



# UQ-KU Project

## 九州大学 研究教育交流拠点

# UQ-KU Project Newsletter

July 2018

THE UNIVERSITY OF QUEENSLAND – KYUSHU UNIVERSITY OCEANIA PROJECT

## July Newsletter

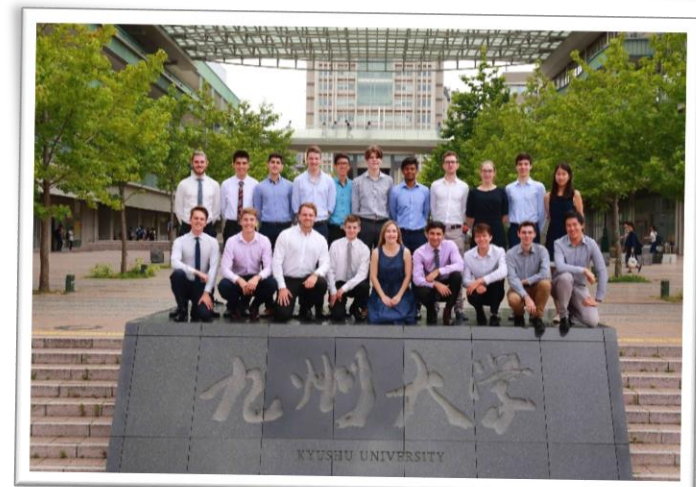
### University of Queensland - Japan Program for Industry Experience 2018

The second iteration of the University of Queensland-Japanese Program for Industrial Experience (UQ-JPIE), as part of the Australian Government New Colombo Plan took place in the first two weeks of July. This programme is facilitated by the UQ-KU Oceania Project and the Kyushu Economic Federation (KEF).

The UQ-JPIE program is designed to give the visiting UQ undergraduate engineering students' first-hand exposure to world-leading Japanese industry and supporting research that is done in Science, Technology, Engineering and Mathematics at Kyushu University.

The UQ-JPIE program for 2018 included visits to the Bridgestone Kitakyushu Plant, Nippon Steel & Sumitomo Metal Corporation, Yaskawa Electric Corporation, Mitsubishi Heavy Industries (shipbuilding), TOTO (ceramics) and Toyota Motor Kyushu.

Prior to the industry visits, the UQ students were fortunate to receive a preparatory lecture from one of Kyushu University's experts for each particular industry. In addition, there were further lectures from Kyushu University's leading researchers across a variety of fields.



*Top: The Welcome Ceremony for the UQ-JPIE students.  
Bottom: UQ-JPIE students at the entrance to Kyushu University*

The twenty students that were part of UQ-JPIE would like to extend their thanks to Professor Chiharu Kubo, President of Kyushu University, Professor Yoshio Hisaeda, Dean of Engineering, Professor Syo Matsumura and Professor Yoshimi Sonoda, Vice Deans of the Faculty of Engineering, for their warm welcome to Kyushu University. Thanks also to Mr Ian Brazier, Australian Consul-General for Fukuoka for his ongoing support and a very special thanks to Professor Qiang Chen, Director of the International Education Support Centre for Engineering and his team for putting together such an invigorating and interesting program.

### UQ Undergraduates Intern at Kyushu University

The UQ-JPIE has not only strengthened the bond between the University of Queensland and Kyushu University, it is a bridge of friendship and opportunity between Australia and Japan. Such opportunities were seized by two UQ scholars from last year's UQ-JPIE, who enjoyed a three month internship at Kyushu University. Ms Rhianna Cardamone was supervised by Professor Hajime Kimura, Department of Marines Systems Engineering. Ms Cardamone will also be worked at Oshima Shipbuilding Co., Ltd. Nagasaki.

Mr Clint Therakam was supervised by Assoc. Professor Ko-ichiro Ohno and Professor Kazuaya Kunitomo, of the Department of Materials Process Engineering. Mr Therakam's internship is part of a project with one of Kyushu University's industry partners Nippon Steel & Sumitomo Metals Corporation. Both Ms Cardamone and Mr Therakam have written about their experiences and their essays are included in this Newsletter.



*From L to R: Professor Syo Matsumura, KU; Ms Rhianna Cardamone, UQ; Mr Ian Brazier, Australian Consul-General; Mr Clint Therakam, UQ; and Mr Fumihito Matsumoto, Commercial Attaché, Australian Consulate*

## KYUDAI INTERNSHIP

Last year I had the pleasure to take part in the Japan Program for Industry Experience (JPIE) – an intensive two week manufacturing engineering program. Since then, JPIE has proved to be a crucial milestone of my life as it shaped my future interests in engineering and helped me better appreciate just how integral the manufacturing industry is for infrastructure, machinery and transport all around the world. Last year we visited some incredible engineering firms including Hitachi, Toyota, Mitsubishi Heavy Industries (MHI) and Nippon Steel. Of particular interest was that all these companies were within a few hours' drive of each other. Furthermore, this sector in the Kyushu island of Japan has exceptional collaboration and infrastructure. Nippon Steel for instance works to provide the world's longest train railways and 40% of MHI's steel for their ships is sourced locally.

Being so fascinated last year by the remarkable industrial facilities in Kyushu, I could not help but return for a further three months. In particular, I wanted to explore the R&D sector of iron production inside the multi-million dollar labs in Kyushu University. Thanks to Prof. Ko-ichiro Ohno's guidance, I was able to familiarise myself with the theory and basic blast furnace application fairly quickly. The laboratory's welcoming atmosphere played a big role in helping me interact with state-of-the-art simulation blast furnaces and sintering ovens. The practical application of this research begins from the functionality of the physical and chemical systems of the small-scale lab experiments. As a result, it was great to find two new behaviours and findings during my stay; behaviours that could potentially impact this multi-billion dollar industry when scaled up. Site visits to the top two steel companies in Japan, Nippon Steel and JFE Steel respectively, showed me the high practical value of the research I undertook in Kyudai. JFE, situated in Hiroshima, was impressive for its structured and compact raw material to production chain. The infrastructure systems appeared to be particularly efficient. On the other hand, the sheer size of all of Nippon Steel's factories completely blew me away. Each factory was practically a city by itself. The scale of such highly complex factories that thrive for decades, producing millions of tonnes of steel, is something I am still trying to digest.



Furthermore, this trip has been an incredible cultural immersion, far beyond anything I would ever have expected. Some of the best highlights during these past three months include exploring Japanese nature and food, joining and competing in a social dance club and building a substantial industry network around Kyushu's steel manufacturing industry. The challenge of life abroad in Japan has taught me to take more accountability in various situations and has helped improve my communication skills. Both of these attributes play a substantial role in project planning and management in the field of Engineering; directly relevant to my degree. In particular, as Japan is a country with minimal English use, I have become far more proficient in communicating via body language and scientific methods. I have no doubt that such skills will improve my ability to communicate between other different cultures in the future.

Finally, meeting with Ian Brazier, the Consul-General, was a good way to discuss and reflect upon these experiences. Now I am back

in Australia, the whole trip has been a bit surreal. Not only do I now have more professional career options, I discovered more subtle cultural intricacies, interacted with native Japanese people and explored the beautiful flora, fauna and seascapes that Kyushu has to offer. I hope to return to Japan once more and continue my journey with this incredible country.

Clint Therakam



## KYUDAI INTERNSHIP

Living and working in Japan for the past three months have been a truly humbling experience. I feel sincerely privileged to have been exposed to the rich variances in culture that exist between Japanese and Australian society, and even more fortunate to witness such intricate dynamics as part of a professional working environment. As an intern with Oshima Shipbuilding Industries and Kyushu University, the encounters I have had, places I have been and friendships I have made have impacted me irrevocably, and have wholly changed my prospects as a student engineer.

The framework of my internship was designed and supported in partnership by Oshima, Kyushu University and the University of Queensland. The opportunity for me to undertake work experience in Japan arose after I visited Kyushu University with the JPIE program in 2017 - a project supported by the Australian Government's New Colombo initiative. This program gave me my first insight into the incredible shipbuilding industry that is extant in Japan and instilled in me the desire to develop my cross-cultural relations further through work-experience in this sector.

The internship commenced with a one-month placement on-site at Oshima Shipyard, Nagasaki. There are certain subduing romanticisms one is inherently inclined to ponder when surrounded by 80,000 tons of steel that has been willed to float on water. I can say with complete certitude that being on-site at Oshima extirpated any complacency I may have developed over the years towards the incredible technologies we are so privileged to employ in our modern world. I learnt so much about the incredible mechanical processes that underpin the continuum of shipbuilding production, from witnessing the first cut made in a metal sheet to voyaging on a 3-day sea trial, having the opportunity to test the complex mechanical components that complement a newly constructed vessel.

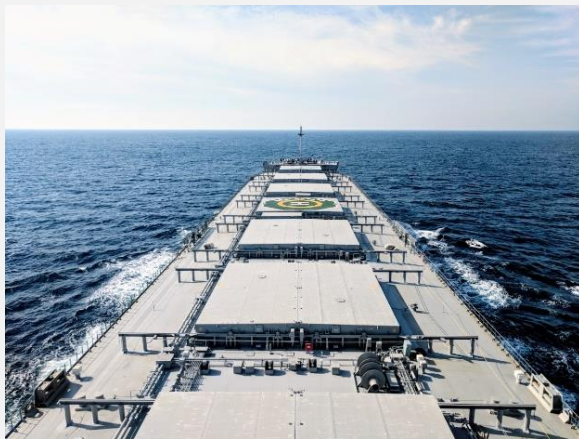


After being presented with such a holistic introduction to shipbuilding, I went on to work at Kyushu University for two months to undertake research commissioned by Oshima Shipbuilding Industries. I was privileged to witness the way in which Japan promotes such a positive dynamic between industry and university research, particularly within the framework of an engineering project. I would travel back and forth between Kyushu and Nagasaki for regular meetings

with Oshima as our project advanced, and my personal tasks would constantly be revised and updated in accordance with progress made by the team of academic and industry professionals I was working amongst. I will be forever grateful to Oshima and Kyushu University for providing me with the opportunity to pursue my love of mechanical systems in this incredibly practical way, one that extends so far beyond the limits of a university classroom.

Throughout this entire internship experience, I constantly found myself to be the undeserving recipient of the generosity, kindness and goodwill that is inherent in Japanese people and culture. Coming from such different life-experiences, it was so humbling to meet people that were so ready and intent to find unity in our diversity. The friends I made presented me with countless cultural experiences;

like pottery painting in Arita, visiting a Tutsuju flower farm, having an owl perched on my head as I sipped coffee and witnessing the electrifying atmosphere that is present in a baseball stadium. In all these memories, what I most value was the opportunity they presented for me to develop my relationships and gain insight into the heart of Japanese culture. When genuine friendship is the foundation of our inter-cultural relations, I know we will be able to achieve so much more when we engage in business and economic ventures. I am so thankful for the myriad of opportunities this internship has presented me with and for the life changing impact it has had on my future as an engineer. I am so excited to be a part of the growing network between Australia and Japan, and to contribute to the developments we will continue to realize as we work alongside each other in friendship.



Rhianna Cardamone

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<http://www.mechmining.uq.edu.au/uq-ku-project>