We acknowledge the Traditional Owners of the land in which the Victorian Indigenous Engineering Winter School took place, the land of the Wurundjeri, and pay respect to their Elders and families.
Victorian Indigenous Engineering Winter School (VIEWS)

Succeeding the inaugural Victorian Indigenous Engineering Winter School (VIEWS) 2016, VIEWS 2017 was held in Melbourne from 1-8 July 2017. Fourteen, year 11 and 12 Indigenous students from across Australia participated in a rich experience aimed at expanding their prospective on engineering and inspiring them to consider engineering as a career.

VIEWS, an initiative arising from the 2015 National Indigenous Engineering Summit, was a collaborative venture between The University of Melbourne, RMIT University, Swinburne University and Monash University. Its aim was to provide Year 11 and 12 Indigenous students with an immersive experience of engineering and the offerings of the four universities.

Under the patronage of Professor Marcia Langton, VIEWS received generous support from each of the four universities, and sponsorship from Airmaster, Google, ARUP, Honeywell and Sypaq. In-kind sponsorship was received from BARPA.

“The generosity of our faculty volunteers and staff as well as that of our sponsors is inspired by the need to reach parity for Indigenous professionals in the fields of engineering so that they too can contribute to making Australia great.”

Professor Marcia Langton, VIEWS Patron

The VIEWS program (see following pages) included:

- **Residence on campus** at Trinity College at the University of Melbourne
- **Real-world experience of engineering through site visits** to BARPA and ARUP that provided insights into the global challenges that engineering can address and hands problem solving
- **Hands-on workshops** to develop the problem solving and design skills used every day by engineers
- **Connection with Indigenous Support Units and meeting Indigenous Elders**
- **An opportunity to explore different university campuses**, engineering options available and the pathways to studying engineering
- The chance to **speak with** Indigenous students and Indigenous engineers

The student feedback was very positive, with students valuing the rich experience VIEWS provided.

“Being apart of VIEWS was the most productive week any Aboriginal student could experience. I learnt the values of community and culture in an urban area like Melbourne. VIEWS gave me the experience of university life away from home and the importance and application of engineering.”

VIEWS participant
The 2017 VIEWS Experience

Supporters

The Steering Committee of Victorian Indigenous Engineering Winter School would like to express our gratitude to our Industry sponsors. Without the generous support of our Industry sponsors, and the sponsorship and collaborative engagement of the four universities, the VIEWS program would have not been possible.

Indigenous students from around Australia came together for an exciting and inspirational week to explore the engineering courses offered at four of Australia’s best universities, learn about different pathways into engineering, hear first-hand, inspirational stories from Indigenous engineers and engineering students, and experience the day-to-day work of ‘real’ engineers.

Thanks to our gold sponsors:

![Airmaster](image1.png) ![Google](image2.png)

Thanks to our bronze sponsors:

![ARUP](image3.png) ![Honeywell](image4.png) ![SYPAQ](image5.png)

Thank you to The University of Melbourne, Monash University, RMIT University and Swinburne University for your sponsorship and support.

![The University of Melbourne](image6.png) ![RMIT University](image7.png) ![Monash University](image8.png) ![Engineering and Technology Swinburne](image9.png)

Ngarara Willim Centre, RMIT Indigenous Centre, Murrup Barak Indigenous Centre and the Yulendj Indigenous Engagement Centre Monash.

Thank you to our in kind sponsor for your enthusiastic support.

![BARPA](image10.png)

We will keep sponsors updated of the ongoing success of VIEWS participants, who will continue to be supported through the VIEWS alumni network.
# The 2017 VIEWS Experience

## Supporters

<table>
<thead>
<tr>
<th>Patron:</th>
<th>Professor Marcia Langton</th>
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<tbody>
<tr>
<td><strong>Steering Committee:</strong></td>
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<tr>
<td><strong>Chair:</strong></td>
<td>Brendon McNiven, Principal Engineer, ARUP</td>
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<tr>
<td>Melbourne University:</td>
<td>Professor Justin Zobel</td>
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<td></td>
<td>Ms. Hope Perkins</td>
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<td></td>
<td>Ms. Michelle Bellino</td>
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<td>Dr. Juliana Kaya Prpic</td>
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<td>Ms. Nicole Major, Murrup Barak</td>
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<tr>
<td>Monash University:</td>
<td>Associate Professor Victoria Haritos</td>
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<td>RMIT University:</td>
<td>Dr. Matthew Currell</td>
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<td>Ms. Stacey Campton, Ngarara Willim Centre</td>
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<td>Mr. Kevin Moore, Ngarara Willim Centre</td>
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<td>Swinburne University:</td>
<td>Dr. Llew Mann</td>
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<td></td>
<td>Dr Scott Rayburg</td>
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<tr>
<td><strong>Engineers:</strong></td>
<td>Ross Peek, Indigenous Engineer, Melbourne School of Engineering Alumni</td>
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<td><strong>Indigenous Business:</strong></td>
<td>Simon Walter, BARPA</td>
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<tr>
<td><strong>Sponsors:</strong></td>
<td>Gold Sponsors: Airmaster, Google</td>
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<td></td>
<td>Bronze Sponsors: ARUP, Honeywell, SYPAQ</td>
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<tr>
<td><strong>In-kind sponsor:</strong></td>
<td>Barpa</td>
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<tr>
<td><strong>Keynote speaker:</strong></td>
<td>Dr Misty Jenkins</td>
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<td>Laboratory Head at the</td>
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<td>Walter and Eliza Hall Institute</td>
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<tr>
<td><strong>Indigenous Elders:</strong></td>
<td>Aunty Diane Kerr, Wurundjeri Elder</td>
</tr>
<tr>
<td></td>
<td>Aunty Diane Singh, Yorta-Yorta/Wemba-Wemba Elder</td>
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<tr>
<td></td>
<td>Dean Stewart, Wemba Wemba/Wergala man,</td>
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<td>working on Boon Wurrung Country with</td>
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<td>consent from the Boon Wurrung Foundation</td>
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<td>(Aunty Carolyn Briggs)</td>
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<tr>
<td><strong>Indigenous Mentors:</strong></td>
<td>Laura Brown, Clint Hansen, Shannon Kilmartin-Lynch,</td>
</tr>
<tr>
<td></td>
<td>Zane McMillan, Jyhia Sheppard</td>
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</table>

"Incredible great balance of cultural and educational activities."
VIEWS participant

"I loved the camp was because we got to experience the NAIDOC March which was incredible."
VIEWS participant
The 2017 VIEWS Experience

Participants

The 14 Indigenous students (9 male, 5 female) who attended VIEWS attended various schools from around Australia (Figure 1).

Figure 1: Australia-wide participation in VIEWS

“Although we were all away from our families I believe that we formed some kind of weird family of our own and all supported each other”
VIEWS participant

“Was amazing, everyone was lovely to meet”
VIEWS participant
The 2017 VIEWS Experience Program

The Indigenous students who participated in the Victorian Indigenous Engineering Winter School were given a first-hand experience of various aspects of engineering. The program extended for five days and offered Year 11 and 12 Indigenous students an opportunity to expand their perspective on engineering.

The philosophy underpinning the program was to engage the students in areas outlined below.

1. Explore four universities

The success of the VIEWS arose from its being a collaboration between four universities who were mutually concerned to expose the participants to the full range of opportunities available.

Each day was hosted by a different university and included a range of presentations and engaging activities as summarised in Table 2.

Visits to each campus enabled students to explore the facilities and the various courses on offer and to discover which university might best meet their particular needs and aspirations.

“University was never a thought and now it’s all I want to do!”

VIEWS participant

Students enjoyed meeting the staff from the Indigenous Engagement Units who welcomed them and described the services and support they offered. They also enjoyed hearing stories from Indigenous Elders, Aunty Diane Kerr and Aunty Diane Singh.

In their feedback about the VIEWS, students particularly valued the opportunity to meet and talk with other Indigenous students studying engineering. Informal Yarning Circle discussions were held every evening at Trinity College and very successful, with students being able to share concerns about coming to university and find common ground about Indigenous culture.

2. Meet Indigenous engineers

VIEWS was designed to offer students the opportunity to meet Indigenous people who had successfully undertaken university study and become engineers.

Dr Misty Jenkins BSc (Hons), PhD, MAICD

Dr Misty Jenkins is a Gunditjmara woman and a NHMRC RD Wright fellow and laboratory head in the Immunology Division at Walter and Eliza Hall Institute for Medical Research, where she researches cellular immunology and cancer immunotherapy. Misty studied her PhD in viral Immunology with Nobel Laureate Peter Doherty at The University of Melbourne, followed by postdoctoral positions at The Universities of Cambridge and Oxford, followed by a postdoctoral position in cancer research at The Peter MacCallum Cancer Centre in Melbourne.

Dr Jenkins has a long-standing interest in T cell killing, the immune synapse, and harnessing the power of the immune system to fight cancer.

Dr Jenkins was awarded the L’Oreal for Women in Science Fellowship (2013), was Tall Poppy of the year (2015) and won the Westpac/Australian Financial Review Top100 Women of Influence award (2016). In addition to her research career, Dr Jenkins is experienced in governance and is passionate about Indigenous health and education. She is a Board Director for Monash Health, Director and Deputy Chair of The National Centre for Indigenous Genomics at ANU, ambassador for the Poche Centre for Indigenous Health and is Chair of the NHMRC Indigenous Project Grant Review Panels.

Mr. Ross Peek qualified as an engineer from the University of Melbourne. As an Indigenous Australian who has taken the pathway, Ross served as a mentor to students through the VIEWS program, providing advice on how to overcome some of the hurdles they may experience in their studies.
The 2017 VIEWS Experience
Program

3. Discover pathways into engineering
In addition to exploring the various pathways offered by the four universities, participants were also able to discover other possible pathways into engineering, as exemplified by Barpa, which is a partnership between the Federation of Victorian Traditional Owners Corporations and Cockram Construction.

Students experienced the sort of work that Barpa undertakes and heard about the company’s Indigenous traineeships that are an alternative pathway to engineering construction work.

“Being a part of VIEWS was the most productive week any Aboriginal student could experience. I learnt the values of community and culture in an urban area like Melbourne. VIEWS gave me the experience of university life away from home and the importance and application of engineering.”
VIEWS participant

4. Experience the work of engineers
An important element of the program was the industry visits, which exposed students to the variety and diversity of an engineer’s daily work. The sites visited included:

- **Barpa Construction**, where students were exposed to some of the issues and complexities of translating architectural plans into real on-the-ground structures.
- **ARUP**, the global engineering consultancy, who provided an opportunity to hear stories of engineers at work and to partake in a design challenge based redesigning the Birrarung (Yarra) river. This project also exposed students to the Indigenous Heritage issues that can arise in urban renewal projects.
- **EWB and Robogals of the Monash University Student Chapter** provided workshops on a workshop on renewable energy and the opportunities of working with developing communities and programming robots.

5. Cultural activities
An important element of the program was to provide a connection to the Indigenous culture. Students had the opportunity to participate in a guided tour of the Birrarung (Yarra) river through indigenous eyes, including discussion of the history of engineering/ modification since European settlement and the pre-European history of the river. Students participated in the NAIDOC celebrations by joining the NAIDOC March followed by attending a celebration dinner at the sacred celebration grounds of the MCG, with performances from the Jindi Worbak dancers.

“Every single mentor and staff have strongly supported me during the VIEWS program to pursue further education to inspire the next aboriginal generation.”
VIEWS participant
## Table 2: Summary of the VIEWS program

<table>
<thead>
<tr>
<th>Sunday 2 July</th>
<th>Monday 3 July</th>
<th>Tuesday 4 July</th>
<th>Wednesday 5 July</th>
<th>Thursday 6 July</th>
<th>Friday 7 July</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSTED BY: RMIT University</td>
<td>HOSTED BY: The University of Melbourne</td>
<td>HOSTED BY: Monash University</td>
<td>HOSTED BY: Swinburne University</td>
<td>HOSTED BY: Industry and NAIDOC celebrations</td>
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</tr>
<tr>
<td>Walking Birrarung (Yarra) tour: A guided tour of the river through indigenous eyes, including discussion of the history of engineering/modification since European settlement and the pre-European history of the river.</td>
<td>PRESENTATION: Illustrations of and exploring what Biomedical Engineering is and the advances in the industry and site visit to a BARPA construction project. Presented by Daniel and Heath Alex Kerr</td>
<td>ENGINEERING DESIGN CHALLENGE: Will your bridge bear the weight?</td>
<td>ENGINEERING DESIGN CHALLENGE: Workshops conducted by Robogals* robot programming and EWB* build/test and discussion of renewable energy</td>
<td>ENGINEERING DESIGN CHALLENGE: Urban Heat Island – indoor/outdoor air quality exercise and Aviation/Flight simulator experience</td>
<td>ENGINEERING DESIGN CHALLENGE: Urban renewal engineering – Redesigning the Yarra River with ARUP engineers</td>
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</tbody>
</table>

*Monash Student Chapter
The interview conducted with Professor Peter Scales, Director of Engagement at the Melbourne School of Engineering was quoted “that while many students are interested in engineering, the field of biomedical engineering is now making a huge impact in health.

“The clinical equipment and instrumentation side of biomedical engineering that is critical to the treatment of chronic diseases needs significantly more Indigenous involvement,” says Scales.

“Our biomedical engineering staff have significant overlap with our medical precinct and for the students to see that they can work in engineering and in medicine is powerful. VIEWS is about inspiring the students so that they can see themselves in careers that change things and make a difference.”

The success of the program can already be gauged by the enrolment of at least two VIEWS students from last year’s cohort. One is in an engineering discipline, having been selected as a recipient of the Vice Chancellors scholarship for 2017, while the second is now studying Arts Law.

VIEWS 2017 is sponsored by Google, Airmaster, SYPAQ, Honeywell and ARUP, with in kind support from BARPA.
The 2017 VIEWS Experience

Media summary

Source: Education Today

Indigenous high school students get hands on with biomedical engineering

Image: Students attending a practical workshop at RMIT University last year.

The University of Melbourne’s biomedical engineering program will showcase some of the world-leading research to this year’s Victorian Indigenous Engineering Water School (VIEWS) cohort.

The group of 17 students, who come from a mix of city and regional schools across Australia, will participate in a 12-day program, doing a 3D printer workshop to build replacements, and have a tour to see RMIT’s Institute for new research under construction.

VIEWS is a partnership between RMIT, Monash University, Swinburne University and the University of Melbourne, and takes Year 11 and 12 Indigenous students, who have enrolled in a Maths and Science subject, to the universities over the course of a week.

Two VIEWS students from last year’s intake are now enrolled in university courses. One student is undertaking an engineering discipline, having been selected as a recipient of the Vice-Chancellor’s scholarship for 2017, while the second is now studying Arts Law.

The VIEWS program will run from 1-8 July. For more information visit the VIEWS website.

Source: The Melbourne Newsroom 10 December 2017
http://newsroom.melbourne.edu/news/indigenous-high-school-students-get-hands-on-biomedical-engineering

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The VIEWS program will run from 1-8 July. For more information visit the VIEWS website.

Source: The Aspiration Initiative

Following the success of VIEWS 2017, sponsors Honeywell committed to providing scholarships for Aboriginal and Torres Strait Islander students studying engineering to put towards study and living expenses.