COLLEGE OF ENGINEERING, SCIENCE AND ENVIRONMENT

ACHIEVEMENTS REPORT

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

FEBRUARY 2024

ENGAGEMENT AND EXCELLENCE THRIVING IN PHYSICS

2023 COMMUNITY OUTREACH TO PHYSICS AWARD GOES TO DR RENEE GOREHAM

With expertise in nanotechnology for biomedical applications, Dr. Goreham has a demonstrated passion and skill for communicating the wonders of physics to people of all ages and has built new programs to do so.

Dr Goreham has made significant contributions in three areas of physics outreach: increasing the media representation of women in Physics, building grassroots programs to excite rural school students about Physics, and coordinating a myriad of programs to engage school students with the university.

Dr Renee Goreham's contributions and passion for physics makes her a very worthy recipient of the 2023 NSW Community Outreach to Physics Award from the New South Wales Branch of the Australian Institute of Physics.

JACOB JOHNSTON WINNER OF THE AUSTRALIAN INSTITUTE OF PHYSICS POSTGRADUATE PRESENTATION FOR 2023

Jacob Johnston was selected as the winner of the Australian Institute of Physics Postgraduate Presentation for 2023, and received the 2023 AIP Crystal Postgraduate figurine, as well as a $500 award from the Australian Institute of Physics.

The presenters at the Postgraduate Awards event were asked to make a 20-minute presentation on their postgraduate research in Physics, and the presentation was judged on the criteria (1) content and scientific quality, (2) clarity and (3) presentation skills.

THERE'S NO PLACE LIKE HOME: DR KAREN LIVESEY WRAPS UP NATIONAL TOUR IN NEWCASTLE

The 2023 national Australian Institute of Physics Women in Physics tour saw Karen conduct 11 public talks, 16 school visits, 7 technical seminars and 8 radio interviews – connecting with more than 1600 attendees across the country.

At the packed Newcastle talk, Karen was presented with the Women in Physics medal from the AIP by Past President and University Emeritus Professor John O'Connor and was cheered on by the tight-knit team of #NewyPhysics.

LIVING OUR VALUES

EXCELLENCE

Australia's leading expert on rockfall mechanics and protection design, Professor Anna Giacomini, is among the distinguished cohort of Fellows elected to the Australian Academy of Technological Sciences and Engineering (ATSE) in 2023. ATSE President Dr Katherine Woodthorpe AO FTSE said the new Fellows are creating a better Australia through their work. Read more

EQUITY

In 2023, the Science and Engineering Challenge engaged with 23,909 students. The Science and Engineering Challenge is proud to reach such a diverse range of students in far reaching locations and backgrounds: over 10% of the schools were from a rural or remote area, over 47% of attendees were female, and 4.7% of 2023 attendees were First Nations students.

ENGAGEMENT

Albury-Wodonga students take part in SMART science fun thanks to investment from the Inland Rail Skills Academy. Read more.

The team also brought science to primary schools across the Upper Hunter region of New South Wales thanks to the Yancoal Mount Thorley Warkworth mine. Read more.

SUSTAINABILITY

Emma Austin and her PhD supervisor Associate Professor Anthony Kiem are funnelling information into a tangible tool to help farmers get ready for drought – psychologically and financially. They have teamed up with researchers from Southern Queensland University to create an Employability and Wellbeing Toolkit to support people in drought-prone areas. Read more.

EQUITY

EMPOWERING GIRLS IN STEM

The 2023 HunterWiSE Schools Outreach Program concluded with a presentation night at The University of Newcastle's Great Hall, where the year's students showcased their innovative solutions to community problems.

HunterWiSE Outreach is a targeted, 10-week intervention designed to improve the perception of science, technology, engineering and mathematics (STEM) among female students in Year 8. With the support of University of Newcastle student mentors, students work in small groups to first identify an issue of concern for their community, and then devise a STEM-based solution. The students also receive valuable input and hands-on experience thanks to the support of industry partners, who facilitate visits to a range of sites across the region.

In 2023, HunterWiSE reached some 190 students from 11 high schools – the largest cohort to date. All 42 student group projects, which investigated diverse and relevant community issues, were pitched to industry judges over one fast-paced, dynamic hour. The students presented their ideas using research posters, prototypes, and well-rehearsed elevator pitches to vie for a series of prizes.

Some of the 2023 student projects included:

- designing prosthetic bird beaks to assist rescued chickens to feed
- designing a machine to break down single-use menstrual pads to recycle materials
- addressing bushfire risk by testing the fire-retardant properties of residential insulation
- designing interventions and digital solutions to reduce uptake of vaping among teenagers.

Presentation Night concluded with three awards – and for the first time, tied results.

The **Outstanding Poster Award** went to students from Hunter School of the Performing Arts for their project which redesigned supermarket self-checkouts to be more accessible for wheelchair users.

The **People's Choice Award** was tied between students from Lambton High School and Merewether High School students. The Lambton students proposed using superhydrophobic cement to prevent pothole formation, while the Merewether students investigating using seaweed to combat rising sea acidity levels in Lake Macquarie.

This team also tied for the Outstanding Project award. Sharing the stage for the **Outstanding Project Award** were students from Belmont High School. Their rewards-based app encourages shoppers to use reusable shopping bags over purchasing paper bags.

By taking a project-based learning approach and encouraging students to apply scientific inquiry to issues that concern them, HunterWiSE Outreach aims to present STEM education as accessible, rewarding, and the gateway to relevant and fulfilling careers. The proposed STEM solutions display ingenuity and underscore the transformative potential of STEM in everyday life.

The potential demonstrated by these young female students reaffirms the importance of investing in STEM education and empowering girls in these fields. In celebrating their efforts and achievements, we acknowledge the invaluable support from mentors, teachers, caregivers, and industry partners who have contributed to the success of the program. The future of STEM is in good hands.

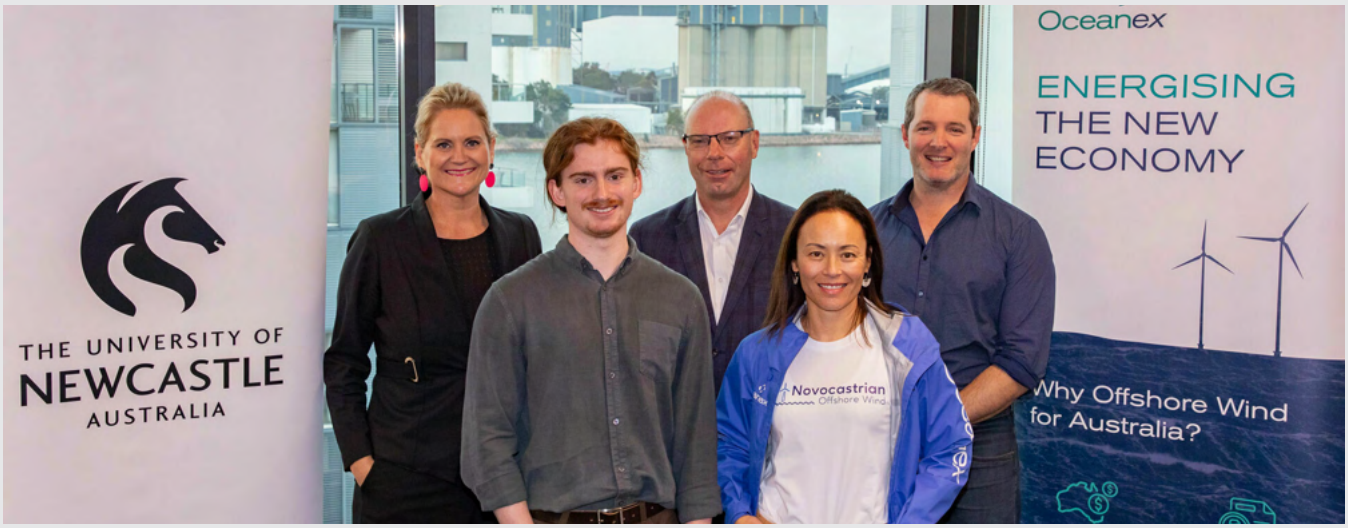
EXCELLENCE

SCHOLARSHIP WIN FOR RISING RENEWABLE ENERGY TALENT, ENGINEERING STUDENT OLIVER PHELAN

University of Newcastle engineering student Oliver Phelan has been awarded the 2023 Oceanex Energy Scholarship. He is conducting research into offshore wind turbines while working with WSP's experts in Australia's emerging offshore wind sector.

"The expectation is that I will be able to make a recommendation as to whether the turbines will be able to safely withstand the mechanical loadings expected in extreme weather events in Australia, and more specifically Newcastle," says Oliver.

"Whilst offshore wind farming is a mature technology in other parts of the world, currently no offshore wind infrastructure exists in Australia. This is an important contribution as it aims to quantify and reduce the risk of offshore turbine installations in Australia." Read the full article on the WSP website.



STUDENTS' AMAZING ARRAY OF CREATIVE FOOD

Graduating Food Science and Human Nutrition students displayed a remarkable array of innovative food creations an expo held at Ourimbah campus last semester.

The expo, sponsored by Sanitarium, was the culmination of a project that saw students create, produce and market six different food offerings under the banner of Food for Health and Wellbeing in just 10 weeks. Read more.

ALUMNI

OLIVIA LEVELS UP HER GAMING SKILLS TO FORGE A CAREER

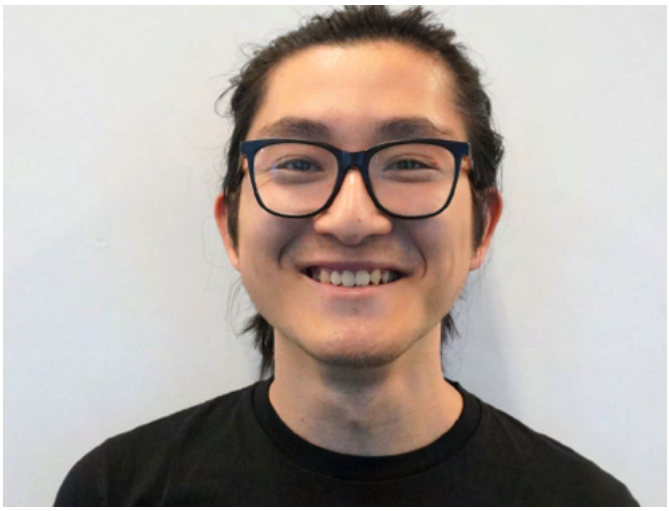
It's no surprise that Olivia Campbell – an avid computer gamer – has always had a knack for IT. After googling the University of Newcastle's degree offerings, she decided to take her skills to the next level and enrol in a Bachelor of Information Technology.

Through the University's Jobs on Campus program, which connects students with paid work opportunities on campus, Olivia said she worked part-time with the University's IT Support Centre while studying.

"I've accepted a job as a Systems Analyst at Lockheed Martin where I will help maintain and optimise various software programs to meet business needs."

Read more about Olivia

BUILD WITHOUT CODE, SCALE WITH CODE



Kelvin Htat, University of Newcastle Alumni, is the founder of Licode, a no-code platform that enables people to visually build scalable software applications.

With a love of coding, Kelvin pursued his career in software engineering. As he entered the world of entrepreneurship, he realized that many startup founders are not technical. Without expensive software development services or a technical founding member, building and testing ideas can be quite challenging for them.

At I2N's Startup Stories at I2N Hub Honeysuckle on Wednesday 1st of November, Kelvin shared how he has been able to successfully raise his pre-seed round of funding as a solo founder and all the challenges that have come along with that.

Read more about Kelvin

2023 EMPLOYABILITY EXCELLENCE AWARDS

Congratulations to the following College of Engineering, Science and Environment students, staff, and industry partners, who achieved great success in the 2023 Employability Excellence Awards. Read about all winners and highly commended recipients here.

STUDENT AWARDS

Student Employability Achievement Award

Winner - Imogen Reid | Bachelor of Environmental Engineering (Honours) / Bachelor of Science

Student Employee of the Year

Winner - Hugh Marler | Bachelor of Aerospace Systems Engineering (Honours)

Student Entrepreneur of the Year

Winner - Viv Jayachandran | Bachelor of Software Engineering (Honours)

Work Integrated Learning Student of the Year

Winner - Cameron Lord | Bachelor of Renewable Energy Engineering (Honours)

INDUSTRY AWARDS

New Partner in Employability

Winner - NeuroKind | NeuroKind have demonstrated sustained interest in providing professional learning experiences for University of Newcastle psychology students

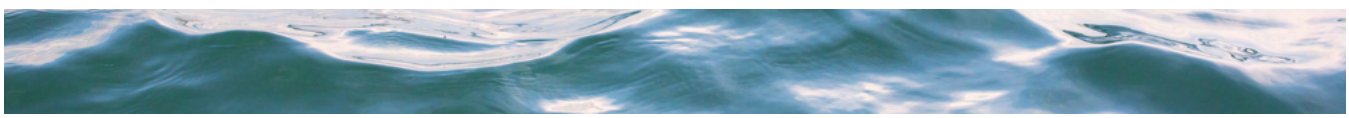
STAFF AWARDS

Work Integrated Learning Staff Member of the Year

Winner - Professor Karen Blackmore | As Assistant Dean of Work Integrated Learning (WIL) Karen has demonstrated exceptional achievements during her tenure

Highly Commended

- Dr Babette Rae
- Dr Kim Maund and Dr Jessica Siva (joint nomination)



UNIVERSITY STAFF EXCELLENCE AWARDS

Congratulations to the following College of Engineering, Science and Environment staff who received Staff Excellence Awards in 2023. Read more about the winners and finalists via the Awards website.

HEALTH, SAFETY AND WELLBEING: TEAM AWARD WINNER

Competency Access Isolator – NU Teams

- Dr Alexander Gregg - School of Engineering
- Amanda Hill - Office PVC - Engineering, Science and Environment
- Andrea Thomas - Office PVC - Engineering, Science and Environment
- Josh Bywater - School of Engineering
- Lachlan Barrell - Office PVC - Engineering, Science and Environment

A collaboration between the College of Engineering, Science and Environment and professional engineering student teams organisation, NU Teams saw our University take home the Most Innovative WHS Idea (Large Organisation) prize from the Hunter Safety Awards and the WHS Technology Initiative at the Australian WHS Awards.

The Competency Access Isolators System requires students to scan their ID cards to determine if they hold the appropriate training and competency to access workshop and lab equipment.

SESSIONAL ACADEMIC TEACHING AWARD WINNER

Ebon Baxter Menzies

Ebon genuinely cares about teaching students. He is patient, approachable, passionate, and able to explain the technical aspects of the course in a way that students easily understand.

His philosophy on teaching is grounded in leading students through the content so they themselves come to understand the concepts involved. This approach as resulted in excellent feedback and teaching scores across nine offerings of STAT1070, reaching approximately 575 students in that time.

2023 EMPLOYABILITY EXCELLENCE AWARDS

RESEARCH SUPERVISION AWARD WINNER

Associate Professor Geoff MacFarlane

Geoff has outstanding teaching and supervision records (Current 7 HDR students and 11 completed). His principal research interest falls into aquatic and marine toxicology.

He has secured more than $4 million in research grants and published over 80 Journal articles and book chapters. He believes in student-centred teaching and the use of methodologies that encourage deep learning.

INSPIRING EXCELLENCE ACADEMIC AWARD WINNER

Associate Professor Thayaparan Gajendran

Thayaparan is deeply committed and dedicated to mentoring early career and established academics and professional staff, well beyond standard expectations. He always makes himself available to those seeking advice, sharing his expertise/knowledge and empowering colleagues to develop their confidence.

His approachable demeanour and willingness to engage in meaningful discussions create an environment conducive to academic growth and collaboration. His mentorship encompasses career development, personal growth, and cultivating a supportive network and collaborative culture.

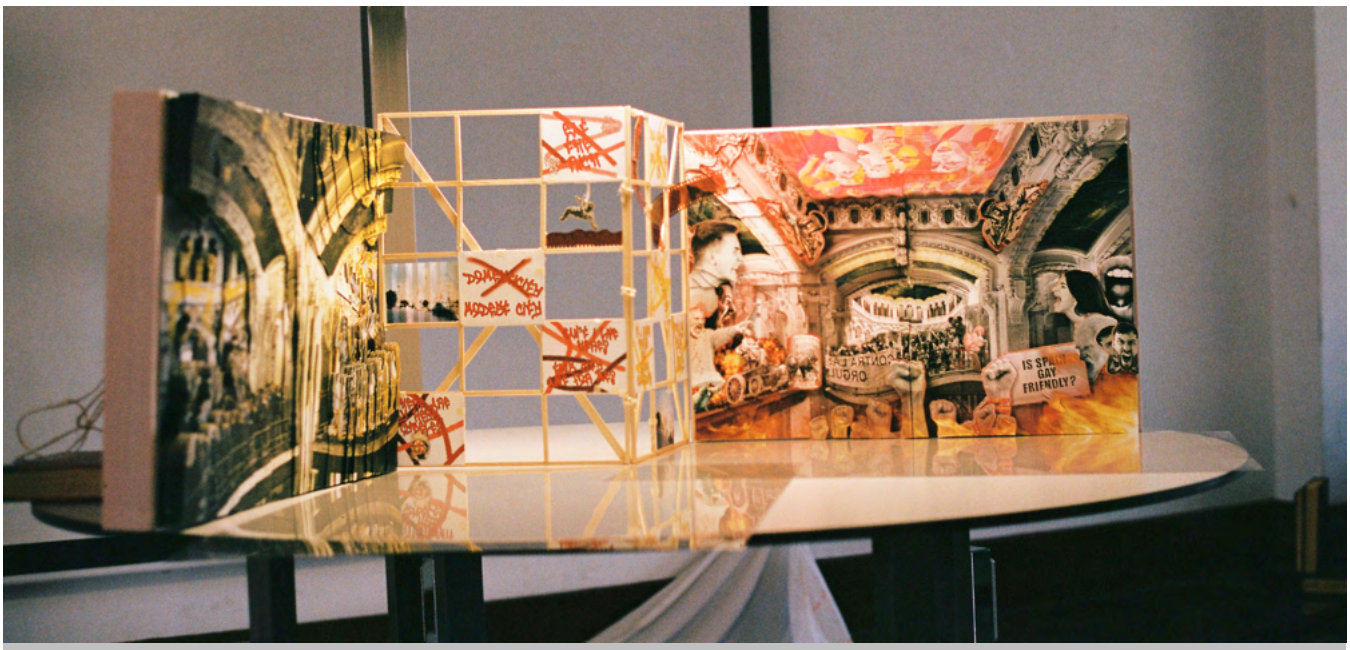
VALUES AWARD WINNER

Taona Afful

Taona is a passionate advocate for diversity and inclusion, actively seeking out staff and students from culturally and linguistically diverse backgrounds to connect them to the necessary support. She goes the extra mile by assisting staff in interview and promotion preparation, making a significant difference in their career development.

The University benefits significantly from Taona's behaviour and attitudes, as she creates a more inclusive and diverse environment while fostering excellence in both her team and the broader University community.

LIFE-READY GRADUATES



A LETTER OF THANKS FROM ARCHITECTURE STUDENTS WHO COMPLETED A COURSE IN SPAIN

To whom it may concern,

I am writing this on behalf of the Architecture students who completed the 2023 “Lost in Translation: Upside Down Architectures” elective, to express our deepest appreciations and thanks for the exceptional opportunity and learning experience we had, and to share our thoughts on the course and its impact on our development as aspiring architects.

The elective was an amazing opportunity that granted us the chance to enhance our skills and gain a deeper understanding of architecture’s significance and impact on the operation of cultures at global scale.

The opportunity to work in small teams with self-imposed responsibilities and goals mirrored many of the real-world scenarios that we had already encountered in our careers outside of university. Thanks to Maria and Pedro and the remarkable dedication and effort they demonstrated in running this course our team-working abilities and critical thinking skills were significantly strengthened. We would also like to express our appreciation for the pair’s teaching style, which treated us as mature adults, fostering an environment of trust and critical collaboration among peers.

We now boast architectural contacts on a global scale and better understanding of uniquely Spanish experiences that contribute to architectural discourse, thanks to the hard work of Maria and the SABE Faculty at the University of Newcastle.

Thank you for making the Lost In Translation elective an incredible journey of learning and growth. We wholeheartedly endorse the continuation of this outstanding course and eagerly anticipate the outcomes students produce from its operation in the future.

-Travis, Master of Architecture

Read the full story here

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