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WHAT WILL IT TAKE: EQUALITY IN LEADERSHIP BY 2030

Engineering Action Plan

UNSW SYDNEY

King's College London

ASU Arizona State University

The Transforming Women's Leadership Pathways event and the development of Plans took place online, and on Gadigal and Bidjigal land. We recognise the peoples of the Eora nation as the traditional custodians of the land. We pay our respects to Elders past, present, and emerging, and extend this respect to all Aboriginal and Torres Strait Islander people. We acknowledge that this land has long been a place of teaching, learning, and creating. Sovereignty has never been ceded.

Arizona State University's four campuses are located in the Salt River Valley on ancestral territories of Indigenous peoples, including the Akimel O'odham (Pima) and Pee Posh (Maricopa) Indian Communities, whose care and keeping of these lands allows us to be here today. We pay our respects to their Elders past and present.

ENGINEERING WORKING GROUP ACTION PLAN

Aspiration 2030

To create a culture of inclusivity that enables women to excel and succeed in engineering. To achieve a culture of inclusivity and actions to drive it to help attract and retain women in engineering careers, allowing them to succeed and excel.

Outcomes from every initiative implemented to be accompanied by an assessment of their success or failure to improve the statistics and culture.

The current state of engineering - key findings and power statistics

The number of female students studying engineering in developed countries remains low, despite significant efforts to attract them for over 30 years. Only around 25% of engineering students in the United States are female, and even fewer in the United Kingdom and Australia. This percentage has not changed significantly since the 1990s, although the number of female engineering students and engineers is far greater in developing countries. Overall, female engineers often do not rise to leadership positions in any country. Efforts to increase the number of female engineers in leadership positions throughout the world have been stymied by a culture of bullying and harassment in some industries, and by blind spots where forward progress is quickly eliminated. The "leaky pipeline" is real, with fewer female students in higher levels of university courses, fewer staying in industrial jobs, and even fewer reaching leadership positions.

> *Efforts to increase the number of female engineers in leadership positions throughout the world have been stymied by a culture of bullying and harassment, in some industries*

Cultural change is urgently required in the engineering profession in order to empower women to remain in the profession and in their pursuit of leadership roles. While there has been an abundance of goodwill and determination, little progress has been achieved in the last 40 years. One way to achieve such change is to address the way engineering is viewed and advertised to young people. Engineering is commonly seen through a narrow, single, lens. There are too few role models, mentors, and sponsors in senior positions within the industry, government, and academia. To improve this situation, leaders will need to be courageous to create step changes that will make a lasting impact.

Barriers and opportunities

BARRIERS

- The distinct male-dominated culture: Women are often assigned to less meaningful tasks than their male counterparts. Unfulfilling work, sexual harassment, and isolation create a culture in which women begin to question whether engineering is worth pursuing
- Confidence: women doubt their abilities more than men. Therefore, they are less likely to apply for roles or positions for which they do not think they are qualified
- Flexibility: work days can include long hours and travel. It can also be very difficult to re-enter the workforce and retain one's former status. Caring responsibilities are not recognised and valued
- Hygiene Factor: Office buildings and onsite work locations often do not have accommodations for women. Even new buildings may lack these essential spaces

OPPORTUNITIES

- Opportunities for learning and growth – there is an opportunity to educate people to blind spots and to encourage them to call out any inappropriate systems or behaviour
- It is important to start the conversation early and to get girls thinking about the engineering field
- There is an opportunity to create lead and lag indicators to help measure success and achievements (lead indicators tell us what we need to do to achieve results; lag indicators measure actual progress and performance)
- Collect thorough data on why women leave the field, or choose to not even enter. This can be done through exit interviews

Recommendations

PUBLIC AND ORGANISATIONAL COMMITMENT TO GENDER EQUITY

Industry

- Create a culture of inclusivity that enables women to excel and succeed in their industry.
- Provide systems that ensure the availability for more role models, mentors, and sponsors predicated around helping women achieve their goals

Government, Industry and Universities

- Enable institutional resilience that allows for failure of courageous activities.
- Support everyone to call out blind spots each time they emerge, by offering clear and explicit tools.

TRACKING AND PUBLISHING DATA/SETTING SPECIFIC GOALS

Universities and Industry

- Create incentives for companies / universities, mandatory reporting, special prizes for women researchers.

Industry

- Take a lesson from industry safety and how culture change has been accomplished – through scrutiny of lead and lag indicators, mandatory reporting etc.

Government, Industry and Universities

- Accomplish change through scrutiny, using such methods as lead and lag indicators and mandatory reporting to put gender equity at the front and centre of all organisations.

TRAINING AND MENTORING

Government

- Ensure that there is a system in place to promote networks for women. Be it through mentors, role models, or sponsors, there need to be support systems in place.

Universities

- Universities can change the narrative by creating initiatives to help girls gain an understanding of the field (e.g. through creative videos). Universities that hold summer camps that get young girls involved in engineering activities should undertake longitudinal studies to assess their success.

RECRUITMENT AND RETENTION

Universities

- Encourage and promote more women to enter, and obtain, an engineering degree, including providing prestigious scholarships.

Industry

- Provide opportunities for accelerated progression, secondments, and vertical job sharing to enable aspiring leaders to visualize their potential new roles and attract them into those roles.

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