



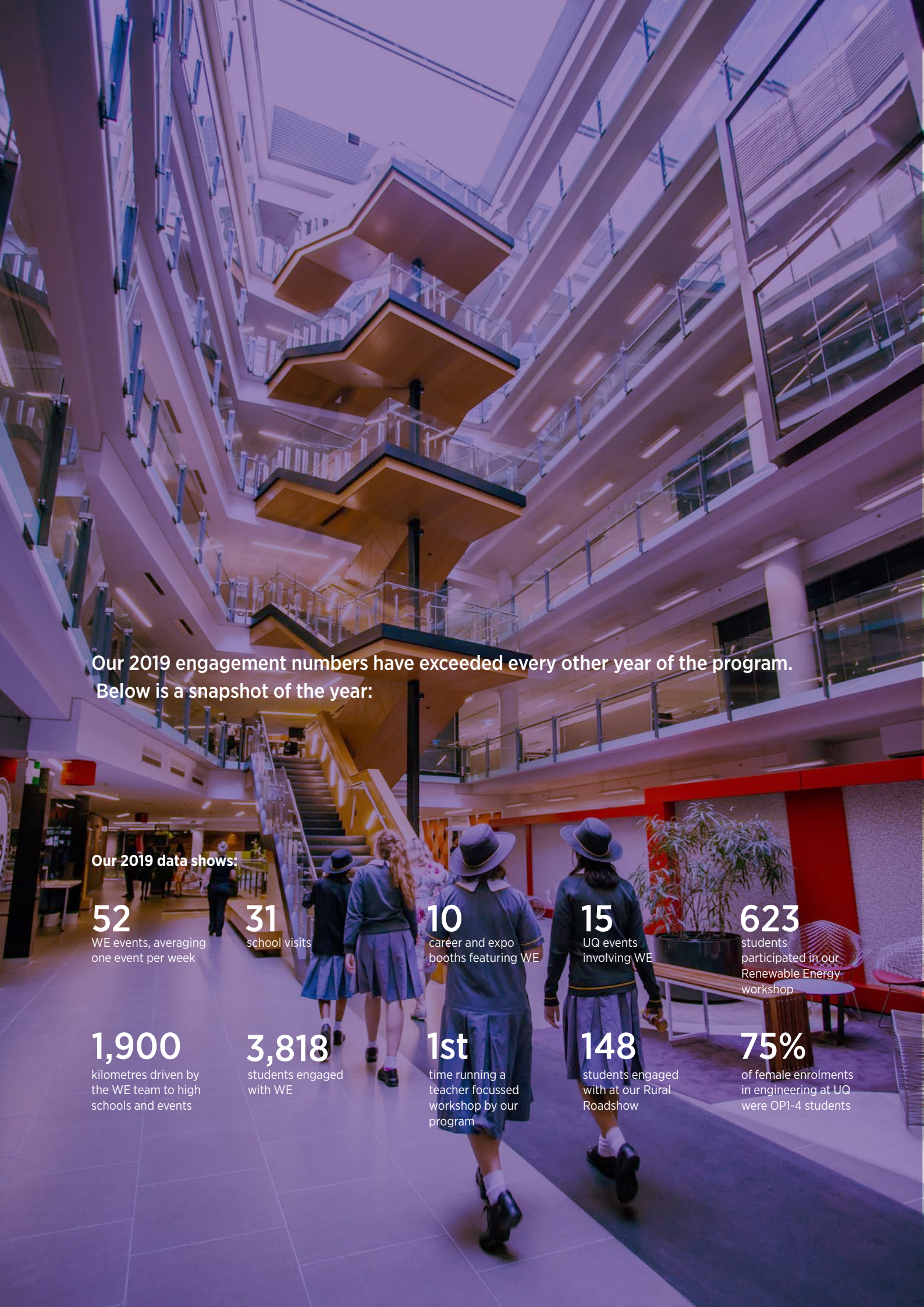
THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Annual Report

Women in Engineering

2019



Our 2019 engagement numbers have exceeded every other year of the program. Below is a snapshot of the year:

Our 2019 data shows:

52

WE events, averaging one event per week

31

school visits

10

career and expo booths featuring WE

15

UQ events involving WE

623

students participated in our Renewable Energy workshop

1,900

kilometres driven by the WE team to high schools and events

3,818

students engaged with WE

1st

time running a teacher focussed workshop by our program

148

students engaged with at our Rural Roadshow

75%

of female enrolments in engineering at UQ were OP1-4 students

2019 Engagement Prospective Students

In 2019 WE have engaged with:



3827

Students



2597

Female students



167

Teachers and
guidance officers



169

Schools across
QLD

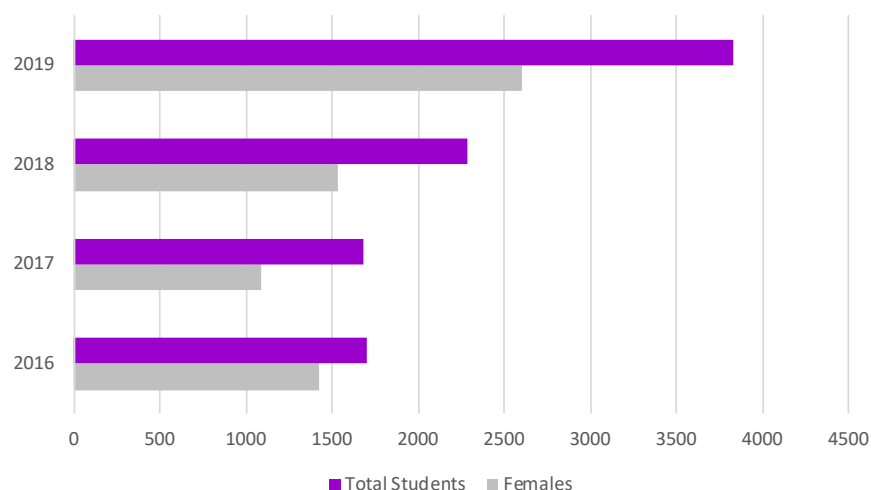
Engagement list for 2019:

All Hallows' School
 AYAF Careers Fair
 Brigidine College
 Brisbane Girls Grammar School
 Brisbane State High School
 Cannon Hill Anglican College
 Cleveland District State High School
 Darling Downs Rural Roadtrip
 EmpowHer Conference
 Girls in Computer Science
 Good News Lutheran School
 Indooroopilly State High School
 Indooroopilly State High School
 InspireU
 Ipswich State High School
 Islamic College of Brisbane
 It Takes A Spark Conference
 Kedron State High School
 Kenmore State High School
 Lourdes Hill College
 Mary Mackillop College
 Moreton Bay College
 Mount Alvernia College
 Open Day - We Morning Team
 San Sisto College
 Science and Engineering Challenge

Somerville House
 St Aidan's Anglican Girls School
 St Margaret's Anglican Girls School
 St Rita's College
 STEM Girl Power Camp
 Stuartholme School
 TSXPO
 UQ Careers that Shape the World
 UQ STEAM Hackathon
 WE Explore Day
 WE Explore Industry Day
 Yeronga State High School
 Young Scholars Program



Annual comparison of student engagement numbers



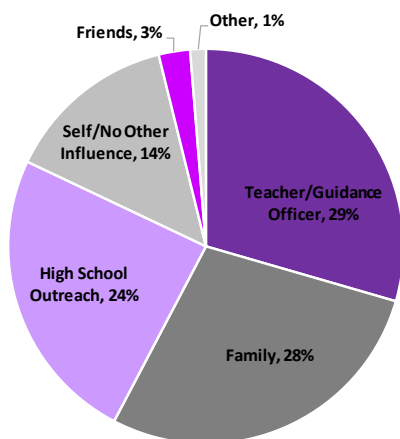


We surveyed our
current female
engineering students
to hear their stories.

Who inspired our **current cohort**

Over 90 female engineering students at The University of Queensland (UQ) answered our 4 part survey on what inspired them to consider engineering.

Who inspired them to study engineering:



The above graph broken down:

- Family
 - > Parents 73%
 - > Siblings 14%
 - > Extended 13%
- High School outreach
 - > Career talks by industry 37%
 - > Campus tour/workshop 32%
 - > School visit from uni 32%

42 respondents said yes to family member being an engineer, and of those:

- 31% said family was their main influence to study engineering
- 21% said teacher/guidance officer was their main influence to study engineering
- 17% said high school outreach event was their main influence to study engineering.

The main themes on their inspiration to studying engineering were summarised into the below categories:

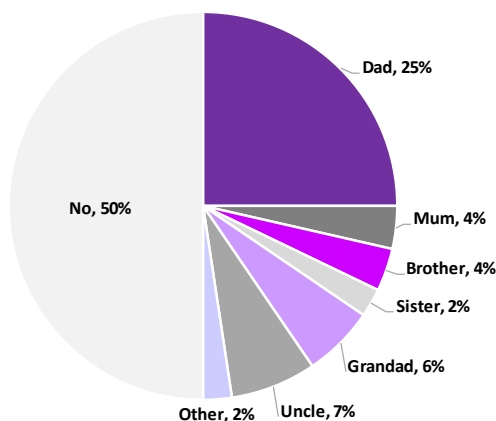
- Health and humanitarian engineering
- STEM strengths and passion
- High school outreach/WE
- Education on what engineering is
- Career and Job Security/Income

Our highest representation of females in UQ's engineering community across all years is Chemical Engineering, with a gender split of 41% females.

WE asked current female engineering students at UQ, what age they decide they wanted to study

- Year 7 and 8 > 2 students
- Year 9 and 10 > 9 students
- Year 11 and 12 > 60 students
- Older > 7 students

WE asked, do they have any family members that are/was an engineer?






“I went to UQ open day when I was in Year 12 and considering engineering as a possibility. Everything they said at the Open Day and on the tour of the engineering faculty really resonated with me so I decided to finalise my choice to do engineering”

“My engineering light bulb came from my physics teacher (an ex-electrical engineer, my favourite teacher... of my favourite subject) and having experienced science but really wanting a faster turn around for what I can create (7yrs vs 20yrs for a biomedical product vs a scientific breakthrough)”

WE strategy prospective students

WE believe the key touch points for our program with our current resources are:

Year 7-8	Year 9- 10	Year 11-12
 <p>Hands on workshops including Renewable Energy - wind turbine activity.</p>	 <ul style="list-style-type: none"> • Impact with engineering • Explore Days • Career sessions • Subject selection • Renewable Energy • Hands on workshops 	 <ul style="list-style-type: none"> • Career Sessions • Explore Day Senior • Explore Day Industry • University life • In-depth workshops

Additional Explore Days

After our survey conducted to current female engineering students and further analysis into past Explore Day conversion data, WE propose running an additional separate Explore Day event aimed at Year 11 students, and cater the current event to Year 9 and 10 students.

The results of the survey showed the average age of when the females spoken to decided to study engineering was 16 and 17, Year 11. Also past event data highlights that the highest conversion of students attending WE Explore Day and enrolling in engineering programs at UQ in subsequent years was in 2014 when the event targeted at Year 11 and 12 students only, almost a quarter of attendees are current engineering students at UQ.

The additional event targeted at senior students will have more advanced in-depth sessions at The University of Queensland and maximise the use of the innovative Engineering facilities.

Industry Days

Based on the post event feedback and successes of the first Industry Day in 2019, WE are looking to expand this unique opportunity in 2020. WE endeavor to invite more of our Advisory Board partners on board to showcase their industries to prospective students and allowing them to gain firsthand experience as life as an engineer. Following on from this, work placement opportunities and connecting high schools directly with industry would be encouraged based on the successful outcome of 2 opportunities created in 2019.

Engagement by Metropolitan Region

Extensive research and historical trend analysis on where our female students enrolling in engineering programs are coming from has identified key strategies that need to be implemented with engaging in particular metropolitan school regions. The majority of female school leavers are from Inner City school region, as our key feeder school data reflects.

Regional Roadshows

WE are interested in doing more rural roadshows in 2020, based on the success of the event in 2019 to the Darling Downs school region. Geographic mapping of our female enrolments from QLD school regions indicates increasing new trends in which will look to expand and connect with new high schools by increasing awareness of engineering at UQ.

Mentoring

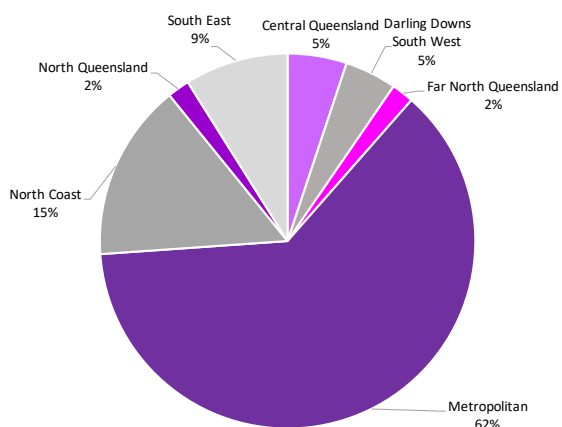
WE would like to provide more mentorship opportunities for female high school students interested in STEM, and connect them with current engineering students, as the missing link between prospective students and industry role models.

New Workshops

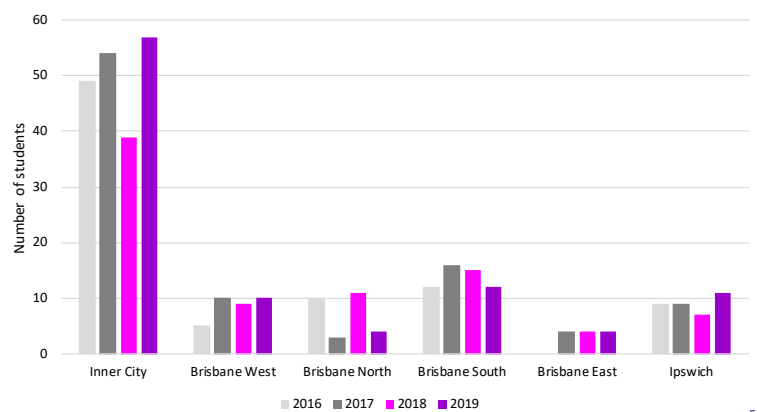
WE hope to bring a new hands on workshop to our program in 2020 that links to the high school curriculum, providing additional resources and options to the high schools in which we connect with.



2019 region breakdown of female enrolments into UQ engineering



UQ female engineering enrolments by Metropolitan Region





WE strategies for our other **key stakeholders**

Current Students

WE have been in contact with The University of Queensland's Engineering, Architecture and Information Technology Employability team to work towards creating more industry focused events to help current female engineering students and industry connect. WE would also like to provide more tailored opportunities for our Advisory Board partners to network and connect with all current engineering students.

Mentors are crucial to personal development – through support, networking and encouragement, in 2020 we will implement a mentoring program for our student leaders with Industry. WE would like to refocus efforts with our current students and offer a networking event with a difference, focusing on diversity and inclusion.

High School Teachers/ Guidance Officers

WE will expand our teacher focused workshop in 2020 at WE Explore Day and continue to provide the required resources that high school teachers request to inspire the next generation of future engineers. WE recognise that utilizing the knowledge and resources we have in the Faculty and at UQ will be in greater demand to not only engage with prospective students but provide relevant classroom content that aligns with the school curriculum for teacher professional development.

The engagement at Brisbane Girls Grammar School this year included a special presentation and academic representation on the topic of Circular Economies was one such example of this. Our STELR Renewable Energy workshop that aligns with the Year 8 curriculum has also been in high demand for engagement with this year level. Topics of future interest will be in sustainable design, and designing with empathy.

Parents

As we continue to see the importance of parents in female students university choices, WE want to organize a focus group workshop that allows us to empower the parents to influence with this knowledge, educate the parents on our engineering messaging and for parents to reflect on their own careers, what impact they are making, what/if any biases were imposed on them and their choices after school.

Wider Networks

WE attended the Women in Engineering and IT Symposium hosted by UTS and UNSW in Sydney this year. Our UQ run biennial collaboration workshop event will be held in 2020 at University of Adelaide. WE have also engaged with various other faculties across UQ including Science and Mathematics departments in ways we can collaborate our outreach engagement efforts and allow for a more rounded representation of STEM at UQ for school visits. This was requested by teachers in our collaboration workshop at WE Explore Day in 2019.



Special thanks to our program partners for their continuous support

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