



Students and industry engage at Monash



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The effort of Monash University's Institute of Railway Technology (IRT), Shaping the Future of Railway was a successful industry-student engagement event that attracted more than 230 students and industry leaders.

Engineering and other students were left in no doubt that rail should be their career of choice at an event at Melbourne's Monash University in September.

Industry leaders were each given five minutes to outline and promote what their organisation had to offer students in terms of career prospects.

The event was upbeat, with all pre-

senters outlining the opportunities and growth prospects for the rail industry.

The event also included the presentation of the 2016 Railway Technical Society of Australasia railway engineering student thesis award, post-graduate thesis award and post-graduate thesis award runner-up.

The master of ceremonies, Professor Mohan Krishnamoorthy, Pro Vice Chancellor of Industry Partnerships, Monash University, introduced the Chancellor of Monash University, Simon McKeon AO.

Mr McKeon, who had a 30-year career with the Macquarie Group, was chairman of CSIRO from 2010 to 2015 and took over the Chancellor position at Monash in 2016, welcomed guests and used a line from Thomas Hardy's novel *Jude the Obscure* as an example of the importance of railways recounting the part when character Jude suggests he and Sue sit in the cathedral but Sue claims to prefer the train station because "that's the centre of town life now".

Mr McKeon was followed by the president of Engineers Australia's Victorian division, Chris Stoltz, who emphasised the importance of regional Australia and the key role railways played in encouraging the growth of regional cities such as Ballarat and Bendigo. Mr Stoltz pointed out that half the working population of

Ballarat travelled to Melbourne to work. Although not all commuted at present by rail, that rail would play an increasingly important part in the growth of these cities, he said.

Bruce Griffiths OAM, rail industry advocate with the Victorian Government, said that when he became involved in the rail industry after four decades working in the automotive industry it had a reputation of being old and tired, but that since then it had taken great strides in boosting its efficiency and had moved on in "leaps and bounds".

He said that over a number of years the commitment of the major players and governments at all levels had seen major development in the recognition of the importance of rail infrastructure.

The Australasian Railway Association's (ARA) general manager of passenger and member services, Emma Woods, highlighted the importance of rail to the economy and young Australian workers' prospects when she pointed out that \$65 billion had been committed to passenger rail projects in the coming five years, offering huge career opportunities. She said rail moved more than 850 million people a year and was increasingly seen as the transport mode of choice.

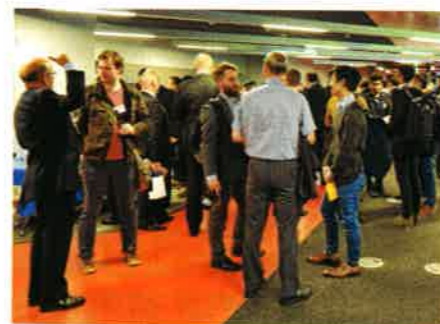
Ms Woods said that with an aging workforce a significant number of workers would be retiring in the next 5-10 years

so the industry was looking to recruit a younger demographic.

She said there was also an active effort to increase the number of women in rail to ensure that the industry had a gender-diverse workforce. Ms Woods

urged women in the audience not to consider rail as a male-only industry, saying, "There are certainly many career opportunities out there."

Jim Hunter, general manager of network engineering at V/Line, pointed



+ CLOCKWISE FROM RIGHT
Post-event networking over drinks; Philip MJ Ellingworth, Metro Trains Melbourne; Bulent Yilmaz, Siemens; Emma Woods, Australasian Railway Association; Rob Robson, Yarra Trams; and Anne Koopmann, Bombardier Transportation.

And the winners are...



MATTHEW KWONG RECEIVED the \$4000 2016 railway engineering student thesis award for his thesis *Simulation of Railway Wheel Wear Behaviour of Driven and Passive Wheelsets Using Universal Mechanism*.



The \$10,000 RTSA 2016 post-graduate thesis AWARD went to Dr Jerome Pun for his thesis *Deformation Behaviour of High Strength Rail Steels in Heavy Haul Railway Systems*.



Andrew George received the \$5000 runner-up award for his thesis *Theoretical and Numerical Investigation on Traction Forces for High Adhesion Locomotives*.

The awards were presented by Railway Technical Society of Australasia (RTSA) executive chair Phillip Campbell OAM (above right).

Both winners and the runner-up also received one year's free membership of RTSA.

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out that V/Line was the largest regional transport operator in Australia. As well as a large passenger network including the new Regional Rail Link, it operated a vast coach network that extended interstate, he said. V/Line also operates a substantial freight network in the west of the state.

Daniel Cullen, manager of engineering at Melbourne Metro Rail Authority, outlined some of the facts and figures behind the Melbourne Metro project, including the creation of 700 jobs at the peak of construction. He also talked of the challenges of the project from an engineering perspective, such as the new metro tunnel crossing the existing city loop tunnels. He said the deepest part of the system would be 39m and the shallowest 15m from ground level.

Melbourne's suburban train operator, Metro Trains Melbourne, was represented by its chief engineer, Philip MJ Ellingworth. Mr Ellingworth said the Melbourne rail network was critical to the growth of the city. He said Metro Trains operated 2340 services a day and employed 5000 staff in 1200 roles. He said that apart from about 70 roles in engineering there were also many engineering support roles, which meant that there were multiple channels for aspiring young engineers wanting to join the industry.

Phil Campbell OAM, general manager of technical standards with Australian Rail Track Corporation and incoming chair of the RTSA, made the presentation of the \$10,000 RTSA 2016 post-graduate thesis award to Dr Jerome Pun and to runner-up Andrew George, who received \$5000. Both the winner and runner-up also received one year's free membership of RTSA.

Earlier, Monash Chancellor Mr McKeon had presented Matthew Kwong with the 2016 Railway Engineering Student Thesis Award.

Mr Campbell went on to talk about the role of ARTC. He said the challenge for ARTC was to remain competitive with road transport and ensure as an industry "we can compete".

He said the era of signals beside track was over, referring to the introduction of the Advanced Train Management being rolled out at the end of the year.

Turning to Inland Rail, Mr Campbell said ARTC was doing it for less than the cost of the new Metro tunnels under Melbourne. He said ARTC would join up a lot of existing rails and build "quite a bit" of new rail.

Wearing his RTSA hat, Mr Campbell

encouraged anyone involved in the rail industry in Australia or New Zealand to join society.

Anne Koopmann, manager of quality and continuous improvement at Bombardier, outlined how joining Bombardier's fast-track management program had allowed her to work on three different assignments for six months each in three different countries before coming to Australia in 2012 to join the manufacturing side on the E-class tram.

Ms Koopman gave some background on Bombardier and its manufacturing operation and presence in more than 60 countries.

Michael Rogers, group manager of rail engineering at John Holland, said projects already announced and still to be announced were worth billions of dollars and were all very complex, but were "absolutely critical for the social and economic needs of our society".

He said that in current students' favour was the fact a lot of what was done in the rail industry was difficult to take offshore. "It would be difficult to build and operate a railway in Australia anywhere but in Australia," he said.

Mr Rogers asked if thought had been given to some of the issues associated with the growth in rail, such as where power would come from to drive the increase in the use of electric trains and trams. He said it was a question Australia's states needed to consider.

Other speakers included Rob Robson, executive director of technical delivery at Yarra Trams; Adam Williams, manufacturing leader of the major bids team at Downer; Matthieu Chevalier, Alstom; and Bulent Yilmaz, head of product sales, Siemens.

IRT director Ravi Ravithran thanked the presenters and the industry partners for their support and announced that Shaping the Future of Railway would become an annual event.

Industry partners supporting the inaugural event were:

- ARA;
- Bombardier;
- ARTC;
- Alstom;
- Downer;
- Engineers Australia;
- RTSA;
- Metro Trains Melbourne;
- Melbourne Metro Rail Authority;
- Siemens;
- John Holland;
- V/Line;
- Yarra Trams; and
- the Victorian Government.

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