



# Region 8 Women in Engineering

**WIE Pledge – R8 Meeting - November 6<sup>th</sup> 2021**

**Maria-Alexandra Paun, PhD**

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# Contact details

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# WIE Pledge

*"IEEE Region 8 is committed to diversity, equity, and inclusion in all its activities. This includes boards, committees, governance, conferences, meetings, publications, and officers. We aim to provide equal opportunity to our members and volunteers, regardless of ethnicity, race, nationality, disability, employment sector, socioeconomic status, sexual orientation, religion, gender, age, and/or personal identity. Our policy is to continually improve our practices to build and maintain an environment that reflects the rich diversity of Region 8."*

# UNESCO Report

## *Reference:*

2nd UNESCO Engineering Report (2021), **Engineering for Sustainable Development**, Women in Engineering section, "Equal Opportunities for All"

<https://unesdoc.unesco.org/ark:/48223/pf0000375644/PDF/375644eng.pdf.multi>

# Diversity and Inclusion

- Diversity and Inclusion in Engineering
- Engineering for Sustainable Development
- Drivers for change
- Changing culture

# Drivers for change

- Increasing recognition of the current and historic lack of equality in opportunities for all
- A skills shortage driven by an increasingly technical world, coupled with an ageing demographic (RAEng, 2019)
- Acknowledgement of the reality that innovation, profit and high-quality engineering is improved with a more diverse team of engineers (Hunt, Layton and Prince, 2015)
- An increasing focus on the SDGs and what this means within the engineering sector

# Changing culture

- In order to successfully achieve diversity and inclusion, the culture of engineering must ensure that *all* people feel comfortable and included, and that they are able to bring their own identity and their own differences to the sector.
- Care must be taken to change the culture rather than changing people to fit the existing culture. Failure to do this prevents the 'diversity premium' from being achieved, and the rewards of less biased and more socially just engineering solutions will not be maximized (RAEng, 2017) such that the retention of diverse talent will falter.



# Women in Engineering

- Making engineering education, professional development opportunities, pay equity and career-life integration initiatives available to women are key to their engagement, retention, leadership growth and desire to stay in the workforce and make contributions to the profession (Montgomery, 2017; O'Meara and Campbell, 2011; Tull et al., 2017).
- Many existing barriers prevent women and girls accessing STEM subjects. In some countries, restrictions still exist that prevent girls from taking certain subjects at school including science (Agberagba, 2017).

# Women in Engineering

- In order to address these barriers, clear progression pathways from all points in the education and employment system leading to a future career in engineering should be provided (UNESCO, 2017).
- In higher education, female students face barriers in progressing from education to professional employment. Yates and Rincon (2017) suggest that the retention of women in engineering and as entrepreneurs can be improved through work experience prior to graduation, as well as in the development of professional networks and external supports to assist with transition into the engineering workforce.

# Women in Engineering

- Female academics are subject to institutional barriers resulting from major inhibitors, such as reduced success rates and often substantially lower grant funding, as well as barriers to research publication (RSC, 2019).
- These factors limit women's access to promotion and hence to progression to professoriate positions within engineering academia. Addressing and removing these barriers is critical to enabling women to progress equitably and to reach decision-making positions in academia.

# Women in Engineering

- Women leaders with unique experiences and who have become what other women aspire to be, have significant power to influence women and girls of all ages. Women from all backgrounds, including those from marginalized or under-represented groups and regions, need to be trained, hired and empowered to achieve their goals.

# Women in Engineering

- Attracting and retaining a more diverse engineering workforce is key to ensuring that the global challenges represented by the SDGs are addressed, and that engineering and technology fulfils their roles in combating climate change and global inequality. The multiple systemic and structural barriers that have historically prevented under-represented groups, notably women, from accessing the engineering sector must be removed as a matter of urgency.

# Women in Engineering

Drivers to achieving this include:

- coordinated methods of data collection
- evidence and sharing of impact and effectiveness of interventions
- legislative and cultural changes, all of which are necessary.

To enable women to participate and facilitate this change they must be empowered and supported to access leadership positions.

# Thank you!

# Questions?