

# HIGHLIGHTS OF IAES PERTH 2020

Nineteen high school students joined the Indigenous Australian Engineering School (IAES), and ten alumni participated in the Extension Program, which welcomes back highly-engaged students for academic mentoring and personal development. The students travelled from as far as north as Kununurra and as far south as Albany for IAES. Here are the highlights of their week.

## SUNDAY 27 SEPTEMBER

As the students arrived in Perth, IAES Program Manager Tim Keely and the House Parents greeted them. Wisdom in Your Life Director Shaun Nannup conducted a smoking ceremony and helped the students to connect. Shaun facilitated reflective time with the group at various points throughout the week.



*Smoking ceremony with Shaun Nannup*



*Cultural time with Shaun Nannup*

## MONDAY 28 SEPTEMBER

IAES started on Monday morning with the Opening Ceremony, which included an inspiring Welcome to Country delivered by Ingrid Cumming, Noongar Cultural Advisor at Curtin University at the Centre for Aboriginal Studies. Students also heard from IAES Program Manager Tim Keely and EAA Director Larissa Andrews.



*IAES Alumnus (2010) and Graduate Engineer Torey Rickerby set the scene for the week with a talk titled 'Goals and Dreams'*



*Opening Ceremony, including the Welcome to Country*

# TUESDAY 29 SEPTEMBER

## BOC Canning Vale OPERATIONS SITE VISIT

Chemical and Mechanical Engineering were the focus of the students' visit to the Canning Vale Operations site of one of EAA's Principal Partners BOC Limited, a member of the Linde group. The students had a guided tour of the plant, learning about the various aspects of the operation, some of the technical challenges and logistics of cryogenic liquids and the production of critical medical oxygen and other essential gases used in the fight against COVID-19.

After the tour, the students split into teams and competed in a fun trivia activity based on what they had learnt during the visit. They answered with enthusiasm, and the winning team received some cool prizes (wireless speaker or powerpack courtesy of BOC). Others received spot prizes for great answers.



*BOC Process Engineer Emily Price with the IAES students at the Canning Vale Operations site*



*Emily Price (far left) stands beside two IAES Houseparents Cate Hollingsworth (IAES 2016) and Tahlia Prior (IAES 2013) with a small group of IAES 2020 students*

## Indigenous Health App Design with GOOGLE

The students worked on a biomedical design sprint led by Matt Oldakowski and Intan Oldakowska from Biodesign Australia and Mark McDonald from Google. They followed agile industry processes to design an app for improving Indigenous healthcare.

Together they learnt how to refine and validate an idea, turning it into a product spec using empathy and technology. Using real-world industry techniques, they learnt how technology can augment human processes to help people.



*Mark McDonald from Google works with the students during the agile session*



*Biomedical Engineer and entrepreneur Intan Oldakowska lead the students in the design process*



# TUESDAY 29 SEPTEMBER

## Space Science and TECHNOLOGY CENTRE

Our knowledge of the Solar System – how it was formed and how it has evolved – is increasing dramatically as technology improves, telescopes become more powerful and more robotic spacecraft visit more planets, moons, comets and asteroids – with each of these objects having their own unique composition and story of how it has formed and evolved. By studying and comparing these objects, students learnt how we can find out more about the dynamic system in which we live.



*Deputy Director Ms Renae Sayers speaks to the students about the work of the Scientists and Engineers at the Centre*



*PhD students Stuart Buchan and Nathaniel Brough with Project Coordinator Ben Hartig inspiring the future Scientists and Engineers*



*Students Amy, Tiarnee and Indiana engaged in their lesson at the Centre*



*Research Associate Dr Ellie Sansom is the project manager of the Australian Desert Fireball Network. Here she helps Nyokah compare meteorite samples with rock samples from earth*

# WEDNESDAY 30 SEPT

## Building Management Systems WITH HONEYWELL

District Projects Leader for Central West at Honeywell Mark Sinclair arranged for the students to visit the new WA Museum Boola Bardip. Boola Bardip means 'many stories' in Whadjuk Nyoongar, the Country on which the Museum sits. The Museum is a development that combines historic and contemporary architecture to provide opportunities for exploration, sharing of ideas, and storytelling. Mark Sinclair shared with the students some of the highly bespoke Engineering solutions there.



*The BMS site visit with Honeywell at the WA Museum Boola Bardip*

# WEDNESDAY 30 SEPT

## Engineering in COMMUNITIES

The students had an opportunity to hear how engineering can benefit the community from practising Engineers. We thank the following Engineers for their presentations.

Ken Chen from SMEC spoke to the students about the Goongoongup railway bridge project which improves safety for commuters.

Lucy Barton from Woodside talked about her work as a Process Control Engineer and her STEM outreach work with youth.

Emily Price from BOC shared her Engineering career experiences, including moving to different States and working in various industries in a variety of roles.

Ashwin Nayik from Arcadis is an environmental engineer who spoke to the students about sustainable water management solutions that maximise community and environmental benefits. He sits within the Arcadis WA stormwater team and is currently working on the State's largest rail project, Metronet.

“It speaks to how well the IAES program has been running over the years by the number of IAES graduates who come back to support the newcomers. It was a treat watching the confidence these emerging leaders had in introducing themselves to various engineering professionals, engaging in the topics presented and, least surprisingly, taking over the dance floor at the dinner. Definitely one of those occasions where you take out as much out of the experience as the participants.”

Ashwin Nayik from Arcadis



Ashwin Nayik from Arcadis presenting to the students

## NETWORKING FUNCTION

There was a buzz of energy and excitement as the students met engineers from many of Engineering Aid Australia's partner companies at the Networking Function.



Dillon Anderson, Ashwin Nayak and Yidi He from Arcadis with students Tiarnee, Indiana and Houseparent Tahlia



Chantelle Gilbert and Kate Buckle from Arup with students Benjamin and Brodie



Jane Waugh, Emily Price and Stuart Mayne from BOC with EAA Director Larissa Andrews, student Tyrell Lyndon and Houseparent Cate Hollingsworth (IAES 2016)



John Grapiglia and Clinton Lobo from Corrosion Control Engineering with Houseparent Sandro Pitt (IAES 2014)



# WEDNESDAY 30 SEPT

## NETWORKING FUNCTION (CONTINUED)



Mark Sinclair, Nalin Senevirathne, Caleb Toms and Dean McAlpine from Honeywell with students Terralee, Aaliyah, and Imogen



Ebram Ghabbour and Rachel Shaw from John Holland with students Aaliyah, Okie and Abby



Alex Thompson and Joshua Knight from Lyndsay Dynan with students Jacob and Stephen



Daniel Collopy and Stephen Barrett from Norman Disney & Young with students Rhys Barrett and Sterling Winmar (IAES 2016)



Ken Chen and Richard Isted from SMEC with students Tiarnee, Tahlia and Benjamin



Elvis Saric and Philippa Vetten from Veolia with students Abby, Djai, Tiarnee and Lily



Callum Burnett and Daniel Hackwill from Woodside with students Okie, Abby and Tyrell



Trevor Tann from WSP with students Benjamin and Brodie



Mia Carlton and Jake Reilly from EY with student Indiana



# THURSDAY 1 OCTOBER

## SMEC PERTH CITY OFFICE

Nick Tinworth demonstrated two types of software to the students: Navisworks and Microstation. Nick is the Manager of Technical Services (Infrastructure) for Victoria and Tasmania and the CADD Team Leader CADD at SMEC.

Navisworks is used in infrastructure design for clash detection between various assets within a road corridor (e.g. underground utility services and drainage pipes). Nick showed the students the process of clash detection and how they communicate these findings to other designers and engineers so that they can find ways to remove the clashes. Nick also showed the students how Microstation is used on large-scale infrastructure projects to produce engineering drawings that give clear direction to the people constructing the project.



*Nick Tinworth demonstrates Navisworks and Microstation software used in the development of large-scale infrastructure projects*



*Richard Isted gave each student an opportunity to visit a Melbourne-based road project in a 3D virtual reality model*



“ I REALLY FEEL LIKE THE IAES HAS BEEN AN INCREDIBLY USEFUL EXPERIENCE FOR ME. I BELIEVE I HAVE GROWN SO MUCH DUE TO THE CAREFUL GUIDANCE OF ALL OF OUR DEDICATED, LOVING, AND CARING HOUSEPARENTS. ”

*Feedback from an IAES Perth 2020 student*

# THURSDAY 1 OCTOBER

## A message from GOVERNOR KIM BEAZLEY

We thank The Honourable Kim Beazley AC, Governor of Western Australia for welcoming the 2020 Perth IAES students, the Extension students and representatives from Curtin University and our corporate partners to Government House in Perth.

"One of the reasons why I am so delighted to be hosting this event is that Engineering Aid Australia (EAA) was a tremendous commitment of my old boss, the late Bob Hawke AC. Bob was delighted and proud to be engaged with EAA as he thought that, in terms of building competence in the community broadly and opportunity in particular for Aboriginal Australians, you could do no better than establish a linkage effectively between those opportunities, the encouragement of aptitudes for maths and science and a nation-building profession like engineering."

**The Honourable Kim Beazley AC,**  
Governor of Western Australia



*Governor Kim Beazley, Curtin University Provost Alan Dench and Ms Lara Ellson (Aurecon) chat with student Tiarnée Lester*

## GOVERNMENT HOUSE RECEPTION



*Tiarnée Lester, Indiana Rutter and Rhys Barrett speak about their experiences at the IAES and thank the Governor*



*Alex Roger from NDY speaks with some of the students*



*Elvis Saric from Veolia sharing stories at the reception*



*Governor Kim Beazley chats with Amy Gribble and Terralee Penny*



# FRIDAY 2 OCTOBER

## 'Think Like a Designer' workshop at ARUP

Kate Buckle and Chantelle Gilbert from Arup started with an introduction to engineering principles, and the breadth of engineering and consulting services at Arup before presenting the Aboriginal Male Healing Centre (AMHC) project to the IAES students. The Centre aims to break cycles of destructive violence through clinical therapy and holistic healing. Once open, the Centre will offer a more forward-thinking alternative to incarceration for perpetrators of domestic violence and a better future for affected families.

The students divided into four groups, each with a focus area: Environmentally Sustainable Design, Electrical Engineering, Water Engineering, and Constructability. As they rotated through each group, they considered what features the buildings should contain, how these might require engineering consideration, what sustainable practices they knew about, and how they could apply design thinking principles.



*Arup 'Think Like a Designer'*



*Arup Designer workshop*

## GRADUATION DINNER



*The Graduation Dinner at the Duxton Hotel Perth was a fitting celebration to conclude a very successful IAES*



*Student Teylan Rogers receives her certificate and Dark Emu book from EAA Director Larrisa Andrews and Professor Jeremy Kilburn, Pro Vice-Chancellor, Science and Engineering at Curtin University*



*Shaun Nannup and EAA Director Ezra Jacobs-Smith at the Graduation dinner*



*Students celebrate the conclusion of the week with new friends from many different regions of Western Australia*