

[www.rmit.edu.au/aquest](http://www.rmit.edu.au/aquest)

Linked IN: <https://www.linkedin.com/company/96921450>

*With the winding up of some projects, there's been a bevy of report and paper writing. We've been presenting at conferences and workshops- SUSE6, AFSS, SETAC, ICFA, and at local events including community days at Westernport, Stony Creek, the Merri Creek Platypus Paddle, Goulburn River and running joint seminars with Brazil and hosting the UN rapporteur for discussions on toxics. All while supporting our 12 PhD candidates and 5 Year 10 work experience students plus working on projects.*

### A3P Partnership Renewal and Celebration!



*L-R: Claudette Kellar, Vin Pettigrove, Melita Stevens, Rhys Coleman, Judy Blackbeard, Kath Hassell, Behzad Pournouri, Tanya Paige, Monica Tewman, Dan MacMahon, Sara Long, Pulasthi Serasinghe, Adele Romagnano, Bec Reid, Gina Mondschien and Jackie Myers*

Excitingly, 2023 has seen the renewal of our 5-year research partnership with Melbourne Water! Working in a close, collaborative way means that research outcomes are directly relevant and applicable for the business and of great value in improving waterway health. Some projects have finalised (Wetlands, Urban sediment and litter); continued or morphed (Chemicals of Concern, Industrial, Chemical use, Wastewater, Ecologically sensitive sites and a Decision Support Framework) with some fresh topics (Climate Change, Waterway function & Estuaries and Bays). We had a small celebration to mark the occasion - Thank you to those in attendance, in person and in spirit; a good opportunity to catch up with colleagues.

### Joint TWRA-RMIT Webinar Series 2023



In partnership with the Tropical Water Research Alliance (TWRA) and the Water: Effective Technology (WETT) research group at RMIT, we have run a Seminar Series with the purpose of increasing our combined research impact by facilitating opportunities to collaborate and share knowledge internationally.

Go to: [TWRA RMIT Webinar Series - YouTube](#) to view our seminars on Microplastics and Biodiversity Assessment, with more to come.

### UN rapporteur of toxics and human rights visit in September 2023

Prof. Vin Pettigrove was approached by the UN Expert and Special Rapporteur on toxics and human rights to organise and chair a meeting with academics and concerned citizens, hosted at RMIT University for the Melbourne leg, of their official country visit to Australia. The purpose of the UN rapporteur's visit was to discuss broadly the toxics issues facing Australia, particularly regarding vulnerable communities. This included agrochemicals, waste (including plastics & hazardous waste) and PFAS pollution. Learn more: [press release 8 september 2023 .pdf \(un.org\)](#) and the end of the mission statement with the summary of issues the Special Rapporteur identified in Australia [eom - 08 sep 2023 - final .pdf \(un.org\)](#)



*L -R: David Low (pesticide advocate with indigenous people), Dr Sara Long (RMIT AQUEST), Jane Bremmer (Alliance for a Clean Environment- PFAS West Gate Bridge), Hilida Nasic (UN), Matt Landos (Director Future Fisheries and Veterinary Services) (on screen), Prof Vin Pettigrove, Dr Marcos Orellana (UN expert on international law, human rights and the environment), Jeff Simpson (Owner Haztech Environmental), Kim Dowling (RMIT)*

**The Aquatic Environmental Stress Research Group identifies and addresses the ecological impacts of pollution in aquatic environments.**

[www.rmit.edu.au/aquest](http://www.rmit.edu.au/aquest)

Linked IN: <https://www.linkedin.com/company/96921450>

and Dr Brad Clark (Melb. Uni). On line: Michael Waurne (Director of Reef Catchment Science Partnership Uni of Q), Roger Chong (Veterinary & Aquatic Pathologist CSIRO)

## Plenary Address @ ICFA International Conference on Food Analysis

On 21 November 2023, Professor Vin Pettigrove and two of our PhD candidates Tanya Paige & Pulasthi Serasinghe were the Plenary Speakers at the 4th International Conference on Food Analysis [icfa.com.au/icfa2023](http://icfa.com.au/icfa2023) in the Emerging Residues in the Food Chain session. This highlights the connection between the pesticide work we do in the environment and other applications. Tanya had a fabulous day with news that her paper on PFAS background levels has been accepted for publication!



Tanya Paige at ICFA 2023

### In the news

On Saturday 11 November 2023, you could read about the health of the Yarra River in The Age and The Sydney Morning Herald, including an interview with the head of AQUEST at RMIT University Professor Vincent Pettigrove. Learn more: <https://au.qudach.com/ben-catches-fish-in-the-yarra-under-the-city-s-bridges-is-it-safe-to-eat-2075721.html>

Science

Ben catches fish in the Yarra, under the city's bridges. Is it safe to eat?

You can pull snapper, flathead, bream, even mulloway out of the Yarra under the city's bridges - if you avoid snagging on an O-bike. But are they safe to eat?

November 11, 2023 | Liam Mannix



## PhD Student project Updates

With a few of our PhD candidates coming closer to completion, publications are on the rise! Madara has a review of synthetic pyrethroids out, and

Tanya has a paper on PFAS background concentrations accepted, so watch this space!

With others progressing through their 2<sup>nd</sup> year, we've also had 3 new starters who we'd like to introduce:

- Anuradha Athawuda who's focusing on Sources and fate of microplastics in Westernport Catchments
  - Adele Romagnano investigating the effect of emerging contaminants on platypus, and
  - Behzad Pournouri looking at the impacts of climate change and pollution on freshwater macroinvertebrates.
- We wish them all well for their projects.

Page | 2

## From the lab



With still wet wings from emerging this Dragonfly was a welcome guest in the macroinvertebrate lab, and then seemed happy to stick around 😊

## Recent Publications

Here is a list of recent publications authored by members of AQUEST:

- Paige, T., De Silva, T., Buddhadasa, S., Prasad, S., Nuggeoda, D. and V. Pettigrove. Background concentrations and spatial distribution of PFAS in surface waters and sediments of the greater Melbourne area, Australia, Chemosphere 349 (2024), <http://doi.org/10.1016/j.chemosphere.2023.140791>
- Foord, C.S., Szabo, D., Robb, K., Clarke, B.O. and D. Nuggeoda. Hepatic concentrations of per- and polyfluoroalkyl substances (PFAS) in dolphins from south-east Australia: Highest reported globally, Science of The Total Environment Volume 908, (2024), <https://doi.org/10.1016/j.scitotenv.2023.168438> see: <https://www.marinemammal.org.au/news/pfas-burrunan-dolphins>

[www.rmit.edu.au/aquest](http://www.rmit.edu.au/aquest)

Linked IN: <https://www.linkedin.com/company/96921450>

- Cervantes-Servin, A.I., Arora, M., Peterson, T.J. and V. Pettigrove. Seasonal estimation of groundwater vulnerability. *Sci Rep* 13, 9720 (2023). <https://doi.org/10.1038/s41598-023-36194-1>
- Nzabanita D., Hampton, J.O., Toop, S.D., Bengsen, A.J., Specht, A.J., Flesch, J.S. Hufschmid, J and D. Nugegoda, Expanding the use of portable XRF to monitor lead exposure in an Australian duck species two decades after a ban on lead shot, *Science of The Total Environment*, Volume 869, (2023), <https://doi.org/10.1016/j.scitotenv.2023.161803>.
- Pettigrove, V., Hassell, K., Kellar, C., Long, S., MacMahon, D., Myers, J. Nguyen, H. and M. Walpitagama. Catchment sourcing urban pesticide pollution using constructed wetlands in Melbourne, Australia, *Science of the Total Environment* (2023), <https://doi.org/10.1016/j.scitotenv.2022.160556>.
- Ranatunga, M., Kellar, C. and V. Pettigrove (2023) Toxicological impacts of synthetic pyrethroids on non-target aquatic organisms: A review. *Environmental Advances* (2023), <http://doi.org/10.1016/j.envadv.2023.100388>.
- Sinclair, G.M., Di Giannantonio, M., Jones, O.A.H. and S.M. Long, Is substrate choice an overlooked variable in ecotoxicology experiments? *Environ Monit Assess* 195, 344 (2023). <https://doi.org/10.1007/s10661-023-10935-1>
- Shen, H., Nzabanita, D., Sinclair, G.M., Vu, H., Grist, S., Nugegoda, D and S.M. Long, Changes in metabolic profiles of amphipods *Allorchestes compressa* after acute exposures to copper, pyrene, and their mixtures, *Environmental Toxicology and Pharmacology*, 99 (2023), <https://doi.org/10.1016/j.etap.2023.104120>.
- Willems, D.J., Kumar, A. and Nugegoda, D. Mixture Toxicity of Three Unconventional Gas Fracking Chemicals, Barium, O-Cresol, and Sodium Chloride, to the Freshwater Shrimp *Paratya australiensis*. *Environ Toxicol Chem*, 42 481-494 (2023), <https://setac.onlinelibrary.wiley.com/doi/epdf/10.1002/etc.5538>.
- 

See our website for more publications, technical reports and project information: <http://rmit.edu.au/aquest>