

# EXCITE

CONNECTING  
ENGINEERING  
DESIGN AND BUILT ENVIRONMENT

WESTERN SYDNEY  
UNIVERSITY



News from the School of Engineering, Design and Built Environment.

eNewsletter | September 2022 | Issue 10



## Message From The Dean

Many staff, students and their parents and friends have attended the September Graduation Ceremonies and celebrated the achievements of our students. I am incredibly pleased to see that over 400 students from our School have reached the milestone in their life to graduate from their degree programs in Architecture, Construction Management, Engineering and Industrial Design. Among them are many recipients of University Medals and First Class Honours Awards. I would like to take this opportunity to congratulate all graduates from our School, wish them well in their future endeavours and encourage them to stay connected with the University and the School in the coming year.

Our university is one of the partners with Powerhouse in organising the Sydney Design Week (15-22 September). On Saturday 17 September, the Architectural Tour of Parramatta and Talks series was hosted at Parramatta Engineering Innovation Hub (PEIH) with over 50 participants. The Amphitheatre on the Ground and Lower Ground levels was a fantastic venue for the three panel discussion sessions at the event.

Western Sydney University has joined The Sustainable Built Environment National Research Centre (SBEnc) (<https://sbenrc.com.au/>) as a core member and represented at the Centre's governing board. The main aim of the Centre is to offer a unique industry-government-research collaboration to improve Australia's Built Environment's industry. Professor Mike Kagioglou, Professor Vivian Tam, A/Professor Yingbin Feng and A/Professor Swapan Saha from our School attended the board meeting with the Chair of SBEnc John McCarthy, AO and the CEO of SBEnc, Dr Keith Hampson and many industry delegates.

Professor Yang Xiang  
Acting Dean

## The Buzz

We have been very busy over the past 3 months, providing STEM experiences for Schools in Western Sydney.

In July we held the Science and Engineering regional Challenge with 500 year 9 and 10 students over 2 days. Schools competed against each other in engineering challenges to progress to the state finals. Challenge day one was won by Cerdon College with a score of 1436.89. Challenge Day two was won by Penrith Selective High School with a score of 1405.81. We wish both schools luck in the state challenges.



In August we held water filtration and Industrial Design workshops for our HeartBeat and Pathways to Dreaming Indigenous programs. For the Science and Maths Exposed Day, we provided Sphero experiences and tours of our Makerspace and Advanced Manufacturing Precinct for over 300 students.

In September Pacific Hills Christian School attended in a STEM day on Kingswood Campus. Staff facilitated Industrial Design and Engineering workshops with 35 students from year 9. Students were challenged to think outside the box in designing a cardboard chair that could withstand the weight of a student with minimal materials. We explored the world of Arduino and experimented with Lab in a Box. Students were also introduced to the world of drones and digital twinning.

We will continue to support our schools in STEM initiatives.

## Teaching and Learning

Mid-semester break is already here, allowing both the students and the staff to pick up the speed and catch up. The first phase of the National Priorities Linkage Fund (NPILF) project has successfully completed yet another hurdle, with 18 subjects being approved by the School Academic Committee. This is a result of countless number of hours contributed by staff in the School and the Learning Futures. Most of all, the 15 industry partners who gave up their valuable time to co-design these subjects need to be commended. Thanks to everyone.

The second phase of the project has just taken off the ground – focusing on the employability skills. Like the first phase, the second phase will be driven by the Directors of Academic Programs in Architecture (UG & PG), Undergraduate Engineering and Postgraduate Engineering. Keep an eye for yet another successful outcome, taking us ever closer to the target of co-designing two-third of EDBe programs in the next two years.

## Research News

Recently, the outcome of the first round HDR scholarships has been released. About 17 applicants to our school have been awarded.

Congratulations to the new students! We are looking forward to seeing a growing HDR community and a great boost to the school's research.

Not only the school is running another round of scientific writing workshop for HDR students, but we are also assisting our students in their well-being, stress management and general self-care practices.

We are planning to organise some consultation sessions including education, practical exercises, discussion, guided mindfulness practice, and plenty of time for Q&A.

## Engagement News



Women of Wisdom (WoW) group organised Speed Networking Event on the 20th September 2022. 18 industry partners were invited to the event. They are Altitude, Aurecon, Beca, Cub Campers, Jacobs, Laing O'Rourke, Lendlease, Maxton Fox, Multiplex, Robson Civil Projects, SMEC, Transport for NSW, Ventia, WSP, EIC Activities, CEC, BKH Group, Total Constructions and RP Infrastructure.

This is part of WoW and School's Engagement initiatives to showcase our talented pool of students to our industry partners and also fulfill the graduate attribute in their confidence, communication and networking skills.

## International News

School is proud to announce that with 133 International enrolments in spring 2022, we have been able to surpass our pre-COVID 119 enrolments in 2019. DAPs, APAs and ADIs (Regional) played a significant role in such a significant success.

As the early semester recruitment pressure is easing, the school is pursuing strategic partnerships with institutions in India, Sri Lanka, Vietnam, Indonesia, South Korea and New Zealand. Engineering, Construction Management and Design are the areas being discussed for articulation and research collaboration.

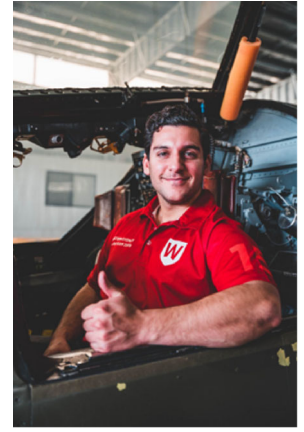
As part of these activities, the recently appointed In-Country Director (Indonesia) has visited the school on 15th September. A delegation from Auckland College of Tertiary Studies met with the school representatives on 20th September to discuss articulation and short course delivery. Next International Committee meeting is scheduled for 28th September.

## Expert Corner (Western Sydney Solar Team)

### Brad Nadalini (Team Manager)

I am ultimately tasked with empowering a team of student volunteers to design, build, test and compete with what is hopefully the most efficient solar powered vehicle on the planet.

Starting out in 2018 as a mechanical sub-team member, I have gained experience at various levels of the project and am confident that the current team is more than capable of upkeeping the team's success (6th place in the Bridgestone World Solar Challenge (BWSC) in 2017, 1st in the American Solar Challenge in 2018, lightest road registered car in Australia to ever compete (116.8kgs) in 2019) in the 2023 challenge.



## Jonathan Allen (Strategy Lead)

I joined the team as a strategy member in early 2021, while in my third year of studying computing and data science at Western. I am now one of the leads of the Strategy team where we build and use advanced computing simulations to predict the optimal speed for the solar vehicle to go at any given point during the Bridgestone World Solar Challenge.

The skills I've acquired from studying at Western has allowed me to work on a completely new system for the 2023 BWSC, as well as create and manage the team's website, ensuring we have a strong public facing online presence.

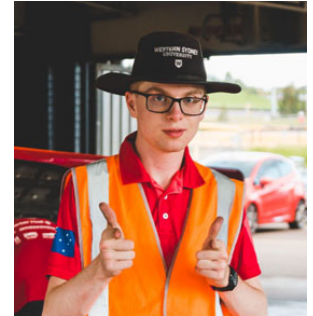


## Peter Duke (Chassis Lead)

My role as chassis lead is to design, engineer and fabricate the crash structure of Unlimited 5.0, WSU's entry into the 2023 Bridgestone World Solar challenge.

I work with various mechanical team members to create the best synergy of safety, efficiency, reliability and performance.

On top of this, a large part of chassis design is solving interface issues between many components such as suspension, steering and electrical wiring, all while making the car ergonomic enough for the driver.

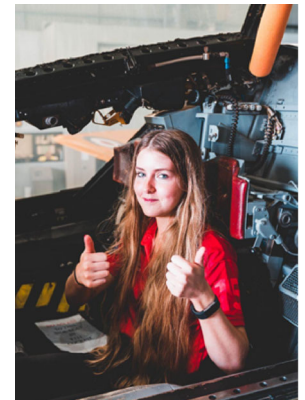


## Nina Walters (Chassis Member)

I joined the mechanical team in early 2022 for the design and verification process of the 2023 BWSC car's chassis.

As a member of the mechanical team, most of my responsibilities lie in making sure the car is running correctly and safely, fixing any issues that may arise during its operation. I also played a role during the roadshow as the main communication link between one of the drivers and the rest of the convoy.

Throughout the development of the chassis, I am researching different materials and their properties to determine which will be best to use for the build, ensuring that we maximise efficiency in terms of weight and usability while maintaining safety.



## Staff Awards

It is with immense pleasure to share with you the remarkable success of Professor Vivian Tam who has recently been awarded an ARC Future Fellowship Grant 2023-2026 with funding support over \$1m.

Her Future Fellowship research project is focused on high-grade chemical-treated heterogeneous recycled concrete which aims to solve Australia's mixed construction

and demolition waste disposal problem and lower its greenhouse-gas emissions at the same time.



## Student Success



Kuer Duot is in her final year of Civil Engineering (Honours) and currently working as interns at Trazibat Pty Ltd.

She has recently been awarded a place on the Dean's merit list (2021) after winning the Australian Steel Institute Undergraduate Steel Design award (ASI). Apart from her academic achievements, Kuer is a member of Women of Wisdom, a group of women in STEM who inspire and create opportunities for fellow STEM students. She is also a former student ambassador for Engineers Australia.

In her free time, Kuer volunteers in programs and interactive workshops that promote STEM education among high schoolers.



Maryann Aziz is in her final year of study for the Master of Architecture (Urban Transformation). At the end of her first year of studying for her bachelor's, she was involved in an Architectural Bid for the Western Sydney Airport with Zaha Hadid Architects and Cox Architecture.

Maryann was recently awarded the Dean's Medal for academic excellence and the School of Engineering, Design, and Built Environment Award for Architecture. Previously, she was involved with the university in an architecture mentoring program. Over the 2021 summer break, she completed an internship with the international design firm Arup. Maryann has this semester begun an internship with the architectural firm Genton.



Malak Abdulhad studied a Bachelor of Construction Management where he achieved First Class Honours.

Honours was not something that he thought of doing at first when he entered university, however, as the option was opened to him, he decided to take it on.

Currently he is working with a fit out company as a project coordinator where he is handling contracts and liaising with subcontractors.

He was awarded the School of Engineering, Design and Built Environment Award for Construction Management and the Chartered Institute of Building Certificate of Excellence Award.



Western Sydney University has won the 'Industry award' at the Fleetwood Challenge 2022. This award is presented to the team who demonstrates best use of offsite manufacturing and cross-disciplinary integration of architectural, engineering and construction-related disciplines.

Our submission was designed keeping in mind a commonality strategy 'kit of parts' and 'net-zero'. This is yet another outcome from implementing BIMed 4.0, our transformational pedagogy for BIM related curricula in Australian Universities to support transition to Construction 4.0 conceptualised by Amer Hijazi, Prof. Mary Hardie and Priyadarshini Das of the Centre for Smart Modern Construction. The students involved in this project are Maged Khalil (captain), Izabella Gadzuric, Jamie Griffin, Frans Murad, Matthew Manarang.

## Alumni Achievements

Navodana Rodrigo is currently a Lecturer attached to the School of Architecture and Built Environment, University of Adelaide. After obtaining her BSc (Hons) in Quantity Surveying from University of Moratuwa, she recently completed her PhD from Western Sydney University as the 1st PhD completion at the Centre for Smart Modern Construction. She is very grateful to her PhD supervisors, Prof Srinath Perera, A/Prof Sepani Senaratne and A/Prof Xiaohua Jin, and the industry collaborators of the Centre for the amazing journey she had with 12 publications and 5 research awards. Due to her achievements, she was recruited by University of Adelaide even before completing her PhD. She highlights that her passion has been towards learning something new every day and contributing to the construction management discipline.



Christophe Camille completed his Bachelor of Engineering (Civil) with First Class

Honours at Western Sydney University, in 2018, where he was awarded the University Medal in recognition of academic excellence. Shortly after, he was also awarded the 'Industrial Transformation Postgraduate Research Award' from Western Sydney University to pursue his doctoral studies under the supervision of A/Prof Olivia Mirza, Dr Brendan Kirkland, A/Prof Sepani Senaratne and Mr Todd Clarke. Four years later, Christophe graduated with a PhD in structural engineering, investigating the feasibility of macro synthetic fibre reinforced concrete as a sustainable alternative to conventional prestressed concrete for railway sleeper applications.

Christophe's professional expertise currently involves collaborating with industry partners such as BarChip, Austrak, Transport NSW, ARC ITTC, Wagners, and so much more to apply his knowledge in researching and developing sustainable materials for advanced structural applications in the construction industry.



## School Engagement News



### Sydney Opera House BUILD

BUILD's tertiary program supports students to explore their role as future socially engaged global leaders, in the context of a real-life design challenge. Using Sydney Opera House as a learning canvas, students work in interdisciplinary teams to explore the architecture, engineering and design of the building. Students consider the human-centred, social and historical forces that contributed to the Opera House's story while incorporating their own values, ethics and professional aspirations. Students also deepen their knowledge of First Nations perspectives and inclusive access to a built environment site. Responding to a future-facing design challenge, students will complete the program with a deeper understanding of what a socially engaged and interdisciplinary built environment practice may look like. The collaboration between Western Sydney University and BUILD will give opportunity for sixty students participate in a 10-day creative intensive from 21 November to 2 December 2022.



## WSU-UNSW Collaborative Program

On Tuesday 30th August 2022, our Dean hosted Professor Stephen Foster (Dean) and Prof. Maurice Pagnucco (Deputy Dean – Education) from UNSW Engineering at our Advanced Manufacturing Precinct (Kingswood) and the Parramatta Engineering Innovation Hub (PEIH) as part of ongoing collaborative activities with UNSW which include co-location in PEIH, and the WSU-UNSW Collaborative Program. Both Professors Foster and Pagnucco were very impressed by the school's manufacturing and makerspace facilities and looked forward to pursuing more opportunities to collaborate in future.

## 6<sup>th</sup> GCSTMR World Congress 2022

Four engineering conferences covering water, structure, geo-technical and materials engineering will be held at Western Sydney University during 27 to 30 Nov 2022.

3<sup>rd</sup> International Conference on Water and Environmental Engineering (iCWEE 2022), 27-30 Nov 2022, Sydney, Australia

3<sup>rd</sup> International Conference on on Structural Engineering and Research (iCSER 2022), 27-30 Nov 2022, Sydney, Australia. <http://www.icser.net.au>

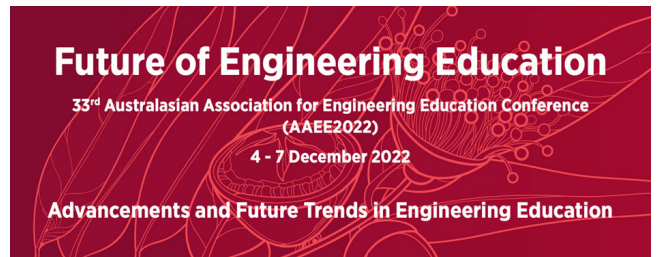
2<sup>nd</sup> International Conference on Geomechanics and Geoenvironmental Engineering (iCGMGE 2022), 27-30 Nov 2022, Sydney, Australia

2<sup>nd</sup> International Conference on Mineral Engineering and Material Science (iCMEMS 2022), 27-30 Nov 2022, Sydney, Australia

Details can be found at: <http://gcstmr.org.au>

You can submit your full paper by 7 October 2022.

## AAEE Conference 2022



The School of Engineering, Design and Built Environment will be hosting the 33rd Australasian Association of Engineering Education Conference (<https://www.aaee2022.org>) during 4-7 December 2022 at WSU's flagship building at Parramatta CBD.

Titled, Future of Engineering Education, the conference will bring together academics and industry practitioners from across the globe to discuss the recent advancements and future trends in Engineering Education.

Prominent engineering education authorities from Australia, United Kingdom and the United States of America will be presenting keynote speeches in the conference.

## Stem Education

## Project Management



## Parramatta West 2022

## Masterclass



School of Engineering, Design and Built Environment is promoting STEM Education at an early age.

Currently 20 primary school kids from year 3-6 at Parramatta West Public School are part of our STEM education program where we encourage them to choose engineering for tertiary education.

A/Prof. Olivia Mirza and Dr. Christophe Camille ran a water filtration workshop. The students had a great time exploring water safety and enjoyed making their own water filter.



Our annual WSU Project Management Masterclass has returned to 1PSQ in hybrid mode after being held fully online in the past two years. The Masterclass is organized by the Project Management Postgraduate programs to encourage discussion and advancement in project management. Our great honour to have industry leaders from the Australian Institute of Project Management (AIPM) and the International Centre of Complex Project Management (ICCPM) joining us. Our high performing PM students were presented with AIPM membership certificates by the CEO of AIPM. And our students, current and past, local and international, loved the opportunity to network with industry professionals.

## Advanced Manufacturing Program

The Advanced Engineering Program proudly hosted Mr Jay Manley from Tesla at PEIH last Wednesday on the 21st September 2022 for a joint engineering seminar to SoEDBE and UNSW Engineering. Jay is a former Robotics and Mechatronics student who joined Tesla in 2015 and is now the Critical Programs Manager and has been involved in the development of many of Tesla's battery solutions including Powerwall, Megawall and the Model 3 electric vehicle. While talking about Tesla's vision for a sustainable future and the many ways in which Tesla is working towards that goal, Jay discussed his career path and the key elements of his undergraduate experience that contributed towards him becoming a Tesla employee. Jay spoke about the importance of acquiring outstanding problem-solving skills, and in his case these came from his involvement in the WSU solar car project.



## People Who Inspire

Welcome to Western Sydney University. Please, tell us about yourself and your research background.

My name is Wei Zhou being appointed as Lecturer in Construction Management and Technology. I obtained my PhD from the University of Wolverhampton, U.K. in 2010 with research direction of Information Communication Technology (ICT) in the built environment. With multidisciplinary and international career in computing, civil engineering, usability engineering and building information modelling (BIM) in Europe and Asia, I build my expertise and wider scope in the interdisciplinary area of BIM over a decade both academically and professionally. My research strength and interests lie in digital transformation and smart city development generally and BIM applications for the building/construction particularly.



### **How was your transition to Australia and Western Sydney University while facing the COVID-19 restrictions?**

My transition to Australia is incredibly lengthy because of the negative influence from COVID-19 globally with border closure restrictions. I received the offer before the pandemic in 2019 and had to wait for visa approval till the border reopen at the beginning of this year. In the meantime, all offshore visa applications were halted without possibility to be processed. I realised this unprecedented disruption affects all the human beings on earth to some extends. What I could do during the transition is to either give up or keep calm and carry on. I decided to stick to the latter because of my firm trust to the university, the school and HR supports, especially the relocation assistance provided by Ms. Gillian Relph. Without her professionalism, I would not believe I can land in Sydney eventually.

### **Previously, you were in the UK. How did living overseas impact your career and field of research?**

My UK living and working experiences are precious for my career development as I gained advanced knowledge and met smart scholars in my field of BIM. This enabled me to gain insight into the BIM field at its early development stage and positively influence on my research and industry projects' delivery. I really appreciate my UK experiences to equip me with powerful knowledge that benefits me long lasting career development in oversea countries.

### **What recommendations would you make to students who want to follow your steps?**

I encourage students to explore this world with their curiosities to find out truth behind phenomena. I firmly believe that knowledge can lighten your soul in this world and wider scopes can support you to realise your values even if you were trapped in pandemics like COVID-19. All in all, chase your dream in both knowledge study and career development and make friends.

## Staff News

### Regenerating Lithgow

The Regenerating Lithgow Project is funded by a grant from the National Recovery and Resilience Agency as part of the Black Summer Bushfire Recovery Grants Program. It is based at the University's Maldan Ngurr Ngurra Transformation Hub in Lithgow. It is a multi-disciplinary project incorporating academics for from many Schools with the mission to support the Lithgow community to come together and support each other in the healing process. On 20th July 2022, first Breakfast session for Builders and Tradies at the Tin Shed in Lithgow. Associate Professor Mary Hardie is involved in through an outreach project to help "Build Back Better".



### Masterclass

Second Master class was delivered to the 50 undergraduate students of Hindustan Institute of Technology and Science (HITS), India. Dr. Ali Hellany presented on Project based learning using the case of Solar Car Project and I presented on Sustainable Waste Management - Application of Circular Economy Principles. We are now in the process of signing 2+2 articulation agreement with HITS for providing a pathway



for their undergraduate students who wish to complete their Bachelor of Engineering degree at WSU.



## Research Planning Day

Our School has organised a successful Research Planning Day on 15 September 2022 to discuss future research directions, improvement on research support and HDR training and research collaborations within the School, University and beyond. The day was highlighted with the announcement of School research prize winners in different categories: A/Professor Khoa Le, Professor Zhong Tao, Dr Md Abdul Alim, Dr Maria Rashidi, Professor Sarah Zhang, A/Professor Yingbin Feng, A/Professor Kejun Dong, Dr Anthony Butera and Dr Laura Almeida. Congratulations to all the Research Prize winners! Three staff who have reached the milestone of 25-Year Service to WSU, Professor Gu Fang, Dr Sasha Alexander and A/Professor Swapan Saha, were also acknowledged and thanked at the Research Planning Day.

**Thank you & please subscribe**

