



Celebrating Diversity

Indigenous Australian engineering charity enters 20th year

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SPEAK TO CHRIS TAYLOR

A CHARITY providing academic and financial aid to indigenous Australians is entering its 20th year. Engineering Aid Australia (EAA) was established in 1996 by the late engineer Jeff Dobell to address the lack of young Aboriginal and Torres Strait Islander students from remote communities studying engineering disciplines. Before his intervention, the University of Sydney had educated just one indigenous engineering graduate in the previous 80 years.

In 1998, Dobell established the Indigenous Australian Engineering Summer School (IAESS) in partnership with the University of Sydney. The goal was to provide an annual summer school for approximately 20 indigenous secondary school students entering their final or penultimate year – an opportunity to live on a university campus for a week to experience different faculties of engineering, and provide scholarships for the students to either stay in secondary school, or go on to study an engineering degree at university.

The summer school was expanded in 2010 to include Curtin University, and tours of engineering facilities at Woodside Energy's headquarters in WA have been organised to inspire students to take up a career in engineering.

The 2016 summer school was held between 10–16 January, with 20 students attending the school at Curtin University and 23 at the University of Sydney.

THE SUMMER SCHOOL

The school offers activities that demonstrate a wide range of engineering disciplines. The students work on circuits and robotic devices to demonstrate electrical engineering and programming, with solar cells and renewable technology for environmental engineering, and visit the Sydney Opera House to learn about design engineering.

The students also have an afternoon in the chemicals laboratory to receive a taste of the chemical engineering problems Australia faces. This year, they made artificial snow, and worked with water-retaining materials. Peter Berry, CEO of EAA says this was a fun activity with a deeper message about how WA regularly suffers from water shortages, and how chemical engineers can help.

The students work with engineers from the university faculty, and are mentored by previous members of the programme who

have gone on to have careers in engineering. They have several informal networking events during the week in which they have the chance to ask questions about careers and the university courses, and take advantage of the engineering experiences of the volunteers.

Berry says the overall aim of the summer school is to “inspire them, raise their career aspirations, and realise that they too could become engineering graduates after studying at university.”

CORPORATE PARTNERS

The EAA has received sponsorship from firms ranging from local engineering houses to large multinationals based in Australia including Woodside Energy, Arup, and BHP Billiton. Each company contributes running costs for the summer school, plus money towards university scholarships for the students who wish to study engineering.

Berry says companies of all sizes in Australia are keen to hire indigenous engineers because in order to win government contracts, Australian law requires companies to improve employment prospects of the indigenous population through a Reconciliation Action Plan (RAP).

He says, “If they engage the kids, they are fulfilling part of their obligation under their RAP. All the big companies have them, and when they launch them, they have a ceremony and make an event out of it.”

SCHOLARSHIPS

Students who attend the summer school can receive a continuing school scholarship worth A\$400 (US\$279) to incentivise and support them in completing their final year of secondary school. Students are also entitled to an undergraduate scholarship of A\$3,000 if they qualify for an engineering place at any Australian university.

Additional smaller scholarships are available to encourage leadership qualities and gender diversity. EAA is patronised by Bob Hawke, former prime minister of Australia. Each year, he presents a scholarship to the student that has shown the greatest leadership potential at the summer school.

Scholarships aimed at female students are also available. One of the EAA benefactors donates funds specifically to female students to encourage more girls to study engineering.

GENDER DIVERSITY

Female participants have held steady in recent years, with just under half of the summer school attendees being female.

However, aside from a benefactor's scholarship, Berry insists no other measures have been taken to encourage female students attending the summer school.

He says, “This year, we had eight girls [in WA], and they shared the scholarship, but there has been no other enticement. Whoever wants to come – if they have the necessary educational

standard and they show the right attitude – gets selected.”

CHALLENGES

Berry says the biggest challenges in running the summer school are in raising enough money through corporate sponsorship to sustain the events and finding the best calibre students to take on the commitment of spending a week studying engineering.

Berry adds that the students relish the opportunity to attend the summer school and participate: “The kids’ feedback is wonderful. They all make new friends and they realise what they can do in their careers. For us as organisers, it is quite inspiring to see how they change in their attitudes.”

SUCCESS STORY

Daniel Hill, a plant operations production superintendent at Rio Tinto, attended the summer school in 2002. He says the summer school helped him decide to pursue a career in chemical engineering, as the events put on at the summer school piqued his interest. Combining that interest with his chemistry and mathematics qualifications from high school prompted him to study chemical engineering at the University of Melbourne.

Hill described the summer school as a fun experience. “I got to visit Sydney for the first time. I met interesting people and participated in group activities and workshops.”

After completing his degree, he became a metallurgist at the Energy Resources of Australia's (ERA) Ranger mine which mines and processes uranium oxide. He has worked his way up over the past eight years to manage a team of 60 people, operating Rio Tinto's uranium oxide processing plant.

Hill says the summer school helped prepare him to make “million dollar decisions” that could impact the company greatly on a daily basis. He must make decisions on various processes in the plant including comminution circuits, extraction and solvent extraction circuits and heat transfer processes.

Hill has spoken to young students in his community about his experiences of being an indigenous engineer. He believes education and training is the foundation to gaining a chemical engineering job, and taking the time to identify and develop skills will make someone the best candidate for it.

“Chemical engineering opened the door to a fulfilling career. The discipline is diverse and there is likely to be a field or industry that will interest you. It will also provide your partner hours of entertainment with engineer jokes.”

The IAESS has helped many indigenous Australians find their way into university degrees, and inspire students to begin their careers in engineering.

“In 2015 we had 33 students studying engineering. In 2016 there will be ten more indigenous students who have attended our IAESS enrolling in engineering at universities across Australia.”

Hill will continue encouraging indigenous school students to enter engineering and other successful careers, noting “you can do anything if you put your mind to it.” ■