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GENDER EQUALITY IN ENGINEERING THROUGH COMMUNICATION AND COMMITMENT

(GEECCO)

WORK PACKAGE 5: Implementing GEPs: Focussing on Recruitment, Career Development of Female Researchers and Female Staff Members

OVERVIEW ON HOW TO INCREASE FEMALE VISIBILITY

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GEECCO – Gender Equality in Engineering through Communication and Commitment. In a Nutshell

Scientific and technological innovations are increasingly important in our knowledge-based economies. Today STEM (Science, Technology, Engineering, and Mathematics) is literally everywhere; it shapes our everyday experiences. With technologies we choose e.g. structures that influence over a very long time how people are going to work, communicate, travel, consume, and so forth. It is thus both a question of competitiveness and justice, to achieve gender equity within science and technology institutions, including policy and decision-making bodies.

GEECCO with its project lifetime from May 2017 to April 2021 aimed to establish tailor-made Gender Equality Plans (GEPs) in 4 European RPOs and to implement the gender dimension in 2 RFOs (funding schemes, programmes and review processes). All participating RPOs were located in the STEM (Science, Technology, Engineering, and Mathematics) field, where gender equality is still a serious problem and whose innovations are increasingly important in the knowledge-based economies.

GEECCO pursued the following objectives in order to enhance systemic institutional change towards gender equality in the STEM-field:

(i) Setting up change framework and a tailor-made GEP for each participating RPO;
(ii) Implementing gender criteria in the activities of RFOs;
(iii) Setting up a self-reflective learning environment in and between all RPOs und RFOs to participate from existing experiences and match them with their specific needs and circumstances.
(iv) Evaluate GEP implementation within the participating RPOs and RFOs with a quantitative evaluation using monitoring indicators and a qualitative monitoring to enhance and fine-tune implemented actions over the course of the project.

http://www.geecco-project.eu/

https://www.tuwien.at/tu-wien/organisation/zentrale-bereiche/genderkompetenz/gender-in-der-forschung/geecco-resultate

Further resources developed by the GEECCO-project consortium

All public deliverables, resources and additional material can be downloaded on this website:

https://www.tuwien.at/tu-wien/organisation/zentrale-bereiche/genderkompetenz/gender-in-der-forschung/geecco-resultate

Public deliverables (in order of the related work packages)

- Postorino, Maria Nadia; Marino, Concettina; Suraci, Federica; Enzenhofer, Bettina; Lusa, Amaia; Costa, Carme Martínez; Pulawska-Obiedowska, Sabina (2018): Gender Analysis of Decision-Making Processes and Bodies. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Postorino, Maria Nadia; Marino, Concettina; Suraci, Federica; Enzenhofer, Bettina; Lusa, Amaia; Costa, Carme Martínez; Pulawska-Obiedowska, Sabina (2018): Overview on Improvements and Procedures. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Bryniarska, Zofia; Żakowska, Lidia; Enzenhofer, Bettina; Postorino, Maria Nadia; Marino, Concettina; Lusa García, Amaia (2018): Current Status of Women Career Development. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Enzenhofer, Bettina; Lusa García, Amaia; Sarnè, Giuseppe; Żakowska, Lidia (2020): Overview on How to Increase Female Visibility. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Knoll, Bente; Renkin, Agnes (2018): Analysis of Current Data on Gender in Research and Teaching. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Ratzer, Brigitte; Burtscher, Sabrina; Lehmann, Tobias; Mort, Harrie; Pillinger, Anna (2020): Enhanced Gender Knowledge and New Content. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Ratzer, Brigitte; Enzenhofer, Bettina (2019): Integrating Gender Dimensions in the Content of Research and Innovation. An Exhibition. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Lasinger, Donia; Nagl, Elisabeth; Dvořáčková, Jana; Kraus, Marcel (2019): Best Practice Examples of Gender Mainstreaming in Research Funding

Organizations. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).

- Dvořáčková, Jana; Navrátilová, Jolana; Nagl, Elisabeth; Lasinger, Donia (2020): Guideline for Jury Members, Reviewers and Research Funding Organizations' Employees. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Lasinger, Donia; Nagl, Elisabeth; Dvořáčková, Jana; Kraus, Marcel (2020): Overview and Assessment of Gender Criteria for Funding Programmes. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Kraus, Marcel; Dvořáčková, Jana; Lasinger, Donia (2021): List of Principles of Communication of Gender Criteria. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Mergaert, Lut; Allori, Agostina; Ratzer, Brigitte; Enzenhofer, Bettina; Lusa García, Amaia; Marino, Concettina; Zakowska, Lidia; Bryniarska, Zofia (2020): Tailor-made Gender Equality Plans (GEP version 3.0). GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Knoll, Bente (2021): Dos and Don'ts while Degendering the STEM Field. Learning Experiences of Four European Universities and Two European Research Funding Organisations. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Mergaert, Lut; Knoll, Bente; Renkin, Agnes (2021): Final Report on Supporting Activities. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Jorge, Irene (2021): Implementation of Dissemination Activities. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Jorge, Irene (2021): Engagement Activities. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Lipinsky, Anke; Schredl, Claudia: Final Evaluation Report. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).

Additional resources and literature reviews

- Knoll, Bente; Renkin, Agnes; Mergaert, Lut (2020): Additional resources (living document). GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Burtscher, Sabrina (2019): Literature Review: Gender Research in Human Computer Interaction. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Pillinger, Anna (2019): Literature Review: Gender and Robotics. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Mort, Harrie (2019): A Review of Energy and Gender Research in the Global North. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).
- Lehmann, Tobias (2020): Literature Review: Gender and Mobility. GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project).

Explanatory videos (available on Youtube)

- Ratzer, Brigitte; Enzenhofer, Bettina (2019): Humans & Computers. Video produced under GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project). Available online at https://www.youtube.com/watch?v=vrWx91RdmGo, checked on 4/30/2021.
- Ratzer, Brigitte; Enzenhofer, Bettina (2019): Robots in our society. Video produced under GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project). Available online at https://www.youtube.com/watch?v=bfXr29VAuwU, checked on 4/30/2021.
- Ratzer, Brigitte; Enzenhofer, Bettina (2020): Energy for all. Video produced under GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project). Available online at https://www.youtube.com/watch?v=tIwrgsNVfW8, checked on 4/30/2021.
- Ratzer, Brigitte; Enzenhofer, Bettina (2021): Mobility for all. Video produced under GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project). Available online at https://www.youtube.com/watch?v=oMIfoI5-14M, checked on 4/30/2021.
- Ratzer, Brigitte; Enzenhofer, Bettina (2021): Inclusive design – why intersectionality matters. Video produced under GEECCO. Gender Equality in Engineering through Communication and Commitment (a H2020 project). Available online at https://www.youtube.com/watch?v=U4eRb1NM21A, checked on 4/30/2021.

Evaluation and monitoring tutorials

Anke Lipinski and Claudia Schredl, both from GESIS, developed five online evaluation and monitoring tutorials.

1. GEECCO Data Monitoring Tool
2. GEECCO Infographic: Gender Equality Approaches and Their Impact on GEP Implementation
3. GEECCO Infographic: SMART Gender Equality Objectives
4. GEECCO Explainer Video: Gender Equality Plans in Technical Universities and the Use of Logic Models
5. GEECCO Log Journal

These tutorials can be downloaded on this website:

https://www.tuwien.at/tu-wien/organisation/zentrale-bereiche/genderkompetenz/gender-in-der-forschung/geecco-resultate

Document versions

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1.0	September 21st, 2020	Final version (Feedback Marjo Rauhala, Lut Mergaert, Lidia Żakowska)	Bettina Enzenhofer

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Table of content

About this document

Task 5.3 is concerned with increasing female visibility in scientific events, in brochures and online material according to the following specifications:

- Increasing the visibility of female researchers' and other female staff members' accomplishments in internal and external events, for example via conference openings, special sessions or panels at university level. The main goal is to depict women as professional experts in the field of engineering (and to avoid showing women only as supporting staff who, for instance, prepare lunch or arrange flowers at engineering meetings, conferences, etc.)
- Introducing a 30% quota for female representation in technical university bodies, for instance research committees, scientific committees and professional boards of experts (except at TUW, where a quota is already in place)
- Creating an image of gender equity in all published documents, images and videos reporting scientific events at technical universities (avoiding the publication and dissemination of material in which men dominate as speakers and leaders if women are represented in those scientific groups, too)

For deliverable 5.3 ("Overview on how to increase female visibility") the task leader asked each RPO to nominate 3 to 5 inspiring examples on how to increase female visibility – specified and put into practice by each RPO. To identify good practices the criteria from the European Institute for Gender Equality (EIGE) were suggested (https://eige.europa.eu/gender-mainstreaming/good-practices/eige-approach). These criteria include that the practice "works well", "is transferable", "shows a learning potential", "is embedded within wider gender mainstreaming strategy" and "has provided achievement in terms of gender equality".

While providing some examples for increasing female visibility, the practices chosen are necessarily limited and cannot cover everything that would be possible. For this reason, a number of further ideas on how to increase female visibility are presented in the first part of this report.

This document can be used by any actors who wish to increase female visibility in research performing organizations.

All links were last accessed on July 21st, 2021.

PART 1: Introduction – Ideas on how to increase female visibility

Starting point: Providing statistics and setting objectives, Quota

Women in STEM are still underrepresented. Processing data about gender (im)balances can offer a valuable starting point for implementing actions aimed at gender equality (such as establishing a quota) and thus for increasing female visibility; data collection represents an important step in gender mainstreaming processes.

Depending on the topic, appropriate indicators may vary. In higher education, for example, **sex-disaggregated figures** related to the percentage of men/women as students, graduates, professorships etc. are often collected, such as in the She Figures of the European Commission or in the yearly report of TU Wien:

- European Commission: She Figures: https://ec.europa.eu/info/publications/she-figures-2018_en
- TU Wien: Frauen und Männer an der TU Wien: Zahlen, Fakten, Analysen VI (own translation: Women and Men at TU Wien. Figures, facts and analyses): https://www.tuwien.at/fileadmin/Assets/dienstleister/abteilung_genderkompetenz/gender_ressourcen/Zahlen_und_Fakten/Frauenbericht/Frauen_und_Maenner_TU_Wien_VI.pdf

Another example of gender equality statistics is to focus on **media representation**. In order to identify and change unequal gender representation, analyzing current publications represents an important step. Within GEECCO, B-NK and Yellow Window outlined the following indicators/questions for published material – these may be useful for any institution intending to analyze gender representation within their publications:

- Are there women/men/non-binary generally visible on websites or printed materials?
- How many women/men/non-binary are visible?
- Do communication materials reflect “diversity” (in terms of sex, age, ethnicity, etc.)? If yes, how and through which media?
- What kinds of photos and images are used to illustrate men/women/all genders and SET in the media?
- What areas of technology and engineering are represented?
- What kind of language is used? Are both women and men visible in the (German, Polish, Italian, Spanish) language?
- Does the media address all genders equally?

Some European Countries (for example Austria and Germany) have already adopted a **third gender option** in legal documents. This raises the question of anonymity in the collection and publication of sex-disaggregated data, given the low number of people who have opted for this third gender option at this point in time (for example in Austria where only 5 people with the civil status “diverse” are registered as stated by the Interior Minister at the beginning of 2020 in response to a parliamentary enquiry); presently only intersex people can apply for this gender option while non-binary people have no possibility for a legal recognition of their gender. The Academy of Fine Arts Vienna has

published a document ("Non Binary Universities. Vade Mekum on Genderfair(er) Higher Education") that focuses on administration of, infrastructure for, and communication with intersex, trans and non-binary students:
https://www.akbild.ac.at/portal_en/university/Advancement-of-Women-Gender-Studies-Diversity/non-binary-universities/NonBinaryUniversitiesVadeMekumAcademyoffineArtsVienna2019_en.pdf

Introducing gender quotas represents a direct means for increasing female visibility. These can be binding or voluntary and may be set by the government, an institution or by research funding organizations. There are different types of quotas – if a 50% quota proves too challenging, it may be practical to think about other targets and target groups (a quota for evaluation committees or the faculty, for example):

- **Cascading Model:** This is a flexible type of quota, in which the target to be reached is based on the proportion of men/women on the immediate level below. There is a German website which calculates individual targets:
  https://www.gender-statistikportal-hochschulen.nrw.de/gleichstellungsquoten
- **Fixed quota for decision-making bodies:** A quota can be introduced with at least 30%, 40% or 50% of women.
- **Appointment committees:** In Europe, there are different regulations in place, for example a minimum number of two female committee members, a minimum composition of one woman and one man, or different quotas – 1/3, 40%, 50% of women.
- **Election procedure:** For the election of its highest decision-making body, Ghent University, for example, introduced a 40/60 quota. Faculties are required to nominate at least one male and one female candidate for the elections. If the gender outcome of the elections is unbalanced (other than 40/60), the candidate from the underrepresented sex who received the highest number of votes replaces the candidate from the overrepresented sex with the least votes. More on this election procedure can be read on the website of EIGE:
  https://eige.europa.eu/gender-mainstreaming/toolkits/gear/examples/election-procedure-board
- **Quota of 100% women:** In 2019, TU Eindhoven introduced a 100% women quota for all new full professors and assistant professors. Men are considered for the vacant position only if hiring a woman has proven impossible for 6 months. More on TU Eindhoven's approach can be found on the website of TU Eindhoven:
  https://www.tue.nl/en/news/news-overview/17-06-2019-tue-vacancies-for-academic-staff-exclusively-for-women-for-the-time-being/

The following publications provide general information regarding the implementation of a quota:

- European Commission: Guidance to facilitate the implementation of targets to promote gender equality in research and innovation by the European Commission:
  https://op.europa.eu/en/publication-detail/-/publication/2aa2585b-1d03-11e8-ac73-01aa75ed71a1
- Gerlind Wallon, Sandra Bendiscioli, and Michele S. Garnkel, EMBO: Exploring quotas in academia:
  https://www.embo.org/documents/science_policy/exploring_quotas.pdf

Gender-sensitive event organization

Female researchers should be as visible at scientific events as their male colleagues – as keynote speakers, at panel discussions, as workshop leaders throughout the event's entire program and also in the audience asking questions. However, too often female researchers are not invited to present their work in a similar manner as their male counterparts, especially in STEM fields.

In 2017 a guideline on the topic of how to plan, organize and conduct gender-sensitive events was published by Austria's "Wissens- und Technologiezentrum Ost," which includes 9 universities in Vienna and 3 universities of applied science in Vienna and Lower Austria (TU Wien is included). This guideline has not been published online, but includes the following topics: considerations on how to choose a topic for the event, considerations on how to address a target group, the briefing of speakers and moderators, considerations with regard to the organization of the event, realization of events, follow-up and documentation of events. "Gender-sensitive" in this guideline not only refers to men and women but also explicitly addresses transgender, intersex and non-binary people.

In order to enable women to travel to conferences and increase female visibility in research, travel stipends for women are a suitable measure. At TU Wien the Faculty of Informatics partially covers the cost of conference participation for female speakers, for example (https://informatics.tuwien.ac.at/women-in-informatics/in-research/#promoting-role-models), and the Faculty of Technical Chemistry also awards travel grants to female researchers (http://femchem.chemie.tuwien.ac.at/?page_id=86).

A study focusing on women's visibility in academic seminars found that in academic settings, seminars and conference talks, women engage less in the discussion and ask fewer questions than men. The study authors suggest that the percentage could be raised if, for example, the initial question is asked by a woman, if there is sufficient/unlimited discussion time encouraging more questions, or if questions/answers are kept short in order to allow more questions to be asked (this is often a matter of chairing). The study can be accessed online: Alecia J. Carter, Alyssa Croft, Dieter Lukas, Gillian M. Sandstrom: Women's visibility in academic seminars: Women ask fewer questions than men: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0202743

The following list provides guidelines for gender-sensitive event organization that are available online:

- Angelika Blickhäuser, Henning von Bargen: Gender-Mainstreaming-Praxis. Arbeitshilfen zur Anwendung der Analysekategorie „Gender" in Gender-Mainstreaming-Prozessen. p. 52-3: Leitfaden zur gender-orientierten Veranstaltungsplanung (own translation: Guide to gender-oriented event planning): https://silo.tips/download/gender-mainstreaming-praxis
- Angie Pendergrass, Jane Zelikova, James Arnott, Hazel Bain, Rebecca Barnes, Jill Baron, Kuheli Dutt, Miriam Gay-Antaki, Rebecca Haacker, Emily Jack-Scott, AJ Lauer, Aisha Morris, Deb Morrison, Anne-Marie Nunez, Heidi Steltzer, LuAnne Thompson: Inclusive scientific meetings – where to start: https://static1.squarespace.com/static/582cce42bebafbfc47a82b04/t/5ca0fe7d9b747a3d7dc7a71f/1554054781756/Formatted+Inclusive+Meeting+Guide-v5.pdf
- Inter-Parliamentary Union: Pursuing gender parity on panels: https://www.ipu.org/sites/default/files/documents/pursuing_gender_parity_on_panels.pdf

- Österreichische Gesellschaft für Umwelt und Technik: Gendersensible Durchführung von Veranstaltungen in FTE-Programmen – Leitfaden (own translation: Guide to gender-sensitive implementation of events and workshops in the RTD programmes of the bmvit): https://www.bmk.gv.at/themen/innovation/publikationen/humanpotenzial/gender_veranstaltungen.html

Database with female experts

Before setting up the agenda of a (scientific) event, it is recommended to explicitly search for female experts. Certain organizers may not experience difficulties in finding female experts because they already have a network/know enough female experts in the respective field. If problems are encountered, using (or compiling) a database of female experts may be advantageous.

Female experts may be found by using the following examples; they can also provide inspiration for setting up databases of female experts:

- AcademiaNet is a database of profiles of excellent female researchers from all disciplines: http://www.academia-net.org
- /femconsult is provided by the Center of Excellence Women and Science (CEWS), a team within GESIS - Leibniz Institute for the Social Sciences. It is Europe's largest recruitment portal for women scientists: https://www.gesis.org/en/femconsult/home/
- The Austrian FEMtech database of female experts is an initiative by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) and has evolved into the most comprehensive database of female Austrian experts in science and technology: https://www.femtech.at/en/femtechs-database-female-experts
- The main aim of speakerinnen.org is to increase the visibility of women in the field of public speaking: https://speakerinnen.org/en

Gender-sensitive language and images

The importance of gender sensitive communication in written language and images has been widely accepted and adopted by many universities and institutions that published guidelines. The following list provides an overview of exemplary European universities and institutions with guidelines on gender-sensitive language and images that could pave the way for working on similar guidelines:

- Angelika Blickhäuser, Henning von Bargen: Gender-Mainstreaming-Praxis. Arbeitshilfen zur Anwendung der Analysekategorie „Gender" in Gender-Mainstreaming-Prozessen. p. 62: Leitfragen zu gender-orientierter Öffentlichkeitsarbeit (own translation: Key questions on gender-oriented public relations): https://silo.tips/download/gender-mainstreaming-praxis
- Büro für nachhaltige Kompetenz: Leitfaden für gender- und diversityfreundliche Mediengestaltung im technisch-ingenieurwissenschaftlichen Bereich (own translation: Guidelines for gender- and diversity-friendly media design in technology and engineering):

https://www.vielefacetten.at/fileadmin/vielefacetten.at/uploads/docs/Buero_fuer_nachhaltige_Kompetenz_2012_VieleFacetten.pdf

- European Institute for Gender Equality: Toolkit on gender-sensitive communication: https://eige.europa.eu/publications/toolkit-gender-sensitive-communication
- Susanne Ihsen, Ester Höhle: Leitfaden zur zielgruppengerechten Ansprache in der Öffentlichkeitsarbeit von Technischen Universitäten am Beispiel der Fakultät Elektrotechnik und Informationstechnik der Technischen Universität München (own translation: Guideline for addressing specific target groups in the public relations work of technical universities using the example of the Faculty of Electrical Engineering and Information Technology at the Technical University of Munich): https://cdn.website-editor.net/2bcbf01942154487baf745ad232c2942/files/uploaded/Technische%2520Universit%25C3%25A4t%2520M%25C3%25BCnchen%2520%25281%2529.pdf
- National Council of Teachers of English: Statement on Gender and Language: https://ncte.org/statement/genderfairuseoflang/
- Reutlingen University: Guidelines for using gender-sensitive language in communication, research and administration: https://eige.europa.eu/sites/default/files/reutlingen_university_guidelines_for_using_gender-sensitive_language.pdf
- RWTH Aachen University: Geschlechtergerechte Sprache. Handreichung (own translation: Gender-sensitive language. Handout): https://www.rwth-aachen.de/global/show_document.asp?id=aaaaaaaaaaamswi
- Schweizerische Bundeskanzlei: Geschlechtergerechte Sprache. Leitfaden zum geschlechtergerechten Formulieren im Deutschen (own translation: Gender-sensitive language. Guide to gender-equitable formulation in German): https://www.vielefacetten.at/fileadmin/vielefacetten.at/uploads/docs/Schweizerische_Bundeskanzlei_2009_Leitfaden_geschlechtergerechte_Sprache.pdf
- TU Berlin: Geschlechtersensible Sprache – Ein Leitfaden (own translation: Gender-Sensitive Language - A Guideline): https://www.tu-berlin.de/fileadmin/i31/Publikationen/Weitere/KFG-Sprachleitfaden.pdf
- UNESCO: Guidelines on gender-neutral language: https://unesdoc.unesco.org/ark:/48223/pf0000377299
- Vienna University of Economics and Business: Fair und inklusiv in Sprache und Bild. Ein Leitfaden für die WU (own translation: Fair and inclusive language and images. A guideline for the Vienna University of Economics and Business): https://www.wu.ac.at/fileadmin/wu/h/structure/about/publications/aktuelle_Brosch%C3%BCren/fair_und_inklusiv.pdf

In an intersectional approach, it is important to not only focus on men and women, but on all genders (including for example transgender, intersex or non-binary people) and on groups of people who tend to be underrepresented in communication, for example people with disabilities, people of color, gay parents etc. The following guideline examples address diversity and lend themselves to be illustrative models for the publication of a similar guideline:

- Goethe-Universität Frankfurt am Main: Handlungsempfehlungen für eine diversitätssensible Mediensprache (own translation: Recommendations for a diversity-sensitive media language): https://www.uni-frankfurt.de/66760835/Diversit%C3%A4tssensible_Mediensprache.pdf
- Johannes Kepler Universität Linz: Platz für gerechte Kommunikation. Leitfaden für eine inklusive Sprache (own translation: Space to communicate fairly – Guidelines for inclusive

language use):
https://www.jku.at/fileadmin/gruppen/39/Sprachleitfaden_Langversion_A5-FINAL_bf.pdf
and accessible/easy language version: Inklusive Sprache – Was bedeutet das kurz erklärt? Ein Sprachleitfaden (own translation: Inclusive language in a nutshell – a language guideline):
https://www.jku.at/fileadmin/gruppen/39/Sprachleitfaden_LeichteSprache_A5-FINAL_bf.pdf

- Rachele Kanigel: The Diversity Style Guide:
https://www.diversitystyleguide.com/
- Koordinierungsstelle Chancengleichheit Sachsen (KCS): Ausgesprochen vielfältig. Diversitätssensible Kommunikation in Sprache und Bild. Eine Handlungsempfehlung (own translation: Pronouncedly diverse. Diversity sensitive communication in language and images):
https://www.kc-sachsen.de/files/chancengleichheit/Publikationen/2104_Koordinierungsstelle_Ausgesprochen_vielf%C3%A4ltig_PDF.pdf

Role Models

Due to women's underrepresentation in STEM fields, there is a lack of visible female role models. However, visibility of female experts as lecturers, professors or project leaders is important to encourage other women because firstly, they become aware that there *are* women in a male-dominated field and secondly, why should it not be possible for female junior researchers to build successful careers if other women have already done the same? While it is essential to increase the number of women in all STEM positions (especially in top positions), already existing role models should receive more visibility. The following list provides a number of ideas on how the visibility of role models could be increased:

- Interviews: Interviews with female role models could be organized. These interviews could be presented in publications, podcasts, videos, or on a website. An example at TU Wien is the website "Frauenspuren" which includes interviews with female researchers at TU Wien as well as female award winners:
https://www.tuwien.at/tu-wien/organisation/zentrale-services/genderkompetenz/frauenspuren
- Posters: Posters with female role models could be designed and put up on campus, in hallways, in offices etc. For example, the University of Lancashire has realized a poster campaign with female researchers. Also, the "Nevertheless" podcast has produced 8 posters with female STEM role models which can be downloaded in 8 languages for free:
https://medium.com/nevertheless-podcast/stem-role-models-posters-2404424b37dd
- Resources: Providing sufficient resources to female researchers in order to ensure that they have sufficient support/time to give interviews could also be an option.

Awards and scholarships

Award and/or scholarship committees should include women. Additionally, awards/scholarships for women can help in increasing female visibility in STEM. In general women should be encouraged to apply for awards and scholarships. Women who win awards function as role models, while the public relations work done in the context of awards simultaneously contributes to the visibility of women.

Awards for scholars may raise young women's interest in STEM and therefore may (later on) boost female visibility at technical universities as well. The following list presents a number of examples for awards for women:

- The "TU Frauenpreis" at TU Wien honors successful graduates who in their professional lives have implemented projects or achieved other things of particular social, economic or scientific relevance: https://www.tuwien.at/tu-wien/organisation/zentrale-services/genderkompetenz/frauenspuren/ausgezeichnete-frauen/preistraegerinnen/frauenpreistraegerinnen/
- The Iris Fischlmayr Awards and Scholarship at JKU Linz is an award for outstanding, diversity-related MA/diploma theses/doctoral dissertations in the fields of social and economic science, law, and/or medical sciences. The scholarship supports female researchers to complete their dissertation: http://www.genderplattform.at/?p=1244&lang=en
- The Clara von Simson Prize at TU Berlin is awarded annually for the best diploma dissertations by female graduates. Preference is given to dissertations in natural sciences and engineering: https://www.tu-berlin.de/zenfrau/menue/programme/clara_von_simson_preis
- TU Austria organizes an award for female pupils in Austria ("Technikerinnen der Zukunft", own translation: "Future Female Engineers"). It is an annual award with changing assignments: in 2019 female pupils were asked to portray a woman in STEM who inspires them (https://www.tuaustria.ac.at/veranstaltungen/preise/tu-austria-maedchenpreis-2019), in 2020 the assignment was to conceive a technical idea/invention (https://www.tuaustria.ac.at/veranstaltungen/preise/tu-austria-maedchenpreis-2020).

Tool Boxes

Several tool boxes and good practices have been published and are ready for use in order to obtain more ideas on how to implement gender equality in institutions such as universities, for example:

- Good Practices by the European Institute for Gender Equality: https://eige.europa.eu/gender-mainstreaming/good-practices
- Methods and Tools by the European Institute for Gender Equality: https://eige.europa.eu/gender-mainstreaming/methods-tools
- A Toolbox of Genderplattform gives insights into the manifold strategies, programs, initiatives and projects concerning gender equality that have been devised and implemented at Austrian Universities: http://www.genderplattform.at/?page_id=846&lang=en
- The INKA database presents examples of equal opportunity measures in science and research: https://www.gesis.org/starq/inka/recherche?locale-attribute=en

PART 2: Inspiring practices of TUW, UPC, UNIRC and PK

Part 2 of this report presents best practices regarding female visibility at TU Wien (TUW), Universitat Politècnica de Catalunya (UPC), Università degli Studi Mediterranea di Reggio Calabria (UNIRC) and Politechnika Krakowska (PK). In order for other universities to be able to utilize these best practices easily, each of the subsequent 16 best practices are presented in a structured way as follows:

- Thematic area (Scientific event, gender-sensitive language, …)
- Description
- Goals and impact
- Factors such as policy context, organizational context or team context – circumstances that helped or were required to implement a specific action
- Contact

TUW: Celebration year "100 years of women's enrolment at TU Wien"

Thematic area: project, discussions, exhibitions, award ceremonies, information events, mentoring events, networking events, festivities, cultural events, lectures, conferences, symposia, workshops

Description: In 1919, a decree finally permitted women to enroll at technical universities in Austria. A 100 years later TU Wien celebrated this anniversary appropriately and organized a year full of various events and formats such as discussions, exhibitions, award ceremonies, information events, mentoring and networking events, festivities, cultural events, lectures, conferences, symposia and workshops (full list of events: http://dietechnik.at/veranstaltungen). In doing so, it was essential to designate a central event coordinator tasked with keeping an overview of all the activities and providing a central point of contact. TU Wien also collaborated with an agency that designed a logo as well as a communication campaign. "100 years of women's enrolment at TU Wien" was visible not only in the media and on social media but also on infoscreens in public transport. Posters were displayed on the campus of TUW, for example in entrance areas or on certain elevator doors, and also in selected Viennese schools. "Visible" refers to images of female TUW researchers, quotes of these women, as well as the claims "*die* Technik" ("Technik" means "technology", in German the female article "die" is used, therefore highlighting the article connotes that technology is female) and "Frauen schreiben Technik Geschichte" (own translation: "women write technological history").

A ceremonial act where the Federal Minister of Education, Science and Research held the opening speech was organized in the anniversary year. Additionally, a festschrift was published reviewing the history of women at TU Wien. The festschrift includes facts and figures from 1919 to 2019 regarding the number of students and graduates as well as political facts, biographical portraits of female pioneers at TUW with photographs of all female TUW professors, various articles on gender equality in STEM/TU Wien, interviews with gender equality experts and female professors at TUW as well as a word rap with female students.

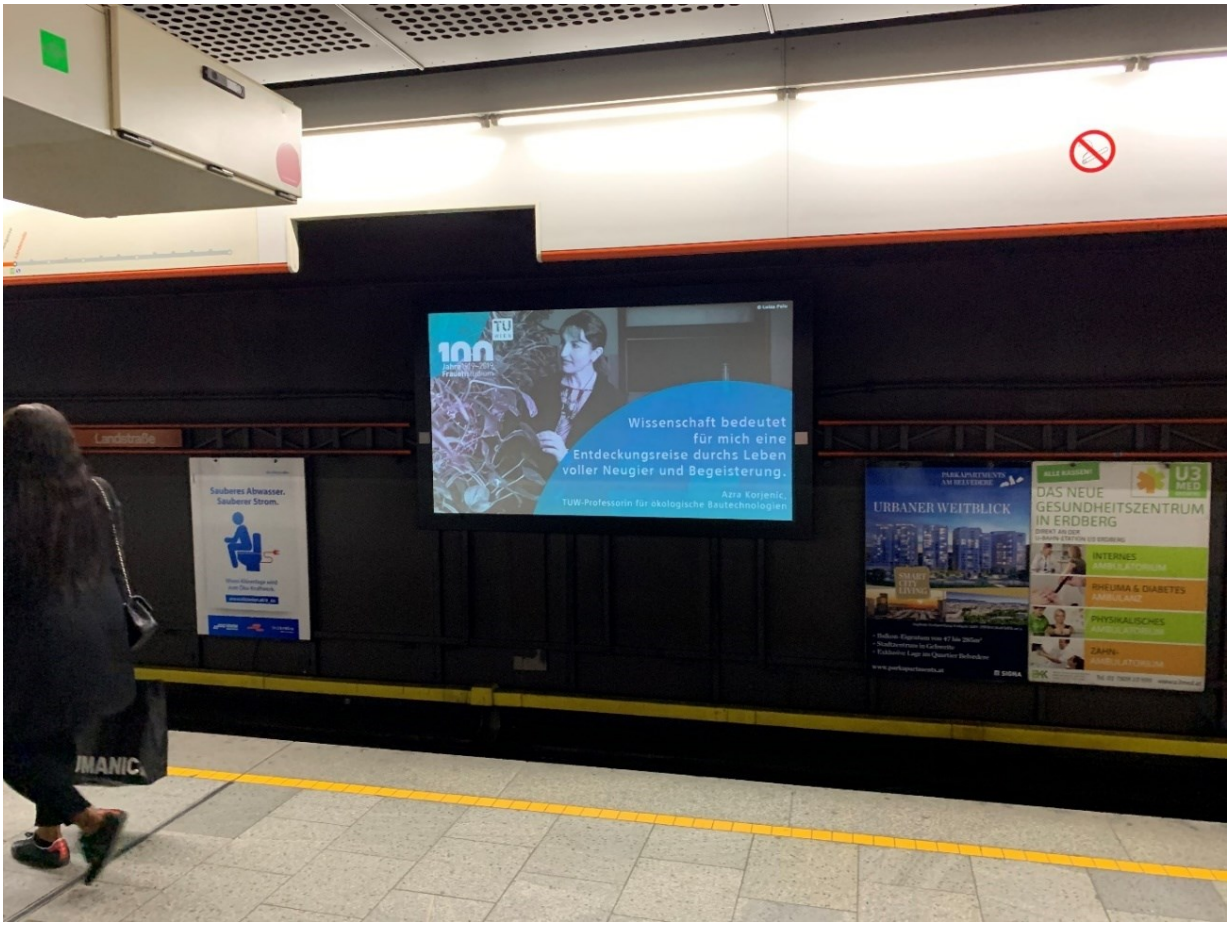
The website of "100 years of women's enrolment at TUW" can be accessed via this link: http://dietechnik.at/

Goals and impact: Four years before this anniversary, TU Wien celebrated another anniversary – 200 years of TU Wien. In 2019, the "100 years of women's enrolment at TU Wien" celebration aimed to be as professional and as big as the celebratory events surrounding "200 years TU Wien" – with

gender equality and female researchers at the center of attention. Regarding sustainability, numerous of the activities resulted in outputs such as exhibitions or publications, long-lasting products that can be distributed to future audiences also.

Factors: TUW could not have organized the 100 years of women celebration events without our sponsoring department which raised the required budget. Also, additional staff (namely a project coordinator) was required in order to manage this project/the different events.

Contact: Helga Gartner (project coordinator): helga.gartner@tuwien.ac.at



Public campaign: info-screen in a metro station showing a female professor of TU Wien, quote "For me, science means a journey of discovery through life, full of curiosity and enthusiasm" © TU Wien/Matthias Heisler

Public campaign: Adhesive film on elevator doors showing female professors of TU Wien and the claim "women write technological history" © TU Wien/Matthias Heisler

TUW: Exhibition "Woman.Muslim.Technology"

Thematic area: exhibition, awareness raising, intersectionality, role models

Description: Asma Aiad is a Muslim photographer and gender expert who designed the exhibition "Frau.Muslimin.Technik" (own translation: "Woman.Muslim.Technology") at TUW in which she portrayed female Muslim TUW students. Each of the 15 women portrayed were presented through one photo, a short overview of their professional background and a quote on their thoughts on being a Muslim woman in STEM. With its intersectional approach, this exhibition raised awareness on various topics: not only does it render women in STEM visible but Muslim women – women who face multiple discrimination on the basis of their gender, religion and/or origin: as women, as Muslim women, and often as women with a migration background. Furthermore, the exhibition breaks with the stereotype of "the" Muslim woman.

More information on the exhibition can be found via this link:
http://dietechnik.at/2019/01/10/frau-muslimin-technik/

Goals and impact: This project made Muslim women more visible in technology – aiming at counteracting clichés and deconstructing stereotypes. The depiction of different Muslim women working in a wide range of technical fields contributes to establishing an image of women and diversity in technology.

It is easily possible to re-print and show the exhibition at different locations/in different countries, since it was compiled digitally. Throughout the year 2019 – during the course of the celebration events for "100 years of women at TUW" – the exhibition was shown at 9 different TUW locations.

Factors: There are no relevant factors that have to be considered except for a budget for the production of the exhibition (special paper in line with fire protection rules) and suitable location(s)/permission to display the exhibition.

Contact: Asma Aiad (photographer): www.asmaaiad.com, Instagram: asmaaiad

On the left: Poster of the exhibition showing a female Muslim civil engineer, the quote reads as follows (own translation): "These studies are my dream and nobody can stop me from living it. To put it in a nutshell: Heads up, wrap your hijab & get your degree!" © Asma Aiad

On the right: Poster of the exhibition showing a female Muslim mathematician, quote (own translation): "Of course I was an exception throughout my studies - as a woman, and as a Muslim woman at that." © Asma Aiad

TUW: Symposium "Humans and Machines. Prospects for our Digital Future"

Thematic area: scientific event

Description: The symposium "Humans and Machines. Prospects for our Digital Future" took place on October 29, 2019 (9:30 a.m. to 5 p.m.) at TUW and was organized by Brigitte Ratzer, head of TUW's Office for Gender Competence. This symposium was an extraordinary event for female visibility because only female researchers were invited as speakers. These experts were given the opportunity to speak about their own research on robotics, big data and artificial intelligence. Another noteworthy aspect in relation to organizing this symposium was the fact that although only women were invited as speakers, the symposium was not explicitly promoted as an all-female event. Rather,

it was promoted as a regular scientific symposium focusing on relevant up-to-date research topics. In total, 14 lectures were held by 8 researchers. Additionally, 2 explanatory videos on gender and robotics and gender and HCI (produced within GEECCO) were presented for the first time.

The program of the symposium can be found via this link:
http://dietechnik.at/wp-content/uploads/2019/11/211019_programm_symposium.pdf

The presentations and videos of the symposium are available via the following link:
https://www.tuwien.at/en/tu-wien/organisation/service-providers/gender-competence/gender-in-research/symposium/

Goals and impact: Giving attention to female researches in these fields is necessary because many technical advances are funded exclusively by male investors and made by male development teams. At the symposium, the researchers reflected on their own work, critically examined their disciplines and also addressed the responsibility that researchers have in shaping our digital future – while also pointing out possible undesirable developments. The symposium brought together about 100 researchers and avid listeners and made the excellent female researchers of TUW visible.

Factors: This symposium was organized as part of the "100 years of women's enrolment at TUW" events. It would have been possible to organize it as a stand-alone measure also, but this would have required an individual budget to cover payment of both moderator and keynote speaker (including travel costs) as well as the fees for location and catering.

Contact: Brigitte Ratzer (organizer): brigitte.ratzer@tuwien.ac.at

TUW: Seminar "100 years of good behavior is enough" – exhibition with female role models/feminist hurdle race/publication

Thematic area: teaching, role models, action in the public space, awareness raising, exhibition, publication

Description: In 2019, Karin Hiltgartner and Petra Hirschler held the seminar "Fokus: Sozialer Raum und Diversität – 100 Jahre brav sind genug" (own translation: "Focus: Social space and diversity – 100 years of good behavior is enough") over two semesters. This seminar for students of architecture, civil engineering and spatial planning addressed the barriers, hurdles and obstacles that gender equality faces. One of the main assignments for the students was to portray female pioneers in architecture, civil engineering and spatial planning. The students were allowed to work quite independently. They created a list of female role models and interviewed them. In these interviews, the pioneers talked about their education, career and family life and gave tips on how to overcome challenges. The 17 portraits were printed and an exhibition with photos and selected quotes was mounted. By following the QR-Code on the posters of the portrayed women, visitors are able to watch the interviews in their entirety. Additionally, a book was published ("100 Jahre brav sind genug", own translation: "100 years of good behavior is enough"), containing the results of another main assignment of the seminar: a feminist hurdle race which was organized within the framework of "Karlstag" (a festival of art and culture) on May 17, 2019. The idea for "Karlstag" was for TU Wien to participate with an innovative format. Also, the course lecturers aimed at creating public visibility instead of staying within the University building. For the hurdle race, the distance between the metro entrance at Karlsplatz and the main building of TU Wien was paved with nine different thematic hurdles, inviting active participation. For example, one hurdle was to hopscotch with a heavily loaded

shopping bag, baby doll and plan roll. Another hurdle was the "wall of discrimination" which also illustrated the students' intersectional approach: the wall visualized countless prejudices, for example prejudices against students from rural areas speaking dialect, feminine-looking men or women wearing a hijab. At the back of this wall, the visitors were invited to leave positive messages. To conclude the day, a female-only band with feminist messages performed in front of TU Wien.

The seminar description can be accessed via this link: https://tiss.tuwien.ac.at/course/courseDetails.xhtml?dswid=9019&dsrid=813&courseNr=280615&semester=2019S

Goals and impact: The objective of the seminar was to raise awareness for gender (in)equality and to make visible female pioneers in architecture, civil engineering and spatial planning. 20 students attended the seminar and were filled with enthusiasm (even though gender aspects in architecture/spatial planning are usually not part of teaching, they had been quite aware of gender inequality even before the seminar). While the hurdle race was a singular event (which had a lot of participants ranging from the elderly to young people), the exhibition and publication are products that can be distributed. Also, these actions have fostered close cooperation with "Claiming Spaces", a bottom-up collective at TU Wien including a group of students, graduates, teachers and researchers seeking to advance intersectional feminist perspectives in architecture and spatial planning.

Factors: These actions took place in 2019 when TU Wien had its huge "100 years of women's enrolment at TU Wien" celebration series. The exhibition as well as the publication require a budget (special paper in line with fire protection rules is expensive). It is also important to take into consideration the necessary permissions (hurdle race: permission to conduct this event in the public sphere; exhibition: permission to display the exhibition in the University while complying with fire protection rules). Furthermore, it is important to find allies and develop the idea around a broad base, and to work in an interdisciplinary manner (look beyond your own field of study) – as this will result in a huge impact. If you want to organize these actions: keep being annoying, you will get there.

Contact: Petra Hirschler: petra.hirschler@tuwien.ac.at, Karin Hiltgartner: karin.hiltgartner@tuwien.ac.at

Portraits of the exhibition as shown in the publication "100 Jahre brav sind genug"

TUW: Gender-sensitive language

Thematic area: written language, pictures, brochures

Description: Within an organization, its department of communication fulfils a crucial role regarding female visibility. Via language and images, this department is communicating to members of the organization as well as to people outside the organization: it publishes press releases, articles, brochures and organizes events. At TUW the Service Unit of PR and Marketing and its staff are committed to gender equality, and therefore participated in gender equality training. In the context of GEECCO, all material produced by this department was analyzed for language and image selection. The department received feedback regarding gender equality in their material. As a result, the department's entire communications and all its material, regarding both images as well as written language have been gender-sensitive ever since.

Goals and impact: Given that language and images create reality, gender-sensitive language (written language as well as image selection) has an important impact on gender equality. In order for this approach to be sustainable, a Gender Equality Plan (see below) should be in place and the PR department's staff should be gender-competent.

Factors: At TUW a Gender Equality Plan ("Career Advancement Plan for Women at TU Wien", https://www.tuwien.at/fileadmin/Assets/tu-wien/TU_fuer_alle/AKG/Career_Advancement_Plan_for_Women_at_TU_Wien_2017.pdf) is in place since 2004 which includes:

"§ 11 Use of gender-responsive language

(1) All bodies and administrative units of TU Wien shall use gender-responsive language in their releases, forms, minutes, speeches and other notifications directed at the general public or members of the University. (2) Any wording as well as names of governing bodies and positions shall be chosen such that they refer to both women and men in equal measure. (3) The use of boilerplates that, for example, at the beginning, at the end or in the footnotes of a text state that the chosen references to people apply to both genders shall not be permissible. (4) Gender-responsive language shall also be used in teaching (e.g. in course announcements, teaching materials, academic papers)."

Contact: Service Unit of PR and Marketing: pr@tuwien.ac.at, Website Service Unit of PR and Marketing: https://www.tuwien.at/tu-wien/organisation/zentrale-services/pr-und-fundraising/pr-und-marketing/

TUW Homepage in spring 2020 showing a female electrical engineer at work, this picture was online for several months

UPC: Twitter campaign #mésDonesUPC

Thematic area: Social Media campaign, role models

Description: The Twitter campaign #mésDonesUPC (which means “more UPC women”) was launched in March 2018 and is still ongoing. Each week, the communication services of UPC publish a tweet from the official UPC twitter account (@la_UPC) with the hashtag #mésDonesUPC. Each tweet includes a photo of a woman at UPC (teaching and research staff as well as students) and a brief description of her main achievements. Visibility, for example is given to researchers who lead research projects, professors who stand out for some innovative teaching activity, professionals who promote innovative projects in the management of the University, students who participate in unique projects, or alumni who excel in their professional field.

Goals and impact: UPC launched this campaign with the aim of giving greater visibility to UPC’s female talent and providing benchmarks in the fields of engineering, architecture, science and technology beyond a specific date. The aim of the campaign is to provide female references in areas where women still are a minority (engineering, architecture, science and technology), to highlight the work accomplished by women in the respective field, to bring STEM studies closer to girls and, in short, to showcase the female talent of UPC women. Given that this initiative encourages the dissemination of proposals with the hashtag #mésDonesUPC, it isopen to the participation of the university community and society in general. UPC members who use twitter have by now become aware of the campaign, many UPC members also use the hashtag. As do schools and faculties when creating their own tweets about UPC women. The measure is sustainable because it does not require extensive resources (there is one person in the communication services who prepares the tweets, dedicating roughly one afternoon per week to them).

Factors: The measure was conceived as a form of preparation for the granting of an honorary doctorate to Margaret Hamilton, an event which took place in October 2018. It quickly became evident that it was a very positive and popular action, therefore, the university decided to continue it. Of course, collaborating with communication services was essential because this action requires a certain amount of working time.

Contact: https://igualtat.upc.edu/ca/contact

Three examples of tweets presenting female engineers

UPC: UPC women week

Thematic area: Scientific events, social events, conferences, exhibitions, round tables, workshops, celebrations, talks, presentations, role models

Description: Coinciding with celebrating the International Day of Women and Girls in Science on February 11, the UPC organized a series of activities aimed at increasing the visibility of women's contributions in the field of science, engineering and architecture. In this first edition, one day was also dedicated to providing resources and tools for including the gender dimension in university teaching. Women's Week at the UPC is promoted by the Vice-rectorate for Social Responsibility and Equality, together with the network of equality officers at the schools and faculties and the UPC's equality office. The university as well as each school/faculty organized different activities (round tables, exhibitions, celebrations, workshops etc., the program can be accessed via this link: https://igualtat.upc.edu/ca/setmana-dona). Organization and coordination of these activities at the respective schools/faculties was delegated to the gender officers. In each school/faculty, a member

of the management board is appointed gender equality officer; together these officers form the network of gender equality officers. Type and content of the activities depended on the people (staff and students) active in the individual school/faculty. For example, if a feminist students association existed within a certain school, they were asked to organize an activity. Likewise, if a school had a research group or researchers active in gender equality, these persons were invited to either organize an exhibition or a talk or to participate in a round table.

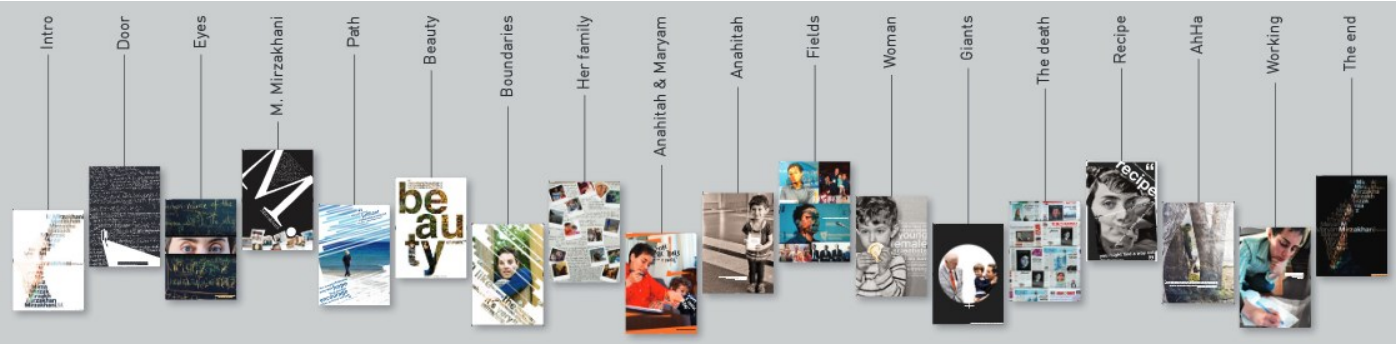
The following list shows a number of examples of activities:

- Workshop – The Gender dimension in teaching at UPC (regulations, tools, resources, projects, etc.)
- Talk – "Girls, women and water"
- Talk – "(In)visible ingenuity" (originally "l'Enginy (in)visible" in Catalan; "Enginyeria", which means engineering comes from "enginy", which means ingenuity or wit)
- Talk – "Experiential experience of a woman at UPC in the field of Technology and Science"
- Presentation of the book "Gender urbanism: for a radical transformation of living spaces"
- Round table of women in mathematics and physics
- Round table "Visible women cycle: Entrepreneurship"
- Round table for secondary school female students: "What do you want to be when you grow up? An Engineer!!"
- Round table of students from the school in which girls' motivations and access to engineering were discussed
- Bibliographic exhibition on the inclusion of the gender perspective in architectural and urban design
- *To Draw is to Observe* – Exhibition of drawings of works by female contemporary architects, drawn by students of the subjects of Drawing I and Drawing II, academic years 2018-2019/2019-2020.
- Integrating the gender dimension in the contents of research and innovation. Exhibition on the European project H2020 GEECCO.
- The "Carousel" – Projection of outstanding women in science and technology in the hall of one school and on screens of computers.
- Women in naval, marine and nautical engineering. Exhibition of posters made by undergraduate students to present their final grade project as well as a poster on gender equality policies for the inclusion of the gender dimension in maritime studies: a case study explaining the impact of gender policies at selected universities and detailing the pilot project implemented at the UPC, Teaching and Gender, for the incorporation of the gender perspective in teaching.
- "Remember Maryam Mirzakhani" – Exhibition. Female teachers from the Mathematics department and other departments linked to the Faculty of Mathematics and Statistics gave a brief introduction to each of the posters, contributing their perspectives and personal experiences.
- Exhibition – "Women Breaking Barriers. Transforming Mediterranean cities"
- Dissemination of the dossier "Women in the maritime sector"
- Laboratory activities (programming apps and robots) for girls between the ages of 12 and 14.
- "Equalometer": The activity consists of placing a panel where, in a very graphic and simple way, the school community can evaluate gender equality in everyday life in different contexts.

Goals and impact: The aim was to make the contribution of women in the field of science, engineering and architecture visible. Around 20 activities were organized. The university wants to organize this women's week every year. The action is coordinated by the Equality Office.

Factors: One activity was organized by the university while all other activities were organized by the schools and faculties. In order to so, collaboration between schools and faculties and also the collaboration of students' associations and people from the academic and administration staff willing to organize activities was essential.

Contact: https://igualtat.upc.edu/ca/contact



Exhibition "Remember Maryam Mirzakhani" © IMU

UPC: AQUÍ STEAM

Thematic area: project, girls in STEM

Description: AQUÍ STEAM (in Catalan it sounds like "we are here") is an initiative of UPC to attract female talent to study technology and engineering, specifically targeting girls between the ages of 9 and 14 living in Catalonia. The UPC offers this project to schools and institutes in Catalonia highlighting the areas of STEAM (science, technology, engineering, art and mathematics) and showing that professional skills are not linked to gender. The project includes a training program aiming at teachers of primary and secondary schools in order to introduce a gender perspective in educational action in accordance with the principles of co-education and equal opportunities.

UPC offers to primary and secondary schools under this program contain the following:

- Registration and free participation in the training program "How to incorporate STEAM actions in our schools. Designing action plans for primary and secondary education", a workshop aimed at primary and secondary school teachers with didactic proposals to encourage scientific and technological vocations in the classroom from a gender perspective. The extent of the training is 5 hours per day for 3 days (15 hours). It includes the following activities: presentation of the activities of STEAM vocations and the importance of the incorporation of a gender perspective; sample of experiences and resources available to schools to integrate the gender perspective in STEAM at both center and classroom level.
- Presentation of proposals by experts from different fields aiming at contributing ideas to elaborate the center's action plan; designing an action plan; tools to help boost implementation of the action plan in schools.
- Recognition of schools that promote specific actions for gender equality and the promotion of scientific and technological vocations among their students through the AQUÍ STEAM

badge, which links the network of participating primary and secondary schools. The seal will establish a common framework for deploying pedagogical innovation projects in these areas in schools.

- The registration and participation of schools in the program of activities to promote scientific and technological vocations organized by the UPC (talks, conferences, informative workshops, visits, etc.) in the framework of information actions and study guidance.
- The creation of a space for generating and experimenting with ideas and proposals that promote new synergies between primary education and the university in the fields promoting technological vocations and gender equality through a platform with practices, pedagogical resources for teachers, methodologies, activities for students, etc. The platform features a number of guidelines (for inclusive language, for giving visibility to women, etc.), videos for the classroom, visits to UPC (for boys and girls) etc. (https://aquisteam.upc.edu/ca/recursos_ca) and it will continue to be filled over the coming years.

Goals and impact: Similar to other universities in the STEM field, the number of female students at UPC ranges from low to extremely low in certain subjects. With guidance and awareness actions aimed at counteracting the stereotypes and gender roles associated with engineering and technology, the AQUÍ STEAM initiative aims to promote scientific and technological vocations, especially among primary school students. New role models and female experts in the fields are made visible, empowering girls and improving the prominence of professionals linked to STEAM. The results of the measure cannot be assessed yet, but the program led to the implementation of many activities. The year 2019/2020 was the pilot of the program; due to the COVID-19 crisis, not all the planned activities were put into practice. There are 28 participating primary and secondary schools. Sustainability of the program depends upon UPC members' collaboration who participate solely on a voluntary basis, and on the allocated budget. Also, the collaboration of different private and public institutions is essential.

Factors: The project is premised on the collaboration of staff members (mostly women both from academic and administration staff). Its specific budget is 30.000€ per year and it was disseminated to primary schools in Catalonia. Schools who wanted to participate registered for the project. The participating UPC members received training and each contributing staff member remains in contact with one school. Furthermore, there are different institutions which collaborate with the project, both public and private (https://aquisteam.upc.edu/ca/entitats-col-laboradores).

Contact: https://aquisteam.upc.edu/ca/contacte

UNIRC: Encourage high school girl students to choose STEM university courses

Thematic area: open days, brochure/video, female students in STEM

Description: "Open days" are held annually with the aim of addressing high school students in their final year. In order to encourage female students to choose STEM courses, a special section was planned in 2020, providing clear and suitable information on the opportunities such a decision could have for their future professional life. The first test of such a special section was held on May 20, 2020, during the online Open Day (which took place online due to the COVID emergency). Using suitable videos, the presentation was realized by the staff of the delegate for "enrollment and communication" of the Department of Civil Engineering, Energy, Environment and materials (DICEAM), Concettina Marino (http://geecco.unirc.it/images/video/VID-20200605-WA0000.mp4,

http://geecco.unirc.it/images/video/VID-20200605-WA0001.mp4). In addition, brochures were produced and distributed (http://www.geecco.unirc.it/images/pdf/open%20day.pdf).

Goals and impact: This measure was implemented because traditional "Open Days" presentations are of a general nature and do not explicitly address female students. However, due to the fact that STEM fields are considered a "male sector", the dedicated section, in our opinion, is particularly necessary. By emphasizing selected important female professionals (see for example the brochure), girl students may consider choosing STEM universities as a possibility. With this measure, we want to encourage female students to be part of "the academic family" and to bring their potential to STEM fields. Note that this kind of measure is also explicitly supported by the "Strategic Development Plan" of the university, which considers the increase of female students as one of its specific targets. The measure does not require a special budget or human resources and is completely sustainable in the future.

Factors: UNIRC has many STEM departments that are interested in increasing the number of their students (especially female students), also in order to improve their image – e.g., as a friendly and open-minded department.

Contact: People responsible for Open Days events are generally assigned by each Department at the beginning of each academic year. In 2020, Concettina Marino was responsible for the Department of Civil Engineering, Energy, Environment and Materials (DICEAM): concettina.marino@unirc.it

Two pages of the brochure highlighting female pioneers in STEM © UNIRC

UNIRC: Guidelines for evaluation boards

Thematic area: guideline, unconscious gender bias, recruitment

Description: The aim of this guideline is to provide members of evaluation boards with suitable information about the existence of unconscious prejudices and biases when examining candidates applying for different academic positions. Selected practical examples of do's and don'ts are particularly emphasized and described in greater detail in order to raise awareness of gender issues. This document was approved and adopted by all departments of the Mediterranea University of Reggio Calabria. The guideline can be accessed via this link: http://geecco.unirc.it/images/pdf/GEECCO_Boards.pdf

Goals and impact: The process of assessing candidates for (both associate and full) professor's positions does not depend on internal academic staff, because the (three) members of the evaluation board are generally selected from a national list of suitable, highly qualified academics. Depending on the specific department's rules, no less than two thirds of the members must be selected from the list, and a maximum of one member may be selected from the department's academic staff.

In contrast, for starting academic positions, e.g. PhD and research grants, the process is entirely managed at the departmental level. For this reason, the document developed and approved by all the departments of the Mediterranea University of Reggio Calabria aims to raise academic staff's awareness of gender issues and potential biases when evaluating applications of people (mainly female applicants) applying for access to PhD and research grants. It is expected that the knowledge acquired by committee members will also be useful when they participate in other evaluation committees at other universities. This action can thus potentially disseminate good practice all across the country.

The local impact of this measure is still unknown at this time, although it raised a lot of interest among the academic community. Besides distributing the guideline to the members of evaluation boards, some courses on the contents of this guideline will be organized after the summer break (2020). The measure does not require a special budget or human resources and it is completely sustainable in the future.

Factors: In STEM evaluation committees, men are predominantly present, also because the number of female STEM academics is still lower, and there is a known unconscious tendency to give preference to candidates belonging to their own sex. We expect that a greater awareness of the presence of unconscious bias aspects will help deserving women to succeed.

Contact: Concettina Marino: concettina.marino@unirc.it

UNIRC: Gender-sensitive language

Thematic area: guideline, language

Description: Communication is one of the areas where stereotypes and prejudices are predominantly produced and conveyed, consciously or unconsciously. Communication in all its forms (audiovisual, symbolic, verbal, gestural) can help to consolidate or exacerbate asymmetries already present in society, but can also contribute positively to changing and counteracting stereotypes and customs.

UNIRC's "Guideline for the use of a gender-sensitive language" was approved by the Mediterranea University of Reggio Calabria with Rectoral Decree n. 352 of 21/12/2018. It can be accessed via this link: http://geecco.unirc.it/images/Linee_guida_uso_linguaggio_Unirc.pdf

Goals and impact: Communications at the Mediterranea University usually referred only to the male gender. This incorrect style of communication contributed to the notion that the academic environment is male-modelled; female presence is not at all evident in the academic community; important academic roles are available only to men. The need to change, also thanks to an increased sensitivity to the issue of equal opportunities, was reflected in the "Guideline for the use of a gender-sensitive language". While other Italian universities have produced documents on gender-sensitive language, to our knowledge, the adoption of the document as a University rule is not common at all. Therefore, we may consider the formal approval and adoption by the Academic Senate of such a document an important step in building a gender-sensitive environment and facilitating the removal of biases and prejudices faster as the female presence becomes more visible – without this necessarily being linked to the number of women. Currently, after some initial difficulties, the new style of communication has been adopted by all the offices for their communications and this has been greatly appreciated by the women among the academic community.

Factors: A greater awareness of equal opportunities has stimulated the Mediterranea University of Reggio Calabria to devise such an instrument for itself.

Contact: Ottavio Amaro (Administrative Manager of the Mediterranea University of Reggio Calabria): ottavio.amaro@unirc.it

UNIRC: Editing and periodical publication of sex-disaggregated data of the university

Thematic area: data collection and publication

Description: This activity aims to analyze and evaluate the status of the University and its departments from a gender perspective. Sex-disaggregated data concerning the academic, administrative and student community of the University Mediterranea of Reggio Calabria are periodically published on the dedicated website of the project (http://www.geecco.unirc.it/index.php/documenti/bilanci-di-genere) in order to identify progress and compositions of the groups constituting the academic community. A trend is also available (years 2015-2018), which allows identification of variations and monitoring of the results of GEP actions in connection with other gender initiatives. Currently, data are available for the past six years, which is too limited a period to draw definitive conclusions. However, some observations on the trends may be useful in supporting the planning of future university policies and strategies.

Goals and impact: The availability of sex-disaggregated data and their online publication is an impartial picture of the real situation at the University. Particularly, while discussions on women's career advancement may produce contradictory outcomes, trends and data depict the effective academic reality, particularly the difference between almost balanced male-female starting levels (such as PhD and researcher positions) and the imbalance that occurs next when moving towards higher-level positions. The publication of sex-disaggregated data and the related report are expected to be useful tools to support initiatives addressing imbalances, as it is based on real data. In fact, some other actions based on such figures have been launched with the support of decision-making bodies mainly at department level. Particularly, the adoption of some documents – such as the guidelines for evaluation boards – has been facilitated by these figures showing the current

imbalanced situation at the University. In addition, trends are important to monitor results, thus encouraging the continuation of actions and initiatives that produce better results.

Factors: Exact knowledge of the composition of the groups constituting the academic community is essential to identify possible gender imbalances and to allow the formulation of appropriate gender rebalancing policies. Impartiality of data is an efficient supporting tool to facilitate the adoption of such policies.

Contact: Unique Committee of Warranty (CUG) of the Mediterranea University, Concettina Marino: concettina.marino@unirc.it

UNIRC: Training/mentoring on projects for young women STEM researchers

Thematic area: support activity, young female researchers

Description: UNIRC organizes supporting actions for young female researchers to promote their participation in funded projects with gender-balanced participation and/or coordinated by a woman. This activity will follow the training seminars that will start in July 2020 (http://www.agraria.unirc.it/articoli/22921/scuola-di-dottorato-webinar-dal-titolo-horizon-europe-come-scrivere-una-proposta-di-ricerca-competitiva) (online due to the COVID emergency) and will end in October 2020. These seminars are intended to stimulate female researchers' interest in applications for competitive research projects given that participation in/coordination of projects is one of the criteria that facilitates career advancements.

Goals and impact: Few of the projects submitted feature balanced participation between men and women, even less are coordinated by women and scarcely any involve young female researchers. Support and encouragement, particularly for young female researchers and doctoral candidates, can benefit their careers. Since achievement of the National Scientific Qualification (ASN) is compulsory for access to academic career progression, the measure's chief benefit lies in the fact that the ASN evaluates funded projects positively. The second benefit is that of autonomously funding one's own research and collaborators, thus making female researchers more independent from other – mainly male – colleagues regarding funds, and more confident in their scientific competence A process that is expected to produce leverage benefit.

Factors: Evidence of the low number of female led STEM projects calls for specific actions targeting the promotion of female researchers' applications for funded research projects.

Contact: www.geecco.unirc.it

PK: Women in Engineering network "WIEmy"

Thematic area: mentoring, networking, workshops, debates, research advancement

Description: The GEECCO Core Team at PK (Lidia Zakowska, Sabina Pulawska and Zofia Bryniarska) initiated this action with the help of advanced women researchers. The mentoring Group of Women for Women has been active at PK since September 2019. WIEmy (in Polish "we know", but also associated with the WIE acronym for Women in Engineering) creates an expert network of women researchers at our technical university. Its members – both young role models as well as experienced

senior researchers or women professors from all engineering faculties – aim to support and cooperate with women in engineering, to integrate the community and to build the foundations for interdisciplinary research. WIEmy members provide mentoring support and help with the development of young researchers' engineering career; they exchange knowledge extensively and cooperate in research project activities. Being an open network, the group of WIEmy founders (together with the GEECCO Core Team at PK) invites the participation of all ambitious women engineers from all engineering sectors and from any country. A logo and a website were designed, as well as a poster which is now used for dissemination of the WIEmy network inside and outside PK.

Goals and impact: The idea behind creating the network of women researchers at Politechnika Krakowska was twofold: firstly, to gather women interested in mentoring young women researchers in their careers, and secondly, to help the academic community in achieving equality goals in their everyday work as engineers at PK.

Factors: Due to the pandemic situation beginning in early spring of 2020, the WIEmy network was not able to be as active as planned – given that open-air meetings were not possible at PK, several meetings took place online and the network also communicated and still communicates in a group via a messaging app. The WIEmy network aims to become fully visible and active as soon as the pandemic situation is over, and these activities will be long-lasting and sustainable at PK.

Contact: Lidia Zakowska: lzakowsk@pk.edu.pl, Zofia Bryniarska: z_bryn@pk.edu.pl

PK: Interviews with PK Women in the University Journal Nasza Politechnika

Thematic area: publications, interviews, role models, raising awareness

Description: In order to increase the visibility of women researchers at PK, the publication of 10 interviews with women researchers from all PK faculties was designed and implemented as a GEECCO visibility measure. Prepared by Lidia Zakowska, each woman was asked the same questions. Prior to meeting face-to-face, interviewed researchers were sent the questions via e-mail. In the next step, date and location of the meeting were agreed upon. Locations included the researcher's institute and the GEECCO offices at PK. Due to COVID-19, meetings have also been held online via Teams or Skype since March 2020. Subsequently, the script was transcribed from the recorded material, corrected and sent to the speaker for editorial approval or corrections. After this, the final version of the interview was sent to the editor of the university journal Nasza Politechnika (NP), together with an introduction written by Lidia Zakowska. Final editorial work was done by the editorial office of NP, in cooperation of Lesław Peters with the author and the GEECCO Team, while PK photographer Jan Zych took pictures. Starting in 2018, the action was carried out over 36 months of GEECCO. We plan to finish by March 2021.

The questions were as follows:

- How did you become an engineer? What caused you to choose this discipline and field of scientific research? Were there any inspiring people, role models, for example: parents, teachers, literature...?
- What do you do in your research work? How important are these issues for the development of science and society?
- What do you consider to be the greatest achievement in your professional work as a researcher and academic teacher, what are you most proud of?

- What research and management positions have you held in your academic career?
- Have you encountered obstacles (personal/social/structural) during your engineering and scientific career? Did you ask for and receive support from mentors?
- What is the situation regarding gender equality and equal treatment between women and men in your field? In Poland, but also in other countries where you worked, were/are there provisions regarding equality and anti-discrimination and have you had the opportunity to experience their effects?
- Did you encounter difficulties in combining work-home responsibilities because of the traditional responsibilities of a woman in the family? How did you manage this in your work? Which period do you think is the most difficult for a woman during her academic career?
- Do you think women's equality issues should be of interest to the university's ethics committee or the special committee on gender equality? Is discrimination, violence, harassment, including sexual harassment, a problem at the university?
- In your opinion, how can you influence a change in stereotypical attitudes of men with regard to women in the workplace – in cases where men do not notice and recognize equal treatment of men and women as an important issue?
- Have you had the opportunity to participate in networks of female researchers? Please comment yes/no and why? How do such networks work? Is it worth creating them?
- Do you often encounter situations where women in high positions do not help other women in their careers? If so, why?
- Do you have a message for young women starting their careers in engineering and science?

Goals and impact: The main goal was to present to the whole academic community, the outstanding careers of female engineers from all faculties currently at PK. Politechnika Krakowska publishes its Journal "Nasza Politechnika" on a monthly basis. It is the main source of information accessed by all our community: students, researchers, teachers, decision-makers, administration and technical staff. It is published both in hard copy and as an online journal, therefore, visibility of the women researcher role models featured is high. Each issue containing one of these interviews is broadly commented on and discussed.

All Journals are available at the Website of Nasza Politechnika: https://issuu.com/naszapolitechnika.

The interviews presenting female researchers as role-models, designed by the PK GEECCO core team and published in the Nasza Politechnika Journals, can also be found via the following direct links:

a) http://nasza.pk.edu.pl/images/stories/NP/np-2019-04.pdf
b) http://nasza.pk.edu.pl/images/stories/NP/np-2019-10.pdf
c) http://nasza.pk.edu.pl/images/stories/NP/np-2019-12.pdf
d) http://nasza.pk.edu.pl/images/stories/NP/np-2020-01.pdf
e) http://nasza.pk.edu.pl/images/stories/NP/np-2020-03.pdf
f) http://nasza.pk.edu.pl/images/stories/NP/np-2020-04.pdf
g) http://nasza.pk.edu.pl/images/stories/NP/np-2020-09.pdf
h) http://nasza.pk.edu.pl/images/stories/NP/np-2020-06.pdf
i) http://nasza.pk.edu.pl/images/stories/NP/np-2020-10.pdf
j) http://nasza.pk.edu.pl/images/stories/NP/np-2020-11.pdf

Factors: The publication of 10 interviews was possible thanks to the kind cooperation of the journal Nasza Politechnika's editor, Lesław Peters, at the Wydawnictwo Office of NP PK with the GEECCO Core Team.

Contact: Lidia Zakowska: lzakowsk@pk.edu.pl

ROZMOWA

Kobiety przejmują typowo męskie uczelnie

Rozmowa z prof. dr hab. inż. Beatą Niezgodą-Żelasko

Kontynuując serię wywiadów z wybitnymi kobietami z Politechniki Krakowskiej, kobietami, które odniosły sukces w stereotypowo męskim środowisku inżynierskim i stanowią „role models" dla kolejnych pokoleń, zapraszam szanownych Czytelników do lektury rozmowy z kobietą sukcesu z Wydziału Mechanicznego, z prof. dr hab. inż. Beatą Niezgodą-Żelasko. Cykl ukazuje się w ramach prowadzonego na naszej uczelni projektu Programu „Horyzont 2020" — GEECCO.

Lidia Żakowska

Lidia Żakowska: Jak to się stało, że została Pani inżynierem? Co spowodowało, że wybrała Pani właśnie taką dyscyplinę i pole badań naukowych? Czy były jakieś inspirujące osoby, wzorce, np. rodzice, nauczyciel, literatura...?

Beata Niezgoda-Żelasko: Myślę, że nie miałam wyjścia. Ze względu na moje preferencje w szkole średniej wiedziałam, że zostanę inżynierem. Matematyka, fizyka to były „moje" przedmioty. Mój wybór był naturalny. Natomiast to, że rozpoczęłam studia na Wydziale Mechanicznym było dziełem przypadku. Zbieg okoliczności sprawił, że będąc w klasie maturalnej miałam okazję szerzej porozmawiać o mojej przyszłej edukacji z docentem Januszem Gołogórskim, który poświęcił mi czas oraz bardzo zachęcał, żebym zajęła się techniką chłodniczą. Cechuje mnie konsekwencja, cecha charakteru, która może być czasami irytująca. Konsekwentnie ten plan realizowałam. Wybrałam Wydział Mechaniczny oraz dynamicznie rozwijającą się specjalność: urządzenia chłodnicze i klimatyzacyjne. Studencka grupa, która ostatecznie kończyła tę specjalność, była niewielka, liczyła cztery osoby. Było bardzo fajnie. Tak to się wszystko zaczęło.

Czym się Pani zajmuje w pracy naukowo-badawczej? Jak ważne są to zagadnienia dla rozwoju nauki i społeczeństwa?

Nie wiem, jak bardzo są ważne. Na pewno są użyteczne. Jak wspomniałam, zajmuję się techniką chłodniczą i klimatyzacyjną. Moją specjalizacją jest wymiana ciepła w zastosowaniach techniki chłodniczej. Od 2001 r. zajmuję się badaniami nad tzw. zawiesinami lodowymi i ich zastosowaniami. Zawiesina lodowa to specyficzny nośnik chłodu, będący mieszaniną kryształków lodu w czystej wodzie lub wodzie z dodatkiem środka obniżającego temperaturę krzepnięcia. Kryształki lodu pływające w wodzie powodują, że stosując w procesie chłodzenia zawiesinę lodową, wykorzystujemy tzw. ciepło utajone. W określonych warunkach ten sam strumień masy czynnika pozwala odbierać co najmniej dwukrotnie większe strumienie ciepła w porównaniu np. z chłodzeniem wodą lub innym jednofazowym nośnikiem chłodu.

Zawiesinę produkuje się w specjalny sposób. Niestety, generatory zawiesiny lodowej są drogie. Natomiast jej stosowanie generuje oszczędności po stronie kosztów eksploatacyjnych, minimalizuje napełnienie instalacji czynnikiem chłodniczym, pozwala obniżyć wymaganą moc chillerów w układach z akumulacją chłodu. Tego typu uwarunkowania stwarzają duże pole do działań, jeżeli chodzi o analizowanie i projektowanie średnich i dużych systemów chłodzenia, wykorzystujących zawiesinę lodową. Ta technologia chłodzenia jest przede wszystkim bezpieczna dla człowieka. Mogę nieskromnie powiedzieć, że w grupie osób, które zajmują się tą problematyką na świecie, jestem dobrze rozpoznawana. Jestem ekspertem w tej dziedzinie.

Obecnie ze względu na ochronę środowiska, ograniczenie efektu cieplarnianego, redukcję dziury ozonowej, bardzo dużo się dzieje w technice chłodniczej i klimatyzacyjnej. To wszystko powoduje, że czynniki chłodnicze, które były stosowane do tej pory, są eliminowane z rynku i powraca się do tzw. czynników naturalnych: amoniaku, węglowodorów, CO_2, wykorzystywanych w pierwszych urządzeniach chłodniczych. Jednak czynniki te są albo niebezpieczne dla człowieka lub stwarzają istotne problemy konstrukcyjne. Rozwój chemii w XX wieku sprawił, że powstawały nowe syntetyczne, bezpieczne dla człowieka, ale jak się wkrótce okazało niebezpieczne dla środowiska czynniki, które obecnie staramy się eliminować. Jednym z kierunków rozwoju chłodnictwa jest poszerzenie stosowania pośrednich układów chłodzenia. W ten kierunek rozwoju świetnie wpisuje się zawiesina lodowa.

Druga część mojej działalności jest bardziej hobbystyczna, ale też istotnie związana z zawodem. Obejmuje projektowanie różnego rodzaju nietypowych urządzeń, wymienników ciepła, projektowanie pomp ciepła, projektowanie ujęć dolnych źródeł ciepła, w tym gruntowych wymienników ciepła.

Co uważa Pani za największy sukces w swej pracy zawodowej jako naukowiec i nauczyciel akademicki, z czego jest Pani najbardziej dumna?

Nie ma takiej rzeczy, którą mogłabym wskazać, jako jedyną, najważniejszą. Dla mnie istotne jest to, że w swoim środowisku nie jestem osobą anonimową. Ludzie szanują moje kompetencje, zwracają się do mnie z prośbami o rozwiązania w tym zakresie. To był zawsze mój cel. Pracuję na uczelni, ale zawsze chciałam być inżynierem i chciałam być postrzegana jako inżynier. Dążyłam do tego, aby wykazać, że potrafię coś zrobić oraz że pewne urządzenia da się zrobić, że urządzenia te będą fizycznie istnieć i że będą unikjonować. To jest niezmiernie ważne, żeby przełożyć swoją wiedzę na konkretne praktyczne umiejętności. Staram się zachęcać studentów, aby zdobywali konkretne umiejętności. W zależności od tego, jakie są nasze umiejętności, co potrafimy konkretnie zrobić, tak wygląda nasze życie.

W dzisiejszym świecie nikt nie działa indywidualnie, do tego służą zespoły badawcze. Na pewno jestem dumna z prac, które wykonywałam dla polskich kopalń PGE/PAK Bogdanka. Aktualnie współpracuję w ramach konsorcjum z trzema jednostkami, a mianowicie: Politechniką Krakowską, Cabea — Bochnia i Ponarem Wadowice w Łaziskach Górnych. Współpraca odbywa się także z zakładem CERN i dotyczy produkcji urządzeń „Marta", służących do ciągłego wykraplania dwutlenku węgla. Urządzenia te wykorzystywane są przez jednostki badawcze na całym świecie. Poza tym wykonywałam obliczenia projektowe wymienników ciepła na potrzeby górnictwa i wiem, że te urządzenia są produkowane przez firmę Wichary. Producent był niezmiernie zadowolony, że mu pomogłam w obliczeniach. To są może drobne rzeczy, ale przekuwające wiedzę na konkretny produkt.

Za istotną uważam moją pracę dydaktyczną. Bardzo lubię rozmawiać ze studentami na seminariach i zajęciach projektowych. Jestem dumna z tego, jeśli po zajęciach zostają, aby coś przedyskutować.

Jakie stanowiska i pozycje w zarządzaniu zajmowała Pani w trakcie akademickiej kariery?

Wcześniej, żadnych. Obecnie jestem kierownikiem zakładu. Pro esor Wojciech Zalewski, który był moim sze em, od roku jest już na emeryturze i przejęłam po nim Zakład Chłodnictwa i Klimatyzacji PK.

Czy spotkała się Pani z przeszkodami (personalnymi, socjalnymi bądź strukturalnymi) podczas swej kariery inżynierskiej i naukowej? Czy zwracała się Pani do mentorów o wsparcie i uzyskiwała je?

Z bezpośrednią dyskryminacją się nie spotkałam, jakkolwiek uważam, że każdego człowieka można dyskryminować. Natomiast uważam, że ludzie nie dzielą się tylko ze względu na płeć, ale dzielą się na ludzi mądrych i głupich, kompetentnych i niekompetentnych, uczciwych i nieuczciwych, lojalnych i nielojalnych itd. Myślę, że może miałam szczęście. Byłam też konsekwentna, starałam się, miałam swój cel i go realizowałam. Nikt mi szczególnie nie przeszkadzał. To nie oznacza, że nie było problemów. Były, ale sama lub w zespole te problemy rozwiązywałam.

W życiu zawodowym pomógł mi pro . Zalewski. Był sze em na tyle tolerancyjnym, że pozwalał na swobodne działanie bez szczególnych ograniczeń. Dużo mi pomógł, gdy urodził się mój syn. Miałam możliwość bardzo elastycznego ustawienia godzin pracy. Obracałam się w środowisku męskim, ale ci mężczyźni, nie powiedziałbym, żeby mnie źle traktowali. Pomagali mi.

Jak przedstawia się sytuacja w kwestii równości płci i równego traktowania kobiet i mężczyzn w Pani dziedzinie — w Polsce, ale też w innych krajach, w których Pani pracowała? Czy istnieją przepisy dotyczące równości i przeciwdziałania dyskryminacji? Czy miała Pani możliwość doświadczyć ich efektów?

Nie znam żadnych przepisów, które by skutecznie przeciwdziałały dyskryminacji. Sama nie doświadczyłam dyskryminacji. Może nie potrafiłam jej dostrzec? Byłam na stypendium w Niemczech, na Uniwersytecie Technicznym w Monachium. Tam spędziłam ponad półtora roku i nie widziałam jakichkolwiek orm dyskryminacji. Wszystko było normalne, naturalne. Uważam, że jeżeli człowiek ma charakter i coś wie, to jest to doceniane.

Innym zagadnieniem jest, jak respektowane są przepisy dotyczące równości wynagrodzeń. Utajnianie danych dotyczących wynagrodzeń może sprzyjać niesprawiedliwościom w tym względzie.

Czy miała Pani trudności w łączeniu obowiązków w pracy i w domu ze względu na tradycyjne obowiązki kobiety w rodzinie? Jak sobie Pani radziła w pracy? Który okres jest Pani zdaniem najtrudniejszy dla kobiety podczas jej kariery akademickiej?

Dla kobiety, ale i dla mężczyzny, trudnym czasem jest okres, kiedy pojawia się dziecko lub konieczność opieki nad rodzicami. Na to też człowiek musi mieć czas. Ja miałam specyficzną sytuację — wyrozumiałego przełożonego i elastyczne godziny pracy. Poza tym pracujemy z mężem w jednym instytucie, to jest niezmiernie istotne, bo możemy się wzajemnie wspierać.

Mam męża, który na każdym etapie naszego życia stanowił dla mnie ogromne wsparcie. Nasze tytuły naukowe są odmienne, spoglądając na to z zewnątrz: mam sukcesy większe niż on. Ale czy tytuł naukowy jest miarodajnym wskaźnikiem wartości człowieka? O moim mężu można powiedzieć, że jest „ostatnim człowiekiem, który wie wszystko". Mam po prostu szczęście.

Czy uważa Pani, że sprawy równości kobiet powinny być przedmiotem zainteresowania uczelnianej komisji etyki lub specjalnej komisji ds. równości? Czy dyskryminacja, przemoc, molestowanie, również molestowanie seksualne są problemami na uczelni?

ROZMOWA

Temat równości jest w ostatnim okresie dość „modny" i często poruszany w mediach. Odnoszenie się do niego przez osoby o różnym doświadczeniu życiowym, różnych uwarunkowaniach funkcjonowania, bywa niekiedy prowokujące czy nawet żenujące. Wyraźnie chcę podkreślić, że nie twierdzę, iż zjawiska, o które Pani pyta, nie występują!

Obracając się w środowisku, jak do tej pory zdominowanym przez mężczyzn, w żaden sposób nie zauważyłam, nie doświadczyłam problemów związanych z różnymi formami przemocy czy molestowania. Mam nadzieję, że te problemy nie występują na naszej uczelni i nie muszą być przedmiotem analizy komisji ds. etyki.

Nie możemy zrównać płci męskiej z kobiety, gdyż jesteśmy różni i każdy z nas ma swój cel do zrealizowania w życiu. Również według mnie polega na szansie i prawie do realizacji swoich celów. Ale te cele nie są identyczne! Ludzie powinni to rozumieć. Mężczyzna zawsze będzie silniejszy życiowo niż kobieta. W związku z tym będzie podejmował innego rodzaju działania, a kobieta będzie podejmowała, w naturalny sposób, inne.

Trudno powiedzieć, czy mężczyźni wykładowcy traktują studentki i studentów jednakowo. W moim bezpośrednim otoczeniu nie znam nikogo, kto pozwalałby sobie na niestosowne uwagi w stosunku do dziewcząt i jeby je dyskryminował. Bardzo często dziewczęta, które są na Wydziale Mechanicznym, przewodzą grupie. One są starostami grup, przewodniczącymi Samorządu Studenckiego, są lepiej zorganizowane. Włobiecie ważna jest siła. Jeżeli kobieta jest silna i ma poczucie własnej wartości, to nikt jej nie problkrzywdzi; bo ona sobie na to nie pozwoli. Oczywiście, jeżeli ktoś komuś wyrządza krzywdę, to powinien być bezwzględnie ukarany i takie przypadki należy zgłaszać. Niniejszym zwracam szczególną uwagę na inny przejaw męskiego szowinizmu, którego doświadczam codziennie, będąc „panią Daisy" w limuzynie mojego męża. Czego muszę się nasłuchać na temat innych kobiet za kierownicą!

Często bywa tak, iż kobieta ze względu na swoją pracowitość, lepszy stopień zorganizowania będzie osiągała istotne sukcesy w nauce. Natomiast cokolwiek byśmy nie powiedzieli, to i tak, statystycznie rzecz biorąc, predyspozycje mężczyzn do wykonywania zawodów inżynierskich są lepsze. Aby być inżynierem należy eksperymentować, a ryzyko jest domeną mężczyzn. Ja bardzo dużo mogłam się nauczyć od mojego męża. Pewne rzeczy on robi lepiej, a pewne ja. Na tym polega równość. My nie jesteśmy identyczni, my jesteśmy różni. W celu wyrównania szans kobiet w naukach technicznych należy zwrócić uwagę na wychowanie dzieci. Nie tylko szkolnictwo, ale stereotyp wychowania wpływają na ich dalsze losy i postawy społeczne.

Jak Pani zdaniem można wpłynąć na zmianę stereotypowych postaw mężczyzn w odniesieniu do kobiet w miejscu pracy — w przypadku gdy mężczyźni nie zauważają i nie rozpoznają jako istotnego problemu równego traktowania kobiet i mężczyzn?

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W różnych projektach współpracowałam z mężczyznami. Mężczyźni zwracali się i zwracają się do mnie zróżnymi pytaniami, szanując moją wiedzę, umiejąc za partnera w zespole. Nigdy nie słyszałam: „ty się nie nadajesz", „co z ciebie za inżynier". Mam świadomość własnych ograniczeń i po prostu wiem, czy coś potra ę, czy czegoś nie potra ę zrobić. Nie podejmuję działań, których nie potra ę wykonać.

Nawet ze względów kulturowych mężczyźni są generalnie mniej obciążeni sprawami rodzinnymi, z tego powodu mają więcej czasu dla siebie. Mężczyźni mogą więcej czasu poświęcić na myślenie, są wizjonerami. Kobieta ma tego czasu mniej, zawsze ma coś do zrobienia. Mój kolega z wydziału zabawnie porównał kobietę do komputera pięcerdzeniowego, a mężczyznę do jednordzeniowego. Z drugiej zaś strony Sienkiewicz ironizował słowami Petroniusza: „Co do kobiet, zgadzam się, że każda posiada trzy lub cztery dusze, ale żadna nie ma duszy rozumnej" (mam nadzieję, że nie jest to prawda).

Zauważyłam ostatnio tendencję eliminowania ze względów ekonomicznych mężczyzn z uczelni technicznych i przejmowania tych typowo męskich uczelni przez kobiety. Uważam, że nie zawsze jest to z korzyścią dla edukacji. Obserwuję to, co się dzieje u nas na uczelni. Proszę zwrócić uwagę, że niskie pensje sprawiają, iż podejmowanie przez mężczyzn po studiach pracy naukowej nie jest atrakcyjne. Mężczyzna pójdzie do przemysłu, bo wie, że tam zarobi więcej. Niżej płatną pracę na uczelni podejmuje kobieta, gdyż to miejsce pracy potencjalnie daje możliwość elastycznego dysponowania czasem.

Również na Wydziale Mechanicznym pracuje coraz więcej kobiet. Ostatnio gdy staraliśmy się przyjąć do zakładu nowe osoby, to zgłaszały się wyłącznie dziewczyny. Problem w tym, że ze względu na predyspozycje do pewnych prac potrzebny jest mężczyzna. Ta tendencja związana z zatrudnieniem jest wynikiem niskich nakładów - nasnowych na naukę oraz jest przejawem dyskryminacji pracowej kobiet w Polsce.

Udział kobiet w zarządzaniu? Może dla kobiet z punktu widzenia życia lepsze jest zapewnienie możliwości pracy zawodowej np. w charakterze inżyniera, ale z drugiej strony — zapewnienie poczucia bezpieczeństwa i spokoju w momencie, gdy one tego potrzebują, czyli gdy pojawia się w rodzinie dziecko. Kobieta musi mieć pewność, że z tego powodu nie będzie dyskryminowana. Władza odbiera człowiekowi spokój. Możliwe, że w życiu spełnienie i spokój są najcenniejsze.

Dzisiejszy świat rozwija się trochę w dziwnym kierunku. Obserwuję, że wszystko, o czym się mówi — równość

płci, „me too" — ma nieprawdopodobny wpływ na wrażliwe relacje młodych ludzi. Młodzi nie funkcjonują w relacjach bezpośrednich, tylko w relacjach poprzez serwisy społecznościowe, jak: Facebook, Tweeter, Instagram itp. Media społecznościowe są jak wspólny układ nerwowy. Natomiast w kontaktach bezpośrednich stawiamy pomiędzy sobą „szklane przeszkody". Zatem nie tylko kobiety mogą mieć problemy w świecie mężczyzn, ale jak odnajdą się mężczyźni w świecie kobiet?

Czy miała Pani sposobność uczestniczyć w sieciach kobiet naukowców?

Czy miała Pani sposobność uczestniczyć w sieciach kobiet naukowców? Dlaczego? Nie znam takich sieci. Nie tworzyłabym kobiecych sieci naukowców, gdyż takie podejście sankcjonuje dyskryminację kobiet albo mężczyzn. Należy tworzyć sieci ludzi kompetentnych. Zwracajmy wszyscy uwagę na to, aby państwowe środki finansowe rozdysponowywane były na przedsięwzięcia zaspokajające nasze potrzeby zdrowotne, edukacyjne i pozwalające na ciągły rozwój naszego kraju. Podkreślajmy, aby nakłady na naukę, edukację były większe, a nie na poziomie 0,44 proc. PKB. Dla przykładu w Turcji te nakłady są na poziomie 1 proc. PKB, w Europie — ponad 2 proc. PKB, a w Korei Południowej — ponad 4 proc. PKB.

Minister Gowin sugeruje wzrost nakładów na naukę do poziomu 1 proc. Czy uświadamiamy sobie, że jesteśmy na niższym poziomie technicznym niż Turcja?

Nakłady na naukę w Korei po wojnie koreańskiej wynosiły ponad 2 proc. PKB. Na jakim poziomie technicznym jest dzisiaj Korea Południowa? Podstawą rozwoju naukowego, szczególnie w naukach technicznych, jest dostęp do środków nanosnowych!

Konformizm środowiska naukowego w aspekcie bezwarunkowego podnoszenia nakładów na naukę jest przerażający. Zarnuca się pracownikom biemość i bylejakość, wprowadza się coraz większe wymagania i ograniczenia, uzasadniające tak naprawdę brak realnego dostępu do środków nanosnowych. Dlatego uważam, że — w przypadku większych nakładów na naukę — w wyścigu o różnego rodzaju granty i projekty również kobiety mogłyby mieć większe szanse. Obecnie szansę ma coraz większa grupa osób. To jest zła prognoza na przyszłość dla nas wszystkich, nie tylko dla kobiet.

Ile kobiet profesorów jest na wydziale? Wydaje mi się, że z tytułem profesorskim jestem jedna. Jest kilka pań będących samodzielnymi pracownikami naukowymi ze stopniem doktora habilitowanego lub profesora PK. Oczywiście dominują mężczyźni, ale kobiet nie jest tak mało. Jeśli popatrzymy na młode kadry, np. u nas w Instytucie Inżynierii Cieplnej i Procesowej, liczba kobiet pracowników dydaktycznych jest zbliżona do liczby mężczyzn. Kiedy zaczynałam pracę, w znacznie liczniejszym instytucie były może trzy panie, które zajmowały się dydaktyką.

Czy często zauważa Pani sytuacje, gdy kobiety na wysokich stanowiskach nie pomagają innym kobietom w karierze? Jeżeli tak, to dlaczego?

Nie mogę nic takiego powiedzieć, gdyż nie doświadczyłam tego. No, może oglądałam w filmach. Mam inne doświadczenie. Ponieważ zostałam przewodniczącą wydziałowej komisji wyborczej, musiałam współpracować z panami z administracji, z dziekanatu, z wydziałowej komisji wyborczej. Byłam zaskoczona, jak panie potra ły pomagać na każdym etapie, żeby wszystko odbyło się bez problemów. Nie oczekiwałam tego. Panie były kapitalne w tym, co robiły. Wszystko, o co prosiłam, miałam sprawdzone i przygotowane. Bardzo mi pomogły.

Może Pani przekazać przesłanie młodym kobietom rozpoczynającym karierę w inżynierii i w nauce?

Uważam, że każda praca, która się wykona, wraca do człowieka. Należy być pracowitym, „robić swoje" i zawsze być sobą. Trzeba być bardzo konsekwentnym, poukładanym. Każda praca, którą wykonałam, która jest związana z nauką, kiedyś procentuje. Wszystkie zdobyte doświadczenia wracają do mnie i kiedyś się przydają. Na pewno warto jest się uczyć. Należy być odważnym i nie bać się podejmować różnych wyzwań, ale też trzeba dużo pracować.

Rozmawiała: Lidia Żakowska
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Dr hab. inż. Lidia Żakowska, prof. PK pracuje w Katedrze Systemów Transportowych na Wydziale Inżynierii Lądowej, kieruje projektem GEECCO na PK, realizowanym w ramach Programu „Horyzont 2020".

Example of an interview with a female professor in the journal Nasza Politechnika

PK: Increasing sustainable visibility through publications of sex-disaggregated data

Thematic area: publications, sex-disaggregated data, raising awareness, reporting

Description: Until the launch of GEECCO in 2017, PK had neither publicized data on the proportion of women among students nor among researchers. Detailed accounts and documentations including sex-disaggregated data in seven "Faculty GEP Facts Reports" and "PK GEP Facts Report" was first

prepared by the GEECCO Core team in 2018. In order to render visible, the proportion of women at PK and at each faculty, these documents were presented to the PK rector and distributed to the faculties' deans (December 2018). Lidia Zakowska delivered the reports in special meetings with the PK Rector, Vice-rectors and seven Deans. In addition, reports with PK facts including sex-disaggregated data were distributed to general academic members online as well as in a printed version prepared by Zofia Bryniarska. Aiming at highlighting the problem of inequality in the representation of women in higher levels of research positions at PK, they were also presented at conferences and at special events. Every year since, the discussion on equity demands in academia has been continued, and in 2019 the share of female students was finally published on the main PK page. Since 2020, the rector's office and the university's Development Strategy Office have been compiling the "Rector's Report for 2019" following multiple requests and three years of communication with decision-makers. In it, statistical data on gender participation of employees (researchers and academic teachers as well as administration staff) and students are presented (all sex-disaggregated data). This is now to become routine annual practice at PK. It will, in the coming years, enable us to identify the change in the gender gap and analyse women's participation in research, innovation and inventions, as well as in teaching students.

A special website was created in 2018 by the GEECCO Core Team members to make the PK community aware of the progress on gender equity, and especially to make available and visible all documents and material dealing with data on women researchers and women as role models in engineering (including information on the WIEmy network and other empowerment actions): http://kst.pk.edu.pl/index.php/dzialalnosc-br/geecco

Two special articles were published in Nasza Politechnika the official journal of PK, to increase the visibility of women and gender equality issues at PK, especially illustrating career development in numbers by highlighting the roles of women in research and sex-disaggregated data. The articles were prepared by the GEECCO team (Lidia Zakowska and Zofia Bryniarska) and were published in the PK journal's April 2018, p. 22-25 (https://issuu.com/naszapolitechnika/docs/np-2018-4) and January 2019, p. 16 (https://issuu.com/naszapolitechnika/docs/np-2019-01) issues. A third issue is scheduled to be published in 2021, aiming to show the differences in the proportion of women on each career stage.

Goals and impact: It is necessary to know the sex-disaggregated data and composition of the university's staff and student community on the one hand in order to strengthen awareness and importance of individual groups by determining each group's participation, and, on the other hand, to identify possible gender inequalities and facilitate the formulation of appropriate policies to achieve gender balance. Data impartiality is an effective supporting tool to promote the adoption of such policies.

Factors: Published material creates sustainable visibility, both in paper or online versions. To render this sustainable beyond the completion of the GEECCO project, it is crucial that the Rector's Office of PK and the university's Development Strategy Office cooperate and produce such sex-disaggregated data in a sustainable way and that they adopt the publication of such data in the long term.

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