most commonly shared experience among academics in Poland. Women are seemingly more likely than their male colleagues - even during a pandemic - to take care of other people, including students and peers. However, these support roles are not taken into account during the academic activity evaluation. As two-thirds of the respondents claim their research productivity has fallen, this might have serious short- and long-term effects on their academic careers, widening the gender gap in Polish academia even more.

Gender approach to the Theory of Textile Origin in Architecture: from subverted tool of oppresion to a feminine language

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topics: APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY
GENDER AND INTERSECTIONALITY

↳ **Keywords:** Textile

Despite it could be believed, talking about textile in architecture does not include any woman. In fact, no female name is included in the History or Theory of Architecture taught in architecture schools linked to the more notable textile works and projects, since the outstanding theory «Das Prinzip of Beikledung in der Baukunst» was stated in 1860 by Gottfried Semper. How is it possible? Taking into account that textile technics are ancestrally related to women and for a long time it was the unique paid labour that was socially acceptable for them, it could seem that their inputs to this field should be taken seriously. But, strangely, women's textile contributions were made invisible, vanished and underestimated through patriarchal standards, forming a vast knowledge gap. Therefore, a state of the situation review is highly opportune to include women sight, ways to do and communicate to History of Architecture in textile matters. For this purpose, two different paths of textile envelopes in Architecture Theory are being displayed. On the one hand, the traditional and androcentric one, including well-known authors as Mies Van der Rohe or

Adolf Loos. On the other hand, a dissident gynocentric path focused on textile women inputs which being disciplinary regarding architecture or not, had influenced architectural discipline somehow. This gynocentric overhaul gives architecture students the opportunity to discover new referents and boosting vicarious learning possibilities by uncovering the ways women had overcome barriers -following Filomela's example- by transforming textile works which were originally a tool of oppression, a way to maintain them under control within the domestic limits, into a language for feminine purposes, a way to claim their rights and feminine issues.

Assessmento of Attitudes Towards Inclusion and Gender Dynamics in University Students

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender, higher education, undergratuates, innovation proyect, transversal

The university environment constitutes one of the main agents of dynamization for the attention to diversity and an education for gender equality in coherence with what is proposed in the Plan for Equal Opportunities between women and men of the UGR. This work is part of the advanced teaching innovation project entitled «Transversal education for affective-sexual, body and gender diversity» (Code 419, Call for Teaching Innovation Projects and Good Practices of the FIDO UGR Plan 2018-2020) that has as a general goal that of sensitizing and promoting education for sexual, corporal and gender diversity (sexual orientations, gender expression and identity and diverse characteristics), non-sexism, coeducation; respecting gender identity and the importance of prevention and its awareness in the university environment. Precisely, the objective of this work is to evaluate the attitudes towards inclusion and gender equality in a sample of future teachers of the Degree in Primary Education. The association between the variables of positive attitudes towards gender equality at the three levels (sociocultural, relational and personal) and the psychoeducational variables of self-esteem, emotional intelligence, empathy, daily stress and resilience was also examined. The participants were 1st and 4th year students of

Primary Education at the Faculty of Education Sciences to which instruments were applied for the evaluation of the Student Attitudes Scale towards gender equality, resilience, empathy, emotional intelligence and self-esteem. Positive correlations were found between students' attitudes towards affective-sexual, body and gender / gender equality diversity and scores on variables such as empathy and resilience. The data obtained demonstrate the usefulness of this type of innovation projects and psychoeducational interventions for the development of socio-emotional competences and attention to diversity with the ultimate aim of improving social harmony by dismantling stereotypes and raising awareness for what is relevant to the role that variables such as resilience, self-efficacy, self-esteem, emotional intelligence, empathy and daily stress can play, with education being considered an authentic instrument of social transformation.

Editorial board of the Spanish journals of Psychology and Education: an analysis with a gender perspective

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POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gap gender, gender perspective, editorial board, psychology, education

In the area of academic publishing, peer review and the editorial process play an important role in the accumulation of scientific knowledge and its dissemination. People who make up the editorial team of journals have the power to decide which manuscripts are published or not. They have an outstanding effect on the academic promotion of professors due to their publications are used as the main source of information to assess their academic curriculum. The organization of publication tasks is hierarchical with different responsibilities from the editor-in-chief who has the final decision to the administrative tasks that make publication feasible. The main objective of our study is to quantify the extent to which women are represented in the editorial teams of the Spanish Psychology and Education journals that are indexed in Web of Science database. The analysis was carried out with the information of

the editorial board members that the journals have on their websites, in 2021. 112 Spanish Psychology and Education journals have been reviewed (24 journals with impact factor in the Journal Citation Reports (JCR), 16 in Psychology and 7 in Education) and the information of 2,123 people who are part of the editorial board of the journals has been analyzed (36% were women). The results indicate that approximately 20% of the editors-in-chief and a third of the members of the editorial board are women. On the other hand, when it comes to performing journal management functions, the higher percentage of women (approximately 65%) stands out. The main conclusion of our study is there is a gender gap in the leadership of the editorial board of the Spanish Psychology and Education journals indexed in Web of Science database. The results provide evidence of the need of design initiatives and research plans that facilitate the presence of women as effective leaders in Science. Promote gender parity, facilitating the participation of women in editorial boards and especially, supporting their leadership in positions with responsibilities and editorial decision-making power. From the area of academic training, it is necessary that women scientists who are in promotion receive specific information on how to integrate into the process of publishing papers, what roles can be played and what functions and decision-making power each member of the editorial and administrative team of a journal has. The aim is to promote the involvement of women in tasks beyond the role of manuscript reviewer or administrative functions. Our findings are discussed from the gender perspective in the academic world of universities and the research culture that promotes publish or perish and leadership as a fundamental element to achieve academic promotion and professional recognition.

Mainstreaming Gender Equality in Higher Education and Science Research: a Community of Practice of Latin American universities and research centers

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender equality, universities, institutionalization, community of practice, collaborative work

The aim of this poster is to present the methodology and the main results of the Community of Practice (CoP-LaC) integrated by universities and research centers and governmental institutions in Latin America. It was created in 2019, in the framework of the ACTOnGender project, led by the Universitat Oberta de Catalunya, with the support of the European Union's Horizon 2020 research and innovation programme. This CoP includes 14 universities and organizations from Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, and Uruguay, and is coordinated by the UNESCO Chair on Women, Science and Technology from FLACSO Argentina. The Community of Practice is an innovative and collaborative experience, that encourages the exchange of information and new ideas, and the creation and implementation of resources aimed at promoting and strengthening the design, implementation, and evaluation of policies and programmes for achieving Gender Equality in Higher Education and Scientific Research Centers. Creative instruments were developed, evaluated and applied for collecting information of gender inequalities and biases, as well as for creating awareness and commitment with Gender Equality within the university community. Likewise, the strategies for mainstreaming this approach in academic institutions were analyzed in depth, as well as the main resistances aroused in the different actors and the resources to overcome them. In 2020, the CoP organized the Conference «Transformations in Process» dedicated to analyzing the mainstreaming of Gender Equality policies in universities and research centers, and the incorporation of the gender approach in curricula and teaching practices. The main results of this CoP are included in a publication that will be disseminated at the World Conference on Higher Education organized by UNESCO. The experience of the CoP-LAC shows the effectiveness of the Community of Practice

methodology to achieve productive exchanges and results through the construction of a «sense of community», based on a horizontal link of trust, cooperation and critical reflection on experiences, projects and outcomes.

The Equality Plan of the University of Zaragoza. Evolution, Recent Developments And Challenges

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Equality Plan, university, inclusive perspective, cross-cutting perspective

The equality plan of the University of Zaragoza is currently being reviewed in light of the new challenges facing the Institution. The maturity of the higher education institution in the development of an equality policy, together with its Equality Observatory, is shown in the elaboration and design of its new equality plan. The poster presented here aims to show the evolution between the initial equality plan and the one that is currently being designed, showing the modifications to be introduced, not only marked by the current regulations, but also by the equality strategy that the institution is considering from a cross-cutting and inclusive perspective.

Gender Awareness Among Students in Health Sciences. Methodological Approach and Preliminary Findings

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↳ **Keywords:** Gender,awareness, health, higher education

According to the WHO (2016), knowledge and awareness of how health outcomes are related to sex and gender roles increases equity and reduces gender bias in health care. However, despite the legally mandatory gender training in Health Science degrees, the discussion about the real state of its implementation and about what would be needed for a successful approach continues. This paper is part of a research project on the gender awareness of university students, which is financed by the program «Aids to Research in University Teaching REDICE 2020» of the University of Barcelona. Its main objective consists of evaluating sensitivity towards gender among the university students of Health Science degrees. Specifically, we study and compare gender awareness in the degrees of Dentistry, Medicine, Nursing, Physiotherapy, Speech Therapy and Podiatry. Additionally, assuming that cross-country differences in attitudes to gender roles are linked to the prevailing cultural values in each society, the analysis covers five universities of different latitudes and social-economic contexts: the University of Barcelona (Spain), the University of Cantabria (Spain), the University of Cartagena of Indias (Colombia), the University of La Frontera (Chile) and the National Autonomous University of Nicaragua (Nicaragua). Therefore, this research also allows for the incorporation of the potential relevance of the social and cultural context. The analysis focuses on the final two years of each degree and is based on a survey. The theoretical support for this questionnaire came from the Nijmegen Gender Awareness in Medicine Scale (N-GAMW). The scale was proposed by Verdonk and accepted as a valid tool to evaluate perceptions of gender awareness in medical education in 2008 (Verdonk et al., 2009). Following the N-GAMW scale, we included items about gender sensitivity in health issues (5 items), gender stereotypes about patients (5 items) as well as towards health professionals (5 items). However, our study not only explores students' perceptions relating to gender awareness but also ideas on gender stereotypes in general and about transsexual people (12 items) as well as the effects of the implementation of a gender perspective in each university (8 items). This last element aims to help our understanding of how to improve the implementation of a gender perspective. The questionnaire also included questions about student context. The initial version of the questionnaire included 65 questions, most of them measured using ten-point Likert-type scale, ranging from 0, Strongly Disagree to 10, Strongly Agree. The questionnaire was previously evaluated by 6 people with experience in gender issues and piloted with 30 students. After the revision, 6 questions were eliminated, 5 were introduced and 4 were revised. The final questionnaire was composed of 55 items. Preliminary results, with a sample of 360 students, revealed that participants perceive the implementation of a gender approach in their curricula as insufficient. They also expressed low levels of stereotypical thinking about health issues, towards patients and about transsexuality but they showed more stereotypical thinking about the professional expectations and achievements of women in the labour market

Gender Pay Gap During the Economic Crisis. Could it Happen Again?

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topics: GENDER AND INTERSECTIONALITY

↳ **Keywords:** Gender pay gap, fields of study, masculinization, feminization, economic crisis

According to the theories of human capital and credentialism, there should be a match between the job requirements and the knowledge and skills of the people employed in the job. However, there is much evidence that this does not happen in the current job market. Furthermore, during the period of economic crisis, from 2008 to 2014, while there was a general drop in wages, there was also an increase in the gender pay gap (Figueiredo et al., 2015). In this paper we analyse the evolution of the salaries of graduates four years after their labour insertion by gender and by fields of study. For this, data from the surveys of the AQU (Agency for the Quality of the University System of Catalonia) have been used. Surveys were conducted in 2008, 2011 and 2014 on graduates who completed their studies 4 years earlier. The results show salary differences between the different fields of study, being the maximum differences between the technological degrees and those of humanities. In addition, differences in gender participation are also observed in the different grades, with education and communication grades and health grades being more feminized, while technology grades are the most masculinized. Therefore, there is a double association: on the one hand, the masculinization or feminization of the different fields of studies or degrees; on the other hand, the salary differences between the different fields of study and professionalization (Ochsenfeld, (2014). The consequence is the existence of a significant gender pay gap. Furthermore, during the period of economic crisis, the gender pay gap increased, as a consequence of the distribution of employment by sex, that is, due to the differences in the participation in employment of men and women in the different economic sectors. Can the gender gap increase again as a result of the covid19 crisis? There is a risk, since the structure and distribution of employment has not changed substantially.

FEMINA. Female participation in high-tech enterprises

De los Ríos Gutiérrez, Anjali
DGIM and SODERCAN

topics: GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Good-practices, equality public policies, breaking barriers, gender-neutral educational project, entrepreneurship in STEM

The General Direction of Women Issues and Gender Equality of the Government of Cantabria (northern Spain) and Sodercan (public regional company) are involved with an European project related with the design and implementation of public politics which stimulate female participation in high-tech sectors and companies. The project rises from both academic studies and practical experiences which show us that increasing female participation can make high-tech SMEs more competitive. This sector is of high relevance within the labour-market and consequently women cannot be excluded. Since 2018, FEMINA partners are cooperating at interregional level to ensure that selected policy instruments promote female engagement in their high-tech sector. The project considers how to identify, implement, monitor and evaluate policy measures that break down barriers to female high-tech entrepreneurship, to employment and career progression in high-tech SMEs and to gender dimension of innovation in funding schemes for high-tech start-ups and SMEs. The project is divided in two phases: Phase one, LEARNING PHASE: Understanding barriers. To identify and analyse reasons for the continued gender gap in high-tech sectors. Understanding solutions. Partners provide and exchange ideas and policy experiences on regional policies tools that could address the above barriers. Defining action plans. Partners define gender related measures that each intends to integrate into its policy instrument. 2. Phase two, ACTION PLAN. To implement and monitoring the actions collected in the defined action plan. The aim of this work is to describe the FEMINA project and propose a course of actions given the fact that phase one has already ended and we are starting the implementation of our designed action plan, which basically consists in two actions: Action 1. Pilot and roll out of gender neutral kindergarten for high-tech centres, based on the GP Hokus Pokus gender neutral kindergarten (Norway). The action involves the implementation of two kindergartens with a gender focus where many companies

linked to high technology are located. Besides the enforcement of conciliation, this action promotes the disappearance of gender stereotypes from early ages. Firstly, we will design an itinerary with a gender equality perspective, focused on technological content and respectful of the principles laid out in the Agenda 2030. The intention will be to spread this regional educational project to the kindergartens integrated in the public system of kindergartens dependent on the Government of Cantabria by the end of the project. Action 2. Breaking barriers for entrepreneur women in STEM. Based on the GP EMPOWA Supporting women entrepreneurs activities in Horizon 2020 (Greece). Through the creation of a new grant, we address the difficulties faced in accessing finance and the credit risks by potential female entrepreneurs and by those women that want to develop the professional career in sectors in which they are under-represented.

Decoding the labyrinth empowering psychologically current and future women leaders: A well-being postgraduate program training with a gender perspective

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Psychological empowerment, postgraduate program, women leaders, students

Getting to a leader position at work continue to be harder for women than for men in Spain. Beyond phenomena such as glass ceiling, sticky floor and so on, some authors talk about a more complex phenomenon that women leaders have to face: decoding the labyrinth of leadership built under a patriarchal model, which difficulties for women to access (Eagly & Carli, 2007). One of the factors affecting this decoding process is the central role of caring for others as one of the defining axes of womens identity. Consequently, women who have decided to have a family have a conflict source when managing their time to meet both responsibilities to develop professionally. And it might affect not only women who are currently working but also to women who are getting prepared to develop and plan their future careers, such as women students. Seligmans (2011) PERMA

well-being model sustains that the presence of five elements counts towards it: positive emotions, using the highest strengths and talents to develop optimal experiences, nurturing positive relationships, having a meaningful life, and accomplishing goals. Based on this model, we developed two empowering programs addressed to current and to future women leaders, respectively. The programs were performed during eight weeks, with both a group of women leaders (N=9) and with a group of future leaders (N=8) in Castellon (Spain), in different years (2019, 2020). The aims of the training were: Increasing participants awareness of cultural, social and personal elements structuring their identity as women, and its influence in the conflict that supposes exerting caring and working roles; Identifying the emerging emotions when handling the conflicting caring and working roles; Providing strategies and techniques for generating emotional well-being; Designing working and caring roles strategies by participants so that this role exertion will represent a well-being source. Qualitative and quantitative measurements -pre and post-intervention- were performed. The results show and increasement in both psychological empowerment and well-being in all areas of their lives.

Swiss Federal Programme P-7, « Diversity, Inclusion and Gender Equality (DIGE) in University Development » 2021-24

Steering committee:

Barbara Fäh, Susanne Burren, Geneviève Le Fort, Christiane Löwe, Blanka Šiška, Kilian Stoffel; Noëmi Eglin, Gabriela Obexer-Ruff, Patricia Schmidiger, Hannah Schütz

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topics: GENDER AND INTERSECTIONALITY

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Diversity, inclusion, gender equality, university development

The Swiss Higher Education Council and the Swiss Parlament have adopted a new federal Programme for the period of 2021-2024 under the titel of «Diversity, Inclusion and Gender Equality (DIGE) in University Development». Its main goals are structural implementation of DIGE in the organisation, teaching, research and innovation (R&I) as well as to enhance DIGE competence at Swiss higher education institutions (HEI). DIGE as ressources and

benchmarks shall be promoted and applied in the development of the Swiss HEI. The Programm offers the opportunity to gather ressources and Know-How at two levels. First through project collaborations networking and exchange activities (Platform Forum) are promoted in order to improve the development of DIGE at Swiss HEI. Furthermore, new and innovative projcets with high visibility and potential for transfer are financed. Trough new forms of collaboration the transfer of «good parctices» and evidence based findings shall be enabled. In the first Call (2/3 of the funding), already 20 cooperation projects incuding various diversity dimensions (gender, socio-economic as well as socio-cultural background, disability, etc.) have been positively evaluated and will start to operate soon. A second Call is planned for 1rst of April 2021 offering a further third of the federal funding. The Programme P-7 2021-2024 will be evaluated as will be the still on-going (previous) Programme P-7 2017-2020/21(https://www.swissuniversities.ch/en/topics/equal-opportunities/p-7-equal-opportunity-and-university-development), which has been extended due to the COVID 19 pandemic until the end of 2021. The evaluation results and its respective recommendations will be communicated to the project leaders of the new Programme. The result will be translated into English in order to make it accessible for an international community.

Promoting the culture of gender equality in Higher Education: Experiences from Mexico

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Universidad de Guadalajara, Mexico

topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender equality, higher education, and the University of Guadalajara

Gender equality is an issue that has been present on international agendas for several decades seeking greater equality for women within all areas of society. Even though the inequality gap has been reduced in recent years, there is still much to do. According to UN Women (2015) statistics, in 18 countries, husbands can legally prevent their wives from

working; in 49 countries, there is a lack of laws that protect women from domestic violence, and the gender pay gap worldwide is 24%. On educational issues, while it is true that the literacy rate has increased, 60% of illiterate people worldwide are women. In Mexico, 50.7% of higher education students are women; and instead, 49.12% are men; but notwithstanding these indicators, there still a gender gap in education; since on average, women only study 9.6 years of 12-year education that the Mexican educational system includes to their undergraduate degree (INEGI, 2020). In this context, the University of Guadalajara (UDG) has implemented projects that seek the mainstreaming of gender equality within its community, constituted by the enrollment of 310,845 students (45.5% male, 54.5% female), a teaching staff of 16,548(55.80% male, 44.20% female) and a community of 10,737(47.40% male; 53.60% female) administrators from higher education and high school. The main project generated by the University of Guadalajara focused on three aspects: 1. Diagnosis, 2. Sensitization 3. Mainstreaming of gender equality. The first stage's objective was to identify the community's perception of gender equality by conducting 4288 surveys to the administrative and academic staff and the student body. Among the topics analyzed, there are generalizations of gender equality, gender stereotypes, identification of the limits of harassment, and others. The main results of the diagnosis and the actions are: 76.3% of the university community believes that gender equality means access to the same opportunities for women and men, 45.5% of students, 61.1% of administrative staff, and 63.9% of academic staff believe that there is gender inequality at the University of Guadalajara, 69% of university students perceive that there is greater gender inequality in the workplace. Considering the diagnostic results, the University proposed a plan to raise awareness of gender equality mainstreaming; which the first phase consisted of 91 talks/workshop with gender equality issues over four years, impacting 7,433 students, teachers, and administrative staff. The second phase aims to expand gender equality; therefore, in 2021, the University will be implementing the projects of: a) The first online course by the University of Guadalajara, which aims to sensitize teachers on gender equality, bullying, and harassment. It is online and self-managed. b) A mandatory course for high school students called «Gender Perspective». c)The Equality Unit's creation, which its first task will be: Generate the protocol for eradicating gender violence within itself. This oral communication presents the University of Guadalajara's experiences in its search to establish a culture of gender equality among its community, reviewing the positive actions and the obstacles that the educational institution has faced; and their impact from 2016 to 2021.

Gender Equality Policies in Research and Innovation : A comparative analysis of Italy, Japan, Spain, Sweden, Switzerland, the United Kingdom and Netherlands performed by the Research and Gender commission at RAICEX (IgR).

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topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender commission, equality policies, science work culture, gender gaps, structural change

Investigación y Género RAICEX (IgR) is the internal commission of Research and Gender at RAICEX (Network of Spanish Researchers Abroad). RAICEX network is an independent non-profit organization that engulfs 18 international associations and is made up of nearly 4000 Spanish researchers and scientists abroad. In the Research and Gender commission we have several goals aimed at improving the research structure system to create a more equal research and scientific environment. IgR strategic objectives are outreach, visibility of women scientists, international cooperation establishing institutional relationships and research in gender topics in high education and science. This work aims to address a comparative analysis of policy approaches for gender balance in the research, development and innovation sectors in Italy, Japan, Spain, Sweden, Switzerland, the United Kingdom and the United States. This international study is a natural outcome of the international background of RAICEX and the IgR commission, which has established working teams in several EU and non-EU countries. In this analysis of action plans to overcome persistent gender gaps, this study takes into consideration the peculiarities of the scientific sector and the idiosyncrasies of each region. The implementation of gender equality plans and actions is essential to tackle the structural gender equality barriers in research and innovation organizations. This study includes some gender equality objectives in the European Commission research system and non-EU regions. In addition, gender policy actions in the higher education sector that have been established in the selected countries of study and the results of those actions. We shall also focus on the ecosystem in Academia and research and on the working culture in science and how this affects gender imbalance. The qualitative comparative analysis between countries is based on the same criteria and indicators. Our work includes official statistical data provided by each country of study and refers to the gender policies adopted and

implemented in each region. When the information is available, we will also include the results of these actions. We believe that studying and comparing similarities and differences of gender policy approaches in different countries could provide key information for future policy actions and structural changes in general.

Assessment of perceived equality between women and men in university settings

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

↳ **Keywords:** Equality plan, diagnosis, conciliation, sexism, university

Organic Law 3/2007, as well as the different regulations derived from it, provided a legal context for the equality actions at Spanish organisations. As part of the Law, and in the labour context, Equality Plans are contemplated as tools to contribute to this end. In the context of equality/inequality, Universities are not exempted from the problem and also require courageous and committed Equality Plans to continue advancing towards real equality. One of the most relevant issues in any Equality Plan is the initial diagnosis of the situation, given that it is the starting point for designing the precise actions to be implemented in order to reduce inequalities. Initial diagnosis must address a series of matters determined by law, which must be evaluated through objective data, as well as subjective information from the staff working. This last aspect is of utmost importance, as despite the evidence of persistence of gender inequalities in the university context (Puy, 2018), a false sense of equality is detected in today's society which makes it difficult to detect sexism and therefore to eradicate it (Axpe et al., 2020). However, according to Fraser et al. (2015), in order to legitimise gender inequality, first it must be accepted and assumed. Thus, the aim of this paper is to analyse the perception of equality of men and women in different profesional groups in the university environment, which will provide us with the keys to advancing effective and not just formal equality. The research will involve teaching/research staff (PDI), research staff (PI), administration staff (PAS) and external companies (EEX). Socio-demographic and employment data will be collected, in addition to

administering the questionnaire «Perceived Equality Between Women and Men in the University Workplace» (developed ad-hoc by researchers from the Interdisciplinary Centre for Gender Studies of the Universidad Miguel Hernández; Martín-Aragón-Gelabert, Terol-Cantero, Cuesta-Bolao, Lozano-Chiarlones, Martí-De Olives and Navarro-Ríos; 2021), following the contents of the Organic Law 3/2007 according to its 9 sections: Selection and recruitment process, Professional classification, Training, Professional promotion, Working conditions, Co-responsible exercise of the rights of personal, family and working life, Under-representation of women, Remuneration, Prevention of sexual and gender-based harassment. A pilot study was carried out with 5 participants from the PDI, 4 from the PAS, 1 from the PI and 6 from the EEX, which allowed a consensus to be reached on the final version of the items and the suitability of the response scale for their administration. The final questionnaire includes 40 items with a 10-point Likert response, with the extremes being Strongly Disagree to Strongly Agree. The administration of the questionnaire will be carried out via e-mail distribution in Google Docs format. Descriptive and frequency analyses will be carried out. The results will make it possible to ascertain the perception of the group being evaluated on equality between women and men in the 9 mentioned areas. Other objective and structural indicators of the entity can be incorporated as a criterion with which to contrast the perception of the evaluated group.

Transformation of university teaching for gender equality at the University of Extremadura

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)
POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Gender, teaching, innovation, experience

Teaching has always been a key area to disseminate the knowledge generated in order to raise awareness and promote emancipation from feminist pedagogy (Robles Sanjuan, 2018). This question refers us to the invisibility of the gender perspective in teaching as it does not have a specific development either in competencies or in content. This leads us to the need to incorporate the gender vision into teaching as stated Schiebinger (2018), with

Gendered Innovations project as well as the Athena Swan initiative, implemented in many universities. The project we present should bet on work in this topic by transforming our teaching practices and the training that university students receive, in order to achieve a more plural, diverse and fairer society. Despite the fact that Spanish legislation on Equality establishes the need to incorporate the gender perspective in university teaching for almost 15 years, the University of Extremadura had not carried out a project to make it effective in an organized and effective manner and in different areas of knowledge. In fact, in the Diagnostic Report on equality made in 2019, showed the scarce effective implementation of equality competencies in official studies. Throughout the second semester of the 2020/2021 academic year, the Teaching Innovation Project, Transformation of university teaching for gender equality, has been launched. This proposal is based on this teaching experience. Thus, the following information would be highlighted: - Number and diversity of teaching staff involved in the project: 22 university staff and very diverse areas of knowledge are involved in the project, what favor the transversal implementation of gender in university teaching. - Training received: aimed at making visible and highlighting the importance of the implementation of gender as a category of analysis, as well as providing tools that allow its implementation. - Number and diversity of subjects involved: in order to show the results obtained with the proposal and the incorporation made of the gender perspective in the contents and/or materials used in each subject. - Creation of a database with teaching materials and good practices: with the aim of implementing resources that favor the implementation of the gender perspective in later moments and in other subjects. This experience is still in the process of being carried out, which will end this academic year. With this presentation we want to show the results obtained to discuss this type of initiatives, improve them, expand their implementation and encourage their development.

Implementation of a training in female genital mutilation in nursing degree students

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topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Female genital mutilation, cutting, nursing, universitary teaching, gender

Introduction: The term Female Genital Mutilation (FGM) refers to multiple procedures on the female genital organs for non-medical reasons (WHO, 2020). These procedures pose serious health consequences for women (Reisel & Creighton, 2015) and represent one of the largest expressions of violence and violation of women's rights throughout the world (WHO, 2020). Although this practice is mainly limited to some regions of sub-Saharan Africa, the Middle East and Indonesia (UNICEF, 2015), there are confirmed cases throughout the world as a consequence of migratory flows. Its spread to the West highlights the need to establish training actions for future health professionals for their proper approach, treatment and prevention. **Objective:** To know the effectiveness of implementing a training on female genital mutilation in increasing the sensitivity and knowledge of the students of the School of Nursing of Cartagena, Spain. **Methodology:** The training consisted of 2 hours to contextualize the problem and frame it within gender violence with the entire group (60 students) and a two-hour seminar for each small group (30 students) in the following week to present the action protocol and work on the most appropriate actions in each situation. A pre and post intervention questionnaire was used to measure the knowledge and attitudes of third grade nursing students. **Results:** 52 students with a mean age of 23.8 years responded to the pre and post-test, of which 37 were women and 93.1% had not attended any course or talk on the subject prior to the seminar. The intervention increased their knowledge regarding FGM typologies (from 47.7% to 64%), as well as their perception of the ability to identify FGM in their clinical practice by 50%. Students' knowledge of the legislation against FGM in Spain also increased (from 24% to 92.3%) and of the protocols and guidelines for action (from 8.6 to 88.5%). With regard to the appropriate action in the face of different proposed cases, increases the perception that it is necessary to assess whether the family has a planned trip to the country of origin, the importance of registering all the actions implemented, the need to assess the type of FGM and the consequences in childbirth. On the contrary, decreases the perception that using the abuse notification sheet is necessary in cases of non-practiced FGM or in cases without indications of imminent risk factors. In addition, the training increased the number of students who indicated that they would not respect the perpetuation of FGM for cultural, religious or other reasons. Conclusions: Awareness and training in female genital mutilation in the Nursing degree increases the students' knowledge regarding the practice and its proper approach. Future professionals will use this increased knowledge to improve clinical practice for women survivors of this practice.

SIMPOSIA

Due to space constraints and in order to avoid repetitions, in those abstracts with multiple authors only the institution of the first author has been mentioned.

Gender gap in STEAM vocations and careers

Richart, Alicia; Gómez Frías, Víctor; Moreno, Ana; Fernández Aller, Celia; Carrasco, Ruth

topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Gender gap, STEAM vocations, technological careers

Digitalization and technological innovation, as a key lever for social and economic progress, involves major challenges for labour market and education. While there is a growing demand of STEAM (Science Technology Engineering Architecture Mathematics) profiles, there vocations and consequently the offer in many countries is even decreasing. It is the case in Spain, where the association of technological companies DigitalES indicate that at present about already 10,000 highly qualified positions in their sector do not find appropriate candidates, and the problem will increase as the number of total positions is increasing in 250,000 every year.Many employers as well as universities are aware on the need of promoting from school concepts, values and methods that could foster STEAM vocations: research-based training, impact of science in society, knowledge of information and communication technologies and its use in modern pedagogical resources.But there is a particular concern about the presence of women in technological careers. The OECD has alerted of a very important global gender gap, even if there are relevant exceptions in some sectors in some countries. And again we can find the problem at its root, at 15 years of age, on average, only 0.5% of girls wish to become ICT professionals, compared to 5% of boys. In Spain, according to the Ministry of Higuer Education, there is only one women for every three men in technological studies, but moreover STEAM vocations have decreased 28% in the last decade and more among women (33%) than among men (28%). Technological universities, such as Universidad Politécnica de Madrid, are developing several approaches to integrate the gender dimension in their studies.Our workshop proposal is a common initiative of the Sustainable Organizations Research Team of Universidad Politécnica de Madrid and DigitalES. We would organise a round table with researchers and practitioners from the industry including a summarised diagnosis of the STEAM vocations for girls in Spain and other countries, a review of some successful policies in different countries and some particular examples from the employers. We would organise discussions groups with different profiles (public administration, companies, researchers) moderated by one of us from an open list of topics suggested by us and enriched by the public. We would finish with

a common restitution of those discussion which intend to create sensibility but also identify or disseminate some innovative approaches.

Promoting gender equality in physics: What we learned from research and implementation

Eran Jona, Meytal ; Nir, Yosef; Berghöfer, Thomas; Lang, Lia; Primas, Francesca; Schiffbaenker, Helene

Weizmann Institute

topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Gender equality, academy, best practice, policy, STEM, physics

This symposium/panel brings about our insights and best practice following research and implementation of gender equality plans in research institutions and universities in physics. Physics is worldwide characterized by strong gender imbalance, even when compared to other STEM fields, and there has been little change in this situation in spite of much effort in western democracies (WIP conference proceedings 2019). We will use our experience and our multi-discipline network of physicists, sociologist and practitioners (working together in GENERA project since 2015), to discuss insights regarding the barriers for gender equality in physics and what we can do to overcome them.The panel will be followed by a discussion. Francesca Primas: The first talk will look into new findings from the interdisciplinary project «A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It? The project launched a Joint Global Survey to learn about the educational and career paths of scientists and academics with a degree and/or professional career in STEM. The survey collected more than 30,000 responses, from six different scientific disciplines worldwide. We will highlight and discuss the main results of the survey, with special focus on physics and astronomy.

Yossi Nir and Meytal Eran-Jona: The second talk will focus on understanding the barriers for academic career in physics. Based on a nationwide research conducted in Israel, using both survey and in-depth interviews, we examined perceptions of PhD and postdoctoral female physics students, regarding their decision whether to pursue an academic career.

Through the women stories, we reveal the multiple and hidden ways in which gender operates as a power structure within the field of physics, inside the family and in the labor market. We will discuss how it influences the women decision making and shapes the «deal» that physics as a male-centric environment offers to these talented women.

Thomas Berghöfer and Lia Lang: The third talk will focus on lessons learned from the GENERA project, a consortium formed to enhance gender equality in physics. Following a from physics for physics approach, GENERA studied the status of the field and developed and implemented gender equality plans in the participating institutions. A long-term perspective has been developed that includes a monitoring system and the foundation of GENERA Network to continue to commonly address gender equality in physics and neighboring fields in Europe. We will present the project main achievements and highlight lessons learned.

Helene Schiffbaenker: The forth talk will focus on lessons learned from the evaluation research that followed the GENERA project. We used mixed method methodologies to evaluate the implementation of gender equality plans within 13 research performing and research funding organisations that participated in the first phase of GENERA project. Using the concept of Critical Friend, we focused on the micro-experiences of the change agents and the needs that organisations in male-dominated scientific fields show when gender equality is implemented in terms of structural change. We will discuss the research findings and future initiatives.

XXV years of Materials Engineering degree in Spain: a gender singularity?

Pastor, Jose Ygnacio; Tejado, Elena M.; Tarancón, Sandra
Universidad Politécnica de Madrid

topics: APPLICATION TO POLYTECHNIC UNIVERSITIES, INCLUDING SPECIAL FOCUS ON STEM FIELDS AND WOMEN IN STEM, AS WELL AS ON STEM-SSH INTERDISCIPLINARITY

GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Materials

The purpose of this contribution is to show the evolution of gender diversity in the university environment of a small discipline such as Materials Science and Engineering. These studies were first introduced into the Spanish university environment just twenty-five years ago, with the Polytechnic University of Madrid being the pioneer in the initiative.

These studies present several singularities that deserve to be highlighted and reflected upon:1. In spite of being a discipline on which many other sciences and engineering are based, it is little known, even at this time.2. It is a very transversal field of knowledge in which different cultures mix and converge through the variety of science and engineering disciplines.3. The first promotion of graduates of this degree was completely female, a surprising fact in an engineering field. This document evaluates publicly available data on the demography of Materials Engineering programs in Spain to try to explain the evolution of female graduates versus the general trend in engineering. The results obtained show a negative trend towards equality of vocations in this field, in spite of its initial tendency towards equilibrium. For this reason, the author has been developing an initiative for the promotion of STEM vocations directed towards the field of Materials Engineering among pre-university students for the last three years. Nowadays, we have some preliminary results that show that using the rich world of Materials in Science Fiction and Superheroes can help to awaken interest in this field among our young women.

EUFEM and its Vindications for the Improvement of the System of Knowledge. Teaching

San Segundo, Rosa; Montero, Pilar; Lameiras, María; Sales, Dora; Palomo Cermeño, Eva; Ávila Bravo-Villasante, María; Torres, Concepción; Sánchez de Madariaga, Inés

UC3M

topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** EUFEM, equality, gender equality, higher education teaching, degree, doctorate, postgrade, feminist theories, gender perspective

The aim of this symposium is to present the main themes of the EUFEM agenda in the field of research. EUFEM (University Platform of Feminist and Gender Studies, in Spain) has promoted since its creation the integration and recognition of the gender dimension in the content of research, knowledge transfer and innovation. Although important steps have been taken in recent years in this regard, there are still obstacles to be surpassed. Until then we will not be able to talk about a knowledge system that is fair, balanced and on equal terms and opportunities for women. In this symposium we propose to make a critical review

of the evaluation system of research in feminism and gender in Spain (sexenios), in the introduction of gender in projects and calls and in the visibility and impact of production in gender research. We also propose to consider the model of good practices that could show us, through practical cases, some valuable lessons that serve as an example for an improvement of the knowledge system in the teaching. In this sense, we will analyze the introduction of gender issues in the technical fields of engineering, architecture and urban planning.. We demand that teaching be included to integrate the gender perspective in undergraduate and postgraduate degrees, in all areas, so that the cross-sectional knowledge of gender issues is disseminated and deepened, which affects and competes in any area of knowledge.

Mentoring as a part of sustainable Gender Equality Policy

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topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Mentoring in academia; sustainability, gender equality policy, intersectionality

In the university context, mentoring has meanwhile a more than 20 years old tradition as one of the key measures to promote gender equality. Commonly, mentoring is seen as a counterpart to the old boys networks formed by male homosociability, i.e. the transmission of knowledge from an established to a less experienced person. Mentoring therefore offers women, many of whom are usually excluded from this kind of homosocial sponsorship relationships, access to promotion and insider knowledge. In some respect, mentoring programmes were criticised for their focus on fixing the women to better fit the gendered status quo without addressing the need for organisational cultures and practices to be transformed (van den Brink and Strobbe 2014). Yet, it has been proved, that mentoring programmes have the potential to make obvious and at the same time to soften typical system-immanent obstacles for women in academia. This bifocal approach addresses not only women´s development but also organisational change. Therefore, mentoring programmes can be effective instruments for structural changes in academia (Höppel et al. 2014; De Vries, van den Brink, 2016; Picardi and Agodi 2020).Current developments in higher education

policy, prevailing societal debates and contemporary literature on gender equality in higher education raise a number of questions for mentoring programmes that should be discussed. As mentoring programmes have both individual and structural impact, the prevailing question has to be: how can mentoring programmes warrant to be sustainable respectively how mentoring programmes can ensure to be a part of sustainable gender equality policy. The proposed panel focuses on sustainability of mentoring programmes, e.g. in terms ofEmbedment in strategic documents and gender equality plansQuality management, impact assessment and evaluation Resources, structural framework and design of mentoring programs adapted to changing university conditions Change agents: coordinators, mentors, mentees as multipliersAlliances, cooperation, associations and networks, national and internationalThe issues mentioned above will be elaborated on the cases of the mentoring programmes - members of eument-net European Network of Mentoring Programmes for the Advancement of Equal Opportunities and Cultural and Institutional Change in Academia and Research (http://www.eument-net.eu/). The overall intention of the panel is to discuss the drivers and comprehensive aspects of sustainability. Consensus is shared that mentoring programmes should be designed to prevent the reproduction of hierarchical structures; and that mentoring programmes should incorporate the intersections of the structural category gender with other categories such as age, cultural background or social preconditions.

Colloquium on Gender Equality, Diversity and Inclusion Initiatives across Canada

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topics: GENDER EQUALITY PLANS AND STRATEGIES IN RESEARCH, TECHNOLOGY AND INNOVATION INSTITUTIONS

POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

↳ **Keywords:** Equity

Canada has recently adopted and adapted the Athena Swan program to fit its population and culture. The new Dimensions program [1] is aimed at members of underrepresented and disadvantaged groups including women, indigenous peoples, visible minorities, persons with disabilities, and members of LGBTQ2+. Canada recognizes as a nation built on

immigration that diversity is one of its strengths, which positively contributes to research excellence. At the same time, in response to the Calls for Action from the Truth and Reconciliation Commission [2], we are committed to engage in respectful dialogue and collaboration with First Nations, Inuit and Métis people. New and long-standing Canadian programs aimed at equality, diversity and inclusion will be presented as part of the proposed colloquium. A history of women in Canadian STEM higher education by noted historian, Ruby Heap, will serve as a backdrop for the more recent initiatives to help articulate how we can move forward. The initial cohort of the Dimensions program includes some large and some smaller institutions. We will hear from two of them, University of Ottawa and Mount Saint Vincent University, to learn different approaches to ramping up new EDI programs. Most Canadian universities have now adopted a high level position at the Vice-president level to attend to EDI policies. Provost Fellow, Malinda Smith from the University of Alberta, will address intersectionality in the Canadian research ecosystem. And finally, from the national Chairs for Women in Science and Engineering program will be a discussion on engaging indigenous women and men in science and engineering higher education, while respecting their culture, history and connection to the land. Ruby Heap Professor Emerita of History, University of Ottawa Canadian Strategies and Policies to Promote Women in STEM in Higher Education: Historical Roots, 1970s-2000sSteffany Bennett Full Professor of Biochemistry, Microbiology and Immunology; Research Chair in Neurolipidomics; and Special EDI Advisor, University of Ottawa Dimensions: Measuring effectiveness of Equity, Diversity, and Inclusion interventions at the University of Ottawa Malinda Smith - Full Professor of Political Science and Provost Fellow, Equity, Diversity & Inclusion Policy, University of Alberta Intersectional Equity in the Canadian Research EcosystemTamara Franz-Odendaal Full Professor of Biology and NSERC Chair for Women in Science and Engineering, Mount Saint Vincent University: Mobilizing a University Community into EDI-A ActionCatherine Mavriplis - Full Professor of Mechanical Engineering and NSERC Chair for Women in Science and Engineering, University of Ottawa NSERC Chairs for Women in Science and Engineering: Engaging Indigenous Girls and Women in STEM.

Scenarios for a Europe-wide Gender Equality Certification or Award scheme

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topics: POLICIES FOSTERING STRUCTURAL CHANGE FOR GENDER EQUALITY IN THE RESEARCH, TECHNOLOGY AND INNOVATION SYSTEM

POLICIES FOSTERING THE INCORPORATION OF THE GENDER DIMENSION INTO THE CONTENT OF RESEARCH, KNOWLEDGE TRANSFER AND INNOVATION

↳ **Keywords:** Knowledge & innovation; structural change; award; certification

Certification schemes or awards are a tool that can help to foster Gender Equality actions. Many schemes exist, targeting the higher education institutions, or having a broader target including private companies or the whole public sector. As the EC has decided that Gender Equality Plans (GEPs) will become an eligibility criterion for funding in Horizon Europe, the need for defining standards for GEPs and the possibility to certify their design and impact open up the opportunity of a bigger role for certification schemes. To explore the possible options for setting up such a scheme at the EU level for the research and innovation community, the European Commission is funding the H2020-project CASPER, a feasibility study designed with a participatory approach. . The end result of CASPER will be three different action scenarios and a fourth no-action scenario. These scenarios were being developed in the period January June 2021 through a co-creation process. The GEHE conference workshop results would be used to further refine the scenarios. The purpose with the workshop is to continue the exchange with stakeholders, particularly the potential users of such a scheme (research centres and higher education institutions) at the occasion of the GEHE conference. All four scenarios will be briefly explained in a role play format by four presenters who will promote their scenario as the best one compared to the others. The workshop participants will act as a citizens assembly and make a choice through a voting application. After the presentations, they will have the possibility to ask questions through the chat function, receiving responses partly orally and for other questions through the chat, before voting for their preferred scenario. While voting results are being discussed, participants will get access to a virtual board where they will be able to post pros and cons of each scenario using both cards prepared beforehand and their own contributions on blank cards. The target group for participation in this workshop is Research Performing Organisations. The presentations will address both the user perspective, as well as at the policy perspective, when explaining the arguments. The workshop would be

one activity within the validation phase of CASPER before making the final recommendations to the European Commission. The scenarios will be available to participants before the conference. CASPER has already produced different public deliverables (see in the references). These include a thorough overview of existing schemes and of the characteristics such schemes should have based on user and stakeholder input. The ultimate aim of the workshop is to stimulate the discussion on: whether there is added value in developing a new scheme rather than relying on further development of existing schemes at the national level; the roles of institutions, Member States and the EC in advancing gender equality through certification schemes or awards.

Approaches to raise girls engagement in STEM fields in Spain

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topics: GENDER APPROACHES IN FOSTERING SCIENTIFIC-TECHNICAL VOCATIONS, ESPECIALLY IN STEM FIELDS

↳ **Keywords:** Interventions, motivation, role models, stereotypes, STEM, vocations

Women are underrepresented in those STEM (Science, Technology, Engineering, and Mathematics) fields traditionally associated with the deployment of masculine roles, such as Information and Communication Technologies (ICT) (3%), Natural Sciences, Mathematics, and Statistics (5%), and Engineering, Manufacturing and Construction (8%). However, women are highly represented in those STEM fields related to with the development of caring roles traditionally associated with feminine roles, such as Health and Welfare (15%) (UNESCO, 2017). The study on the reasons for the unequal representation of women in STEM fields is a complex phenomenon that has been addressed by several scientists from various disciplines (Master & Meltzoff, 2020). Numerous interventions and initiatives have been therefore conducted to increase girls interest in STEM fields (Prieto-Rodriguez et al., 2020). On the one hand, many of these interventions have been frequently designed to combat stereotypical beliefs about the type of person working in STEM fields. Recent studies have corroborated the assumption that women are more likely than men to be underrepresented in many STEM fields because women are stereotyped as being less likely to possess a sort of raw talent than men. For this reason, several interventions attempt to challenge the

stereotypical belief regarding womens lower talent in STEM competences like math than their male counterparts. In addition, young people tend to endorse the stereotype that computer scientists are geeks and freaks, who rarely interact with other people. This belief discourages many young women (and also young men) to choose computer science. On the other hand and given the lack of female role models in STEM, several of these interventions and initiatives have been based on female role models and female mentoring in STEM. These interventions attempt to foster a sense of belonging in STEM as well as the identification of young girls with female role models in STEM exposing them to the tasks and activities these role models do in their professional or academic life. This role model activity contributes to encourage some girls to consider STEM pathways as a future option. Other more recent interventions approach to this issue incorporating innovative strategies (such as through the use of artistic activities) to raise girls interest in STEM fields. Given the disparity of interventions and strategies to raise girls interest in STEM, a proper evaluation of their effectiveness can inform the design of social policy agenda based on this type of evidence. Finally, most of the existing interventions and initiatives to raise girls interest in STEM have been conducted in countries different from Spain. For this reason, in the present symposium we attempt to delve into this topic with the focus in a group of a group of interventions led by Spanish researchers and institutions to increase girls participation in STEM. The next four contributions will be thereby presented in the proposed simposium.

The Promotion of Gender Equality in the Degrees of the University of Salamanca

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USAL

topics: INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

INTEGRATION OF THE GENDER DIMENSION IN UNIVERSITY TEACHING (UNDERGRADUATE, POSTGRADUATE AND PRE-DOCTORAL TRAINING)

↳ **Keywords:** Gender perspective, Equality Unit, degree, university teaching

Based on the approval in Spain of Organic Law 3/2007, of March 22, for the effective equality of women and men, two fundamental obligations were established in university education

(art. 25): - Promotion of teaching and research on the basis of equality. - Mandatory inclusion of teaching on equality in the different study plans (creating specific postgraduate courses, conducting specialized studies and research on the subject). But this was qualified by the expression «in the study plans where appropriate», which has raised various questions about the form and effect of this imposition: in which study plans?, how?, what extent? The indeterminacy in these questions has contributed to the existence of very diverse study plans and with a very varied degree of compliance. In general, the degrees related to the social, legal and human sciences have fulfilled this obligation to a higher degree than the scientific-technological ones. Related to this, it must also be taken into account that Organic Law 4/2007, of April 12, which modifies Organic Law 6/2001, of December 21, on Universities, in its twelfth additional provision, stated that universities will have among their organizational structures «equality units» for the development of functions related to the principle of equality between women and men. Certainly these units were created to act in all universities, study programs, areas (students, faculty and administrative staff) and workplaces (departments, institutes, schools, services or units). We consider that it is essential to introduce the gender perspective in university teaching, having to identify the possible gender biases that may exist and achieve their elimination. This can be done with several measures:

a) Include the gender perspective in all degrees and subjects, which affects both the organization of the subjects and the development of the contents. Likewise, the teaching guides must reflect that perspective, both in the objectives and in the competencies, methodology and evaluation, as well as in the recommended bibliography.

b) Include specific subjects. Some degrees have included in their study plans various subjects to promote equality and the gender perspective, while other subjects dedicate some lessons to address these issues. This has meant an important change and an advance in relation to the previous study plans, but it is necessary to incorporate the gender perspective in a transversal way in all the subjects of the degrees.

c) Involve teachers in the inclusion of the gender perspective. The training of the faculty is essential so that they can then transmit the gender perspective to their students. The methodology used will be an element of great importance, as well as the comments made and the language used by the teachers. In this communication we intend to analyze the evolution of all these issues in recent years at the University of Salamanca and how the Equality Unit can act with regard to promoting equality in university teaching.

Bridging the gap between institutional Gender Equality Plans and bottom-up initiatives: how to implement sustainable local actions

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↳ **Keywords:** Gender

Whereas engaging leadership is considered as a key issue for the implementation of GE plans in higher education and research organisations less attention has been paid on how to downscale actions by taking into account local initiatives experienced at the level of scientific teams, labs, units or departments. Several projects assessed the need to involve the top management and the gatekeepers of structural change and created a large set of tools (GEAR Tool, Integer, GE Academy, Athena Swan). But how can such policies spread into the daily working life in the lab and at the office and move away from the chilly climate? What kind of initiatives can install a culture of equality in the working unit? What levers and actions are available to non-managers and mid-level managers to lead the cultural change?Fewer projects tackled this issue (eg. Garcia working paper 15). The issue is to go beyond the actions that are in the hands of the top management (hiring policy, appointments to top positions, achievement awards policy) and share a more gender friendly working culture in the daily interactions. By combining a top-down and a bottom-up approach, actions can be better tailored to specific needs and the number of persons involved in gender equality actions can be broaden far beyond those officially dedicated to those tasks. Embedding gender equality measures at meso- or micro level is also an efficient way to ensure the sustainability of best practices, even at periods when the political and institutional support is lacking.The goal of this workshop is to know more about the methods of implementing actions at local level, to identify the factors that can ease or hinder these actions, to highlight some successful initiatives and innovative ideas targeted towards different scientific communities or staff categories, to assess their impact, and to discuss how to better promote and sustain them. What are the conditions and what is the impact of setting up a network of equality correspondents in every team? How did one researcher manage to bring most male researchers of the lab to the events she organizes relating to GE? How did monthly all-female out-of-the-box lunches improve the sense of belonging in the institution? How did explicit habilitation criteria combined with local

mentoring program improved the self-confidence of female researchers to ask for promotion? In each institution, lab members initiatives yielded tangible results, adapted to the local context.The speakers are senior science managers and researchers from different scientific fields with extended experience in institutional GE plans and the implementation of local initiatives, such as teambuilding events, mentoring, targeted communication, awareness raising initiatives on gender bias, work-life balance measures, promotion of harassment-free working environments, career advancement measures. The coordinators are head of CNRSs gender equality unit (Mission pour la place des femmes au CNRS), who previously coordinated the EU funded projects INTEGER and GENDER-NET and is currently involved in three gender related H2020 projects.

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