Women in Engineering and IT Symposium

Collaborating for Diversity

The Women in Engineering and IT Symposium event was co-hosted by the University of Technology, Sydney (UTS) and University of New South Wales (UNSW) on Thursday 3rd and Friday 4th October, 2019. The theme of the Symposium was Collaborating for Diversity across the university sector, together with industry, schools and government bodies to deepen the collective impact on increasing diversity in STEM degrees and professions.

The University of Queensland (UQ) Women in Engineering representatives Negin Beaton and Kartikee Gupta, alongside industry representation by Mike Griffin of Australian Power Institute and academia representation by Chelsea Dobbins from School of ITEE attended the Symposium.

The 2-day workshop was facilitated by Yemi Penn - Engineer, Entrepreneur and Business Coach who addressed the Symposium with a challenge to all individuals and organisations that we are here to challenge the culture, and shift traditional to transformative mind sets.

UTS Provost and Electrical Engineer Andrew Parfitt announced that we have had 17% nationwide participation of Women in Engineering for 3 decades now, so we need to really ask ourselves – "does it hurt enough?" – in regards to the initiatives we are trying to implement. He advised that we need to make serious changes that is uncomfortable for some, but worth it and these strong initiatives and ideas should be backed by passion, not anger.

Keynote speaker, Shaun Jenkinson, acting CEO for Ansto started by defining and distinguishing the difference between diversity and inclusion, which he mentioned were terms that are used a lot together and perceived interchangeable, but fundamentally are two different things and organisation need to get both right to achieve our ultimate goal. Diversity is getting the right people in the room, and Inclusion is that every individual feels they belong in the room and their uniqueness is valued. Diverse teams perform better on the measures of performance closely related to strategic success. Shaun is a firm believer that diversity and inclusion need to be measured – by way of targets and key performance indicators to make people and organisations more accountable. He ended his speech with sharing words of wisdom by Brene Brown - "Brave leaders are never silent around hard things".

The Lunch and learn session on Day 1 was hosted by Origin Energy, Gold Sponsors of the Symposium. Origin shared their research with Engineers without Borders on "Engineering Redefined" with a focus on Humanitarian Engineering and gender diversity. The research shows that we are seeing more diverse teams in roles and industries with a profound and clear social impact. Origin advocate early intervention – with involvement from early childhood and primary years right through to tertiary and the workplace, and educating people that the engineering mindset is adaptable, and much in demand. Origin know that diverse workplaces create good energy, making them more enjoyable and more open to employees bringing their whole self to work – which is ultimately good for their people. Diversity leads to better ideas, collaboration, decisions and understanding of our customers and gender diverse companies are more likely to outperform the competition – which is good for business.

Who are we as a collective?

The wider network proceeded with a session to discuss our identity as a collective. Our purpose was defined as the following:

The University of Queensland
Brisbane QLD 4072 Australia

T   +61 7 3443 1654
F   +61 7 33651881

E   we@eait.uq.edu.au
W   eait.uq.edu.au/we

ABN: 63 942 912 684
CRICOS PROVIDER NUMBER 00025B

- To attract, develop and retain women in Engineering and IT
- To work with all stakeholders to provide a unified, consistent, holistic and effective cultural shift
- To lead Australia wide initiatives for women in Engineering and IT

Our collective values included being:

- Strength-based
- Collaborative
- Authentic
- Evidence-based
- Brave, innovative
- Equitable and inclusive
- Open, honest, transparent and trusting

Our collective goals are:

- National communication of impact, collective initiatives, role models
- Increase impact and efficiency through collaboration
- Gain visibility of our collective impact at a national government and international level
- Attract funding as a collective for collaborative initiatives
- Inclusive teaching and degendered curricula
- Reach under-represented cohorts: Rural/regional/low SES/career changes into STEM

Barriers to collaboration were identified as: lack of communication, competitiveness, individual ad-hoc initiatives, resources, managing partnerships and geographical location.

World Café Sessions

The first workshop focused on Educators and Students, to discuss the needs, challenges and opportunities and the second workshop focused on Industry to discuss models of partnership with industry that would work well. From these discussions, six major themes were identified as the following, which formed the basis of developing action plans and outcomes on Day 2.

CULTURE
- Male champions for change
- Unconscious bias
- Language used – positive
- Leaders = role models
- Barrier - over qualification
- Redefining culture of women in STEM

OUTREACH
- Providing female role models (students and industry)
- Providing real world, hands on activities and workshops
- Codesigning with students/teachers/parents
- Multi touch point and its long-term impact
- Early intervention for pipeline
- Underserved population
- Work with curriculum

REDEFINING STEM
- Promoting social impact
- Context and purpose of Engineering and IT

- Parents/teachers/positive influences
- Breaking down stereotypes
- Including/connecting STEM with pop culture - relatable STEM culture
- Increasing value of STEM to encourage women

PROFESSIONAL DEVELOPMENT
- Upskilling teachers and parents
- Instilling confidence
- Growth mindsets
- Using available resources effectively
- Volunteering as professional career development

INDUSTRY AND WORKPLACE
- Ongoing initiatives
- Addressing pay gap and flexibility
- Leadership leads to cultural change (females)
- Opportunity for growth
- Recruitment, re-engagement
- Imposter syndrome
- Affirmative action – top/middle and bottle management

EVALUATION AND DATA
- Impact evaluation
- Data collaboration
- Streamlined reporting
- Monitoring and documentation throughout
- Research

Day 2 of the Symposium started with a panel event on the topic - How to implement a scalable, sustainable program? with panellists, Nicola O'Brien from Australian Computing Academy (ACA) and Aimee Phillips from the Department of Education. Nicola mentioned it is important to have face to face professional development for teachers such as ACA's Teacher can Code PD which runs 6 time a year, which encourages teachers to make physical devices using micro bits and ultimately pass these skills onto other teachers and expand the reach of developing new and required skills in the teaching community. She also mentioned to address the increasing demand of teachers needing to upskill in Computer Science, ACA has a Digital Technologies and Cyber Security Online courses.

Aimee discussed how pedagogy as we once knew is evolving and the new STEM spaces in schools as a great way to implement technology effectively and ultimately change classroom learning. She mentioned we need to create culture, and cycle and sustainability with spark and momentum. Aimee supported Nicola's comments that with the new curriculum and changes in the way teachers are expected to teach, making online resources and professional development is a necessity. Suggestions included contextualising content of curriculum through project-based learning and changing the way teachers are embedding STEM in all lesson, while acknowledging the challenges with time and casual staff shortage.

How to build on one off visits to schools? –the panellists mentioned we need to encourage sustainable engagement, and leave our impact for teachers and students to embed this in everything they do and spread the reach. We need to be dynamic and relevant in our offerings.

Other discussion points included the power of female role model teachers in STEM, being inclusive in our engagement rather than gender bias – running workshops that are appealing to all students and not explicitly address gender issues with teachers engaged with.

The Lunch and learn session on Day 2 was hosted by Suncorp, Gold Sponsors of the Symposium.

Themes and 12-month action plans

UQ led the theme of Professional Development with University of Adelaide, addressing the issue of parents and teachers' perceptions and understanding of STEM which is currently limiting:

1. Encouragement if your people to actively participate in STEM
2. Guidance of the choices our children are making
3. Visibility and leveraging of opportunities

The action plan and outcomes developed for this theme were as follows:

1. Audience analysis to determine age and demographics we are targeting to define scope, by January 2020
2. Compile current resources to determine what is available for parents and teachers already, evaluate their effectiveness and identify gaps, by end of March 2020
3. Focus groups for parents and teachers (separately) for their feedback, identify gaps and opportunities and develop a pre and post initiative survey, by end of June 2020
4. Develop resource to have a finalised concept and test in focus groups for any teething issues, by August 2020
5. Roll out resource for feedback and evaluation in pilot form by end of October 2020 (12 months goal)
6. Roll out more broadly by end of 2020.

The first follow up call with each team lead is planned for late November, to share their confirmed initiative (and seek any feedback required), budget they will likely need, timeline for the project and next steps, discuss how often we would like to meet as team leader cohort and discuss how the initiative would like to share their progress.

The wider network will continue to work on the 12-month action plans and the outcomes will be followed up at the 2020 Collaboration Workshop that will be hosted by University of Adelaide with the support of The University of Queensland.