NEWSLETTER

Endpoint

SOCIETY OF ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY AUSTRALASIA

(SETAC AU)

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CONTENTS

SETAC AUSTRALASIA

SETAC

Message from the Editor

Welcome to the first edition of Endpoint for 2017. While it is only a few months into the year, SETAC AU members have been busy and you can read about what's been going on in New South Wales, Victoria, Queensland, Western Australia and the Northern Territory in the Regional Reports section. Each edition we feature two SETAC AU members and this edition South Australia Representative Peter Bain is featured in the General Member Profile and Papua New Guinea Representative Kundo Hundang is featured in the Student Profile.

2016 SETAC AU Mid Career Medal recipient Grant Hose has provided a very interesting and entertaining overview of his career to date, it's a great read! You can also read about the research finding of the 2016 SETAC AU Postgraduate Research Publication Award recipient Thi Kim Anh Tran in the Student Corner section. Speaking of awards, the SETAC AU National Travel Fellowship is currently open for applications and you can find out more in the Awards and Prizes section.

The 2017 SETAC AU Conference will be held on the Gold Coast in September and you can find out more information in the What's Happening section. Make sure you get your abstracts submitted by the 1st of May!

In addition to our usual social media update, Julia Howitt, Francesca Gissi and Darren Koppel have compiled a very useful guide to Twitter for SETAC AU Members. Also, some of you may have noticed that the SETAC membership renewal system has recently changed, so Munro Mortimer has provided helpful step-by-step instructions on how to renew your SETAC membership.

Finally, I would like to thank everyone who has contributed content to this edition of Endpoint and happy reading!

Best wishes

Peta Neale (p.neale@griffith.edu.au), Communications Officer

From El Presidente

Firstly, a happy belated New Year to you all. I hope everyone had a wonderful break.

It is already building up to another big year for SETAC AU. Planning is already underway for this year's conference, which will be held at the Gold Coast (3-6th September) http://www.setacgoldcoast2017.com.au/ The conference organisation is being led by Will Bennett and Di Jolley, many thanks to you both! The theme for this year's conference is "The role of environmental toxicology and chemistry in a changing environment". Abstracts for this exciting event close on 1st May 2017.

Just a reminder, from now on we will run the SETAC AU conferences on odd years so we don't interfere with SETAC AP which will run on even years. So please join us this year at the Gold Coast as there will be no SETAC AU meeting next year.

Still on the theme of conferences, we recently made a bid to hold the 2020 World Congress in Brisbane. Unfortunately we missed out; however, I wish to congratulate Singapore on the winning bid. I am sure it will be superb conference and I look forward to seeing a large SETAC AU presence at the event. Many thanks to Tom Cresswell and Munro Mortimer for all their work on preparing and presenting the bid, they did an absolutely stellar job!

As you are aware we have range of awards and prizes being offered throughout the year, with the aim of providing opportunities for all our members. This year we offered two new awards – the Science/Business Award and the Technical Staff Award. While applications for both these awards closed at the end of March, various other awards, e.g. the Post-Graduate Publication Award and the Thesis Prize, will be opening shortly, so keep a look out at the SETAC AU website.

One major issue that keeps occurring is the lack of participation in some of our key initiatives. For example, in the recent call for STA's Science Meets Parliament, we only had two applicants. I am concerned about the lack of uptake and would be keen to hear your views on how we may better get our message out there.

If you are an early- or mid-career researcher I strongly recommend looking into the Australian Academy of Sciences EMCR Forum,

which provides a national voice for Australia's emerging scientists. Last November I had the pleasure of attending their Theo Murphy Australian Frontiers of Science event. The presentations were inspiring and informative. It was great to learn more about the work of other scientists, and it provided a great opportunity to learn more about microbiome research and to identify potential collaborators. Andrew Harford had similar experience at a previous event. For more details please go to www.science.org.au/emcr-forum.

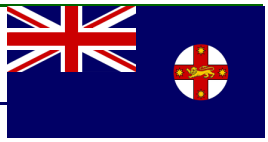
Finally, as a mechanism for increasing the interactions between SETAC AU and our Geographic Unit (SETAC AP), I have recently taken up a position on the SETAC AP Council. I look forward to working with President Dr Kuan-Chun Lee and the Board. I wish to thank Dr Lee for initiating this opportunity, which will undoubtedly lead to a more cohesive society.

Warmest regards

Anthony Chariton, President

Regional Reports

New South Wales



CSIRO Land and Water, Lucas Heights, Aquatic Contaminants Group, Brad Angel (Brad.Angel@csiro.au)

Brad Angel has spent considerable time working on the NESP Torres Strait water quality project which has involved field work in the Torres Strait followed by various laboratory analyses to measure metal contaminants down to the sub-ng/L range in order to identify any 'hot spots' in the Torres Strait and investigate potential sources. Brad has also been investigating factors and mechanisms that affect pulsed effluent toxicity to aquatic organisms, how factors such as kinetics, concentration and matrix components influence copper solubility in seawater, and assessing how various effluent treatment techniques mitigate the risk of toxicity to aquatic organisms. PhD student Brett Knowles has recently travelled to the US to work with Jamie Lead's group at the University of South Carolina. Brett is learning the finer skills of nano core shell synthesis with a focus on manipulating the thickness of the core and shell of silver nanoparticles for the purpose of future toxicity testing.

Macquarie University, Grant Hose (Grant.Hose@mq.edu.au)

There is a new kid on the ecotox block at Macquarie Uni. We are thrilled to have SETAC AU El Presidente Anthony Chariton join the Department of Biological Sciences. Anthony started at Macquarie in January after having established himself as leader in bioassessment and ecotoxicology using environmental DNA in his time at CSIRO. Anthony is in the throes of establishing his Environmental Genomics, Ecology and Ecotoxicology Lab (EGEEL). The new lab is beautifully fitted out, and a number of new projects have commenced. Anthony is fortunate enough to continue working with his CSIRO colleagues, including a collaboration with DSITI, examining the ecological implications of agricultural run-off on coastal Far North Queensland, and a collaboration with JCU and UNSW examining the potential relationships between benthic communities and land use in the Torres Strait. In conjunction with Jenny Stauber, Simon Apte and Stuart Simpson, Anthony contributed to the recently published book Marine Ecotoxicology: Current Knowledge and Future Issues. On a related matter, Simpson and Batley's Sediment Quality Assessment is now available as a free download from here.

Prior to commencing at Macquarie, Anthony spent December in France at the University of Grenoble polishing up his genome skimming skills and working on some interesting data which explores biological interactions across a range of spatial scales. The visit was sponsored by the Australian Academy of Sciences France-Australia Science Innovation Collaboration (FASIC) Fellowship.

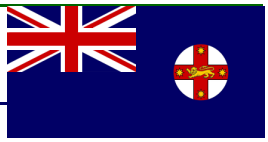
In the Department of Environmental Sciences, Caitlin McKinnon has finished up her MRes project examining the chronic toxicity of tungsten to local freshwater species. Her results indicate *Daphnia carinata* to be one of the more sensitive species tested to date, although unsurprisingly the levels of toxicity are in the low ppm range. Adijat Awoniran has started her PhD project assessing the geochemistry and toxicity of waste runoff in abandoned metalliferous mine sites. She is supervised by Damian Gore and Scott Wilson.

In Biology, Ingrid Errington is on the PhD home stretch and is writing up her field and lab experiments on the effect of fuel contamination on soil fauna on Macquarie Island. Ingrid is supervised by Grant Hose, Cath King and Simon George. Fiona Macdonald is working with Grant and has been doing lab toxicity tests exposing groundwater invertebrates to salinity gradients to mirror her field studies in the Lachlan River catchment in western NSW.

Kathryn Korbel, Grant Hose and Anthony have been researching groundwater microbial and stygofauna communities under agricultural lands, using a combination of traditional and molecular methods. This research focuses on factors (natural and man-induced) influencing the natural distribution of biota within groundwater ecosystems. Recently, Kathryn and co. published the first paper from this collaboration 'Wells provide a distorted view of life in the aquifer: implications for sampling, monitoring and assessment of groundwater ecosystems' in Scientific Reports.

Regional Reports

New South Wales



University of Technology Sydney, Freshwater Applied Ecology Group,
Anne Colville (anne.colville@uts.edu.au)

Simon Mitrovic's group at the University of Technology Sydney is working on a range of projects, looking at environmental flows, coldwater pollution, nutrients and organic carbon, cyanobacterial toxins, and algal blooms.

James Hitchcock and Simon have finished an intensive period of sampling investigating the temporal variation in water quality variation in the Hunter River estuary. The project is part of a broader collaborative project with UNSW and Hunter Water.

Angus Rawle is studying the impacts of differing sources of dissolved organic carbon on bacteria and protozoa communities. He is doing experiments as well as field monitoring on the Macquarie and Williams Rivers in order to investigate the impacts of DOC upon the microbial loop.

Jake Violi has begun his Honours with **Simon, Ken Rodgers** and **Anne Colville**, collecting and isolating cyanobacteria from blooms around NSW, and investigating whether they produce the toxin BMAA (beta-methylamino-L-alanine), a non-protein amino acid which has been tentatively linked with motor neurone disease.

Jordan Facey is doing a Master's degree under **Simon Mitrovic**, **Simon Apte** and **Anne Colville**. He has been conducting microcosm nutrient enrichment experiments on the Hunter River to investigate the effect of increased nitrogen, phosphorus and trace metals on phytoplankton growth and community structure.

Lena Schulz joined us in 2016 to do an internship with Simon. Lena was studying in Germany, and was working on the "Green Liver system", a sustainable water purification system using plants to clear cyanobacteria, microplastics and heavy metals from water, under supervisor **Prof. Dr Stephan Pflugmacher Lima**. Her internship with Simon's group went from September 2016 to March 2017, but she's enjoyed herself so much she is going to stay on and do her bachelor's thesis at UTS with **Simon**, **Anne** and **Stephan** as supervisors. She wants to examine allelopathic effects of native macrophytes on cyanobacteria, and if they could be used as a sustainable water purification system.

Laura Michie is continuing monthly monitoring along the Macquarie River, looking at the impacts of cold water pollution mitigation downstream of Burrendong dam. She is currently collating the results from her summer sampling to assess the role of mitigation structures in management of an algal bloom that occurred within the dam and along the Macquarie.

Matt Balzer is continuing his research on the effects of flood events on the food web within the Namoi River, with results currently showing changes in both zooplankton assemblage and abundance. He is also now studying zooplankton 'seed banks' on floodplains in an attempt to see how large scale floods effect zooplankton populations.

Joe Pera is looking at how mass carp mortality may affect water quality with the potential release of the Heroes virus, supervised by **Simon**, **Alec Davie** and **Ivor Growns**.

Anne Colville is still interested in cyanobacterial toxins, their effects on plants and interactions with other toxins and pollutants. She is also spending a lot of time helping out with Jake, Lena and Jordan's projects.

Lisa Golding (lisa.golding@csiro.au), New South Wales Regional Representative

Regional Reports

Victoria

School of Biological Sciences, Monash University, Minna Saaristo
(minna.saaristo@monash.edu)

The members of the Behavioural Ecology Research Group (headed by A/Prof Bob Wong) at Monash University have had a very productive start to 2017. Members of the Group are interested in investigating the potential of pharmaceutical pollutants to alter animal behaviour and, in doing so, impair survival and reproductive fitness in exposed organisms. Group members have been testing the impacts of environmentally realistic exposures to widespread pharmaceutical pollutants on traits with direct ecological and evolutionary significance, including processes of sexual selection (e.g. mate choice), anti-predator behaviour, sociability, foraging, boldness and activity.

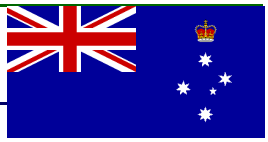
Research Associate Minna Saaristo has been busy writing up the Academy of Finland and Marie Curie Actions funded research on "Behaviour, Pollutants and Genomics: exploring their interactions in a fish model". The first paper from the project came out in January in Aquatic Toxicology (Saaristo, M., Wong, B.B.M., Mincarelli L, Craig A., Johnstone C.P., Allinson M., Lindström K, Craft J.A., 2017. Characterisation of the transcriptome of brain of guppy (*Poecilia reticulata*) with RNASeq: comparison between sexes and treatment with the pharmaceutical 17α-ethinyl estradiol. Aquatic Toxicology, 186, 28-39).

In addition to the EE2-research, Minna has been involved in other ecotox projects in the Wong lab and a paper based on the Honours thesis of Alisha McLennan titled "The effect of an antidepressant on the anti-predator behaviour of guppies" was recently published in Aquatic Toxicology (Saaristo, M., McLennan, A., Johnstone, C.P., Clarke, B.O., Wong, B.B.M. 2017. Impacts of the antidepressant fluoxetine on the anti-predator behaviours of wild guppies (*Poecilia reticulata*). Aquatic Toxicology. 183, 38-45).

In the upcoming SETAC Europe 27th Annual meeting in Brussels, Minna is co-chairing a session on "Behavioural ecotoxicology: Unravelling behavioural responses to aid environmental and regulatory toxicology". She will be also giving a platform presentation on her EE2-project and the talk is titled "Pharmaceutical alters mate choice and gene expression of a fish".

Members of the behavioural and evolutionary research group, Monash, at a recent lab retreat.

PhD student Jake Martin completed an experiment investigating the effects of environmentally relevant concentrations of the antidepressant fluoxetine on sociability and anxiety-like behaviour in eastern mosquitofish. He is already planning his next experiment, which will explore the impact of fluoxetine on social networks and group behaviour. Jake's first publication, which was based on his Honours thesis "The psychoactive pollutant fluoxetine compromises



antipredator behaviour in fish" was published in Environmental Pollution (Martin, J.M., Saaristo, M., Bertram, M.G., Lewis, P.J., Coggan, T.L., Clarke, B.O. & Wong, B.B.M. 2017. The psychoactive pollutant fluoxetine compromises antipredator behaviour in fish. Environmental Pollution. 222, 592–599).

PhD student Michael Bertram has completed a series of experiments testing the impacts of the endocrine-disrupting agricultural pollutant 17β-trenbolone on behaviour and morphology, as well as pre- and post-copulatory reproductive performance, in fish. Michael will be busy writing up all those papers over the next 6 months.

PhD student Patrick Tomkins has completed all his experiments and is now frantically writing up his thesis. His second paper on "The agricultural contaminant 17β-trenbolone disrupts male-male competition in the guppy (*Poecilia reticulata*)" is currently in review.

Centre for Aquatic Pollution Identification and Management (CAPIM), Annabelle Pontvianne (pa@unimelb.edu.au)

Below is a list of recent CAPIM publications:

1. Mehler WT, Keough MJ and Pettigrove V. (2017). Development of whole-sediment toxicity identification evaluation (TIE) techniques for two Australian freshwater species: Chironomus tepperi and Austrochiltonia subtenuis. Environ Toxicol Chem. doi:10.1002/etc.3787

2. Zhang J, Duke M, Northcott K, Packer M, Allinson M, Allinson G, Kadokami K, Tan J, Allard S, Croue J-P, Knight A, Scales P, Gray S. (2017). Small scale direct potable reuse (DPR) project for a remote area. Water 9, 94, DOI 10.3390/w9020094.

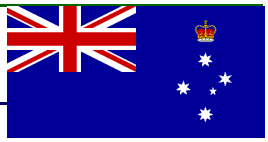
3. Hale R, Piggott JJ, and Swearer SE. (2017). Describing and understanding behavioral responses to multiple stressors and multiple stimuli. Ecology and Evolution 7, 38-47.

4. Allinson M, Zhang P, Bui A, Myers JH, Pettigrove V, Rose G, Salzman SA, Walters R and Allinson G.(2017). Herbicides and trace metals in urban waters in Melbourne, Australia (2011–12): concentrations and potential impact. Environmental Science and Pollution Research. doi:10.1007/s11356-017-8395-9

Persistent Organic Pollutants Research Group - RMIT University, Dr Bradley Clarke (bradley.clarke@rmit.edu.au)

Brad joined the environmental science faculty at RMIT University in 2013 and began setting up the Persistent Organic Pollutants (POPs) Research Group. The focus of the group is to investigate the source, fate and impact of POPs on public health and the environment. Our intention is to improve our understanding of the risks associated with POPs exposure through controlled experimental studies and monitoring programs. We have a strong analytical focus and have partnered with Agilent Technologies to optimise extraction methods and utilise LC/MS and GC/MS methods to quantify pollutants such as polyfluorinated alkyl substances (PFAS), brominated flame retardants (BFRs; historic and emerging), polychlorinated biphenyls (PCBs) and a number of other emerging contaminants in environmental matrices.

We have had a busy year and are currently collaborating on projects with Water Research Australia, Melbourne Water, Water Corporation (Western Australia), SA Water, EPA Victoria, Australian Contaminated Land Consultancy Association (ACLCA), the Australian and New Zealand Biosolids Partnership (ANZBP) and the Australian Antarctic Division (AAD). Currently, there are 14



researchers in the group (including 7 PhD candidates) and the majority of our projects are conducted with industry partners to produce practical outcomes where possible.

Some notable projects include a collaboration with Melbourne Water to understand the impact of wastewater derived PFASs on the unique Australian aquatic and terrestrial environments. Not only did Timothy Coggan receive an Australian Postgraduate Award but he was also awarded the highly prestigious Nancy Millis Water Research Australia award 2016. To help find solutions to potential wastewater contamination problems PhD candidate Mathew Askeland is exploring novel remediation techniques application of biochars for remediation of groundwater contaminated with PFAS.

Thomas McGrath is in the second year of his PhD and already published three journal papers looking at BFRs in soil. His work looked at the development of novel analytical approaches for simplifying extraction, reducing time for trace organic pollutant analysis in solid matrices (environmental/biological) and assessing human exposure to novel brominated flame retardants. Tom is working in collaboration with EPA Victoria to understand the impact of e-waste processing facilities here in Melbourne.

Phoebe Lewis is one lucky environmental scientist and is getting to spend lots of time in the field. For her Honours project, she spent two weeks on location at Lord Howe Island conducting one of the first studies looking at BFRs in seabrids in the Southern Hemisphere. Mid-2016 she started her PhD and has just got back from a summer in Antarctica where she is examining the relationship of POPs body burden with plastics debris in Antarctic seabirds and the extent of POPs levels in the Antarctic environment.

Damien Moodie has just started his PhD investigating the environmental impact of PFAS in biosolids. For his Honours project ("Investigating the uptake of PBDEs adsorbed to microplastics by earthworms") he was awarded the Australian Water Student Water Prize for Victoria.

The POPs group is looking forward to producing some great research in 2017 and beyond!

Minna Saaristo (minna.saaristo@monash.edu), Victoria Regional Representative

Regional Reports

Queensland

Australian Rivers Institute – Fred Leusch, Jason van de Merwe, Steve Melvin, Peta Neale, Erik Procházka, Kimberly Finlayson, Chantal Lanctôt, Stephanie Chaousis, Shima Ziajahromi and Shannon Cavanough

Change of structure

The labs formerly known as the Smart Water Research Centre are now managed by the Australian Rivers Institute (ARI), and the office space has merged with the Gold Coast Centre for Coastal Management (GCCCM) and the Cities Research Institute (CRI). Functionally, this has little consequence for our group and we still focus on the same areas of water quality and ecotoxicology, but will hopefully open new doors for cross-disciplinary collaboration.

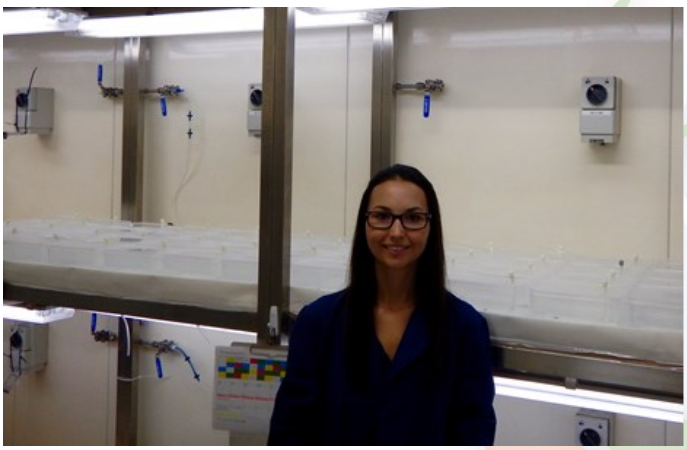
Brisbane World Science Festival

Erik Prochazka and **Gülsah Dogruer** recently represented the field of ecotoxicology at the Griffith School of Environment's 'Experts Zone' on Saturday 24 March, 2017 in the Southbank Parklands in Brisbane. The morning was extraordinarily successful, as our ecotoxicology display showcasing the IPAM *P. subcapitata* assay attracted several hundred visitors of all ages, from pre-schoolers to retirees. We were able to present the crossover between basic biology, engineering and toxicology, which is often present in our work, and hopefully managed to attract future students as well as change people's minds about using herbicides around their homes.

Jason van de Merwe and **Fred Leusch** were also involved with the festival activities, teaching a group of Science Apprentices about techniques and principles involved with identifying and understanding risks to the natural environment caused by human activities. Fred Leusch was also an expert involved in the discussion about "The inconvenient truth of bottle water".

Group Member Update

Chantal Lanctôt is getting ready to head down to the Australian Synchrotron in April. She and her collaborators, William Bennett, Tom Cresswell and Enzo Lombi have been awarded beam time to continue her research looking at the biodistribution and speciation of selenium in tadpoles of the native stripe marsh frog, including comparison of dietary and waterborne exposures.



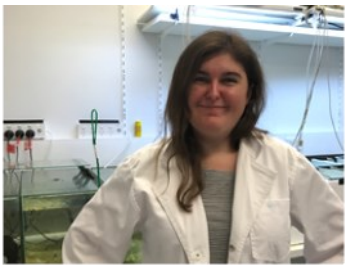
Regional Reports

Queensland

Shima Ziajahromi is now in the final year of her PhD and working to finalise the last part of her project. Notably, she has developed a new method to sample microplastics from wastewater effluent and made some interesting findings on the significance of wastewater treatment plant effluent as a pathway of microplastics, the results of which have now been published in Water Research. More recently, she conducted toxicity tests on the effects of microplastics in aquatic organisms at CSIRO Land and Water in Adelaide with Dr. Anu Kumar and is now wrapping up data analysis and writing papers. Good work Shima**!**

Steph Chaousis is just over midway in her PhD and has recently obtained preliminary data validating her approach of detecting changes in cellular protein expression in response to contaminant exposure. She is now growing cells from various organs harvested from green sea turtles in order to commence her full exposure experiments. Steph asked me to include this 'cute' picture of a turtle...you're welcome, Steph.

The 'hard part' is over for PhD student **Gulsah Dogruer**, who recently established the scope of her research project - Assessing the impact of chemical exposure on the health of endangered sea turtles through toxicokinetics and toxicodynamics. Gulsah is supervised by Fred Leusch, Jason van de Merwe and Liesbeth Weijs from The University of Queensland.



Meet our newest student, **Shannon Cavanough**, who recently started an Honours project supervised by Steve Melvin and Fred Leusch. Shannon's research will explore metabolomics response profiles in tadpoles exposed to treated sewage, and time permitting she will tie this in with some behavioral analysis.

Conferences

Steve Melvin and **Chantal Lanctôt** are excited to be attending the SETAC EU 2017 meeting in Brussels, Belgium, where both have platform presentations accepted and Steve will also be presenting a poster. **Chantal** will be presenting some of the findings from her time spent at the Australian Nuclear Science and Technology Organisation, where she collaborated with Tom Cresswell to use autoradiography to explore selenium uptake and tissue distributions in larval amphibians (recently published in Aquatic Toxicology).

Steve's presentation will discuss some of his research aimed at improving the reliability of behavioural toxicity research. Specifically, he recently submitted a manuscript with Prof John Sumpter (Tony Roach Memorial Keynote at this years SETAC AU 2017 meeting) exploring how arbitrary design choices could be significantly influencing the results of behavioural studies with fish. His poster will present recent work using NMR-based metabolomics as a tool for sub-lethal toxicity evaluation (both recently published in Aquatic Toxicology).

Steven D Melvin (s.melvin@griffith.edu.au), **Queensland Regional Representative**

Regional Reports

Western Australia

Curtin University, Monique Gagnon (M.Gagnon@curtin.edu.au)

At Curtin University, the ecotox team is completing a few projects. "Determining Baseline Fish Biomarker Levels in the Timor Sea" project funded by Shell and Inpex is near completion, while the 'Port Phillip Bay project' project conducted in collaboration with CAPIM is still generating new data. PhD candidate Jarrad Baker is excited by his recent successes exposing fish larvae to the water soluble compounds of crude oils – with Tristan Stringer's help, Jarrad's project is progressing well. Monique is busy writing manuscripts and teaching, while Chris Rawson has accepted a 3-year secondment as the Associate Dean Teaching and Learning for the School of Science, but is still keeping his ecotox hand in though various PhD projects.

Intertek Ecotoxicology – Tristan Stringer (tristan.stringer@intertek.com)

Intertek has just rebranded globally with a new logo! We are still the same people providing the same services, just a new look.

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The ecotox division has continued to be busy with new projects. We have continued our partnership with Monique and Chris at Curtin University and have been helping Jarrad with some of the oil spill weathering and fish testing aspects of his thesis. In January we had the privilege to hoisted Maria Cherry, a PhD candidate from the Cawthron Institute in Nelson New Zealand. We were assisting Maria in developing new chronic copepod development bioassays with native New Zealand copepods. She had a very productive three week stay and hopefully she will get some great results!

Tristan Stringer (tristan.stringer@intertek.com), Western Australia Regional Representative

Regional Reports

Northern Territory

Environmental Research Institute of the Supervising Scientist, Mel Trenfield (Melanie.Trenfield@environment.gov.au)

The Ecotoxicology group at the Environmental Research Institute of the Supervising Scientist have recently been focussing on chronic toxicity test methods for both a local tropical freshwater species of fish *Mogurnda mogurnda* (7 or 14 day exposure) and also the mussel *Velesunio* sp (14 day exposure).

The development of the test for the mussel is complete and our PhD student Linda Kleinhenz is now carrying out 14-day tests with the juvenile mussels investigating the toxicity of contaminants including ammonia, copper, uranium and magnesium. Linda is now halfway through her PhD and progressing well. Tom Mooney will include Linda's ammonia toxicity data for the mussel along with existing toxicity data for other tropical species to develop a water quality guideline value for ammonia specific to tropical freshwater. Tom has several manuscripts relating to ammonia toxicity soon to be submitted.

Linda Kleinhenz, PhD student

Linda has also been running 24-h acute tests with the mussel larvae (glochidia) and has found some interesting differences in sensitivity between mussels collected from different sites. It turns out although the mussels at these sites were once thought to be the same species, genetic analyses have confirmed that this difference in sensitivity is probably at least partly caused by these mussels being of several different species!

Ceiwen is in the process of comparing the 7 day fish test that she has developed with a 14 day test and 28-day test to assess the difference in sensitivity of the fry when using the different exposure periods. This will involve comparison back to the sensitivity that Kim Cheng observed for her published 28-day chronic test with *M. mogurnda*.

Mel Trenfield is beginning some work looking at the toxicity of mixtures of the contaminants that are of potential concern for the Ranger Mine in the NT (U, Mg, Mn and NH_3).

Mel Trenfield (Melanie.Trenfield@environment.gov.au), Northern Territory Regional Representative

General Member Profile

Dr Peter Bain

Current Employer:

I'm currently an Experimental Scientist at the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Waite Campus, Urrbrae, South Australia.

Research Background:

I received my PhD from Griffith University (GU) in Brisbane, Australia, funded by a scholarship from the CRC for Water Quality and Treatment and supervised by Prof Bharat Patel (GU) and Dr Glen Shaw (EnTox, UQ). My thesis focused on identifying altered biological pathways in cultured human cells exposed to a cyanobacterial toxin, cylindrospermopsin, using a combination of genomics, proteomics, and reporter gene assays. After completing my PhD I joined Protagonist Therapeutics, a biotech startup founded by Prof. Mark Smythe at the Institute for Molecular Biosciences, University of Queensland, where I helped to develop phage display techniques for generating and screening large combinatorial libraries of disulphide-rich peptides for potential use as receptor antagonists to treat autoimmune diseases. This gave me a solid foundation in molecular biology as well as some interesting insights into the workings of private industry and startup culture. I returned to academia as a postdoctoral research associate in Dr Kathy Schuller's lab at Flinders University in Adelaide, where I developed *in vitro* screening tools for antioxidants, cloned and characterised genes for antioxidant enzymes from marine fish species, and established new fish cell lines suitable for studying fatty acid metabolism, lipid peroxidation and cytotoxicity.

Current Research Interests:

Since 2012 I have been a member of Dr Anu Kumar's ecotoxicology team at CSIRO Land and Water in Adelaide, delivering to varied projects on water quality and emerging contaminants. My role as an experimental scientist involves plenty of hands-on laboratory and field work, which I enjoy, while providing me with the opportunity to publish and to contribute to capability development within the organisation. My work largely focuses on *in vitro* and molecular aspects of aquatic toxicology, including the development and implementation of cell-based rapid screening tools, characterising responses to contaminants in aquatic organisms using transcriptomics approaches, and the discovery and validation of molecular biomarkers of contaminant exposure in Australian native species. I am particularly interested in studying the molecular interface of organism and environment – how contaminants interact with specific receptors or enzymes, how these interactions differ between organisms, and how we can exploit biological receptors for use in biosensors and cell-based assays suitable for the rapid identification of potential environmental hazards.

Please contact Peta Neale (p.neale@griffith.edu.au) if you would like to be featured in an upcoming edition

SETAC AU Mid Career Medal 2016

Associate Professor Grant Hose

Grant accepting the SETAC AU mid career medal at Hobart

Preamble: I am honoured to receive this award. Below is a brief insight to my background (and psyche). SETAC is great and full of good people, many of whom have been important mentors, role models and friends. I'm sorry I could not mention you all here. I also know that for many Australians the Bicentennial was not a cause for celebration.... I was only 15….please allow me the literary licence…

1988. Exciting times as Australia is immersed in the excitement of the Bicentennial year, Rick Astley was playing on my Walkman and the world was good. I was a young lad from a suburban high school embarking on my first week of Year 10 work experience. I enjoyed the week monitoring beach water pollution, and I could see that a career in this game could certainly have its upside, but I left the Sydney Water Board offices quite taken with the idea of becoming an environmental scientist.

Work experience week No 2. I arrived, Monday morning, at the Environmental Toxicology labs of the State Pollution Control Commission on the UTS campus at Gore Hill. The boss, a bearded gentleman by the name of John Chapman showed me around, and the lab manager, Moreno Julli, had plans for a week of field sampling and lab analysis. I remember field trips to local creeks to collect zooplankton for tox testing, and repeatedly pressing record on the cassette player to record data as I injected samples into the gas chromatograph. John Chapman has always led a fantastic team in the various iterations of this Centre, and his report at the end of the week suggests he saw great promise in this fledgling scientist (I could have made that bit up!). I celebrated my second week of work experience with an overnight bus trip to Brisbane to see Expo 88 (you gotta love a bicentennial year!). I now knew that being an environmental scientist was the thing for me.

Fast forward a few years. Every cloud and all that….A somewhat fortunate offer to study Environmental Biology at UTS, it wasn't where or what I had planned, but it quickly became apparent that this was the right place for me. I loved my undergraduate studies and was captivated by a third year freshwater ecology field trip. My somewhat overzealous sample collection meant I had to spend a lot longer in the lab to identify my bugs than my colleagues did, but it was time enjoyed, and made even more amazing was the analysis of the multivariate analysis of the data that showed me a list of bug names could be transformed to a meaning picture of how the world works. I was sold! Freshwater ecology was for me (Thank you Richard Lim!). So after 3 years and a BSc I now was an environmental scientist (of sorts)!

An honours year studying cave spiders (following my other passion) and a year working for an environmental consultant taught me much, but the lure of research was calling. I received a LWRRDC scholarship, and with generous support from Richard Lim and Ross Hyne and the NSW EPA, I started a PhD scholarship at UTS and the Centre for Ecotoxicology. This was the place to be for ecotoxicology research at the time. I was lucky to learn from great scientists, and had access to the excellent facilities that the UTS/EPA joint venture could provide. I was back to my old work experience haunts…although by now the tape recorder had been superseded (zip drives were the new thing!). My PhD was well funded and we built a stream mesocosm system on the banks of the Namoi River. Such a cool project! Each summer we had an enthusiastic team of scientists and volunteers from UTS and the Australian Catholic Uni helping out with pesticide dosing experiments in the hot Gunnedah sun. Thanks to Scott Wilson, Fleur Pablo, Peter Jones, Alex Leonard and many

others (it was a cast of thousands!) for their time and energy. Thanks also to the generous support of the cotton industry. After 4 years of PhD I was now an ecotoxicologist!

As a PhD student who knew everything I was frequently challenged by my supervisors and by others in the EPA, particularly those reviewing my thesis chapters and papers. What I saw then as repeated failures to see my excellence, I see now where comments that showed great thought, insight and patience (Thank you supervisors, and David Leece in particular!). I learnt a lot from those comments, although I didn't see it at the time!... but that is the inevitable path of science.. and the importance and value of peer review! (yes… I painfully admit...sometimes reviewers are right!)

It was during my PhD that I joined ASE, attended my first conference at Griffith Uni, and embarrassed myself in front of the great Graeme Batley (I'm sure (hope) he wouldn't remember!). It was a great community to be part of. A great conference and a particularly inclusive and supportive environment for students. Many of the students at that time have remained my peers in the Society. I did my time as student Rep in ASE, and later spent a while as NSW Rep and membership officer once I had a real job.

As I was in the final throes of thesis writing, I began working for the EPA on the AUSRIVAS project. Back to my stream ecology roots, and again a great team to work with. This was followed by a stint in the Beachwatch section doing beach water quality monitoring… again…but this time getting paid... Who says school work experience has no relevance?

In 2002, I was offered a postdoc in the newly formed Institute for Water and Environmental Resource management. This position was a research fellowship in ecotoxicology, and provided an opportunity to pursue my growing interest in groundwater ecology and maintain my focus on ecotoxicology research. Here I had the great pleasure to work under and learn from Tally Palmer. Here I began to build the networks that I currently enjoy. A second postdoc at UTS preceded my move to my current home at Macquarie University.

Ecotoxicology is a paradox. It's a great, diverse and interesting branch of science. It has the excitement of being so multidisciplinary and providing opportunities to work with great people (which I have been particularly lucky to enjoy). However, it is unfortunately necessary because of the way that we have treated our planet.

My approach to research is to participate in projects that allow me to work in great places and with great people. I currently have ecotox projects underway with Cath King and others in the subantarctic and Antarctic, in the tropics of Kakadu with Andrew Harford and Chris Humphreys at ERISS, and in the arid zone of western NSW with Paul Story from the Plague Locust Commission and Uni of Wollongong. Great people, great locations.

I am lucky in academia to work with students and encourage in them an interest in science, ecology and ecotoxicology. My current and past PhD students have been an important influence on me as I have been on them (and hopefully a good influence!), and they have changed the way I view and approach science and research.

Throughout my career to date, it has been smart, wonderful people, friends, that have provided support and opportunities, and with whom I have enjoyed collaborating. There are many more with whom I have never directly worked who have been great role models, mentors and all round lovely people. The SETAC AU community family, just as the ASE family before it, is strong, welcoming, supportive and great fun. The Society has always been a great mix of scientists from academia, industry and government agencies. It is a great, collegial society. And unlike many disciplines in science, our Society is blessed to have a very strong representation of successful women at all career stages. As a society representing Australasia we have benefited greatly from the broad

cultural diversity that this has provided, and I believe that this has been further strengthened by our closer ties with the global community since formally joining SETAC.

I am excited for the future of ecotoxicology. It remains the nexus of chemistry, biology, ecology, statistics and science communication. As a discipline, ecotoxicology is great at incorporating developments in all of these fields and, with the huge advances that are happening in all of these areas, I see exciting times ahead. Personally, I am excited to be part of a growing team of ecotoxicologists at Macquarie Uni. With Anthony Chariton and Scott Wilson now here, there is a critical mass building, and we are growing our collaborations within and beyond the University.

A Society such as SETAC and ASE before it is reliant on leadership and volunteers. The Society has and continues to be served by a bunch of dedicated volunteers who managing to run and grow the society while holding down day jobs! Thanks to you all past and present...but you would have to single out Munro Mortimer for services WAY above and beyond the call of duty. The great success of this society is down to people like you.

Thank you to all of you, to those of you I have worked with, shared ideas with, learnt from, and/or carved up a conference dinner dance floor with. This award is a great honour. Recognition of my work with the SETAC Mid Career Medal is as much recognition of the collegiality that underpins this society and that of my SETAC colleagues, whom I call friends, who have made my career in this exciting field possible through their kindness, openness and generosity. Thank you also to my wonderful, loving family who support, encourage and enable me to do what I do.

Student Profile

Kundo Hundang

Name: Kundo Hundang

Degrees held: Bachelors of Science in Chemistry
Master of Philosophy in Applied Sciences

Institution: The Papua New Guinea University of Technology

Supervisors: Dr Janarthanan Gopalakrishnan
Dr Aisak Pue

Est. Compl. November 2018

Thesis Title: *Studies on Health and Medical conditions related to environmental effects of Volcano affected areas of the East New Britain Province of Papua New Guinea*

Email: guba.hundang@gmail.com

About me

I have worked in laboratories in various places in PNG including private companies, non-government organizations, mining companies and government institutions, always looking for opportunities of doing research. I am passionate about doing research in the area of environmental pollution and its impact on human health and what can be done through research to improve quality of life. In 2008, I was employed at the Papua New Guinea University of Natural Resources and Environment as a Senior Technical Officer with the academic section of the university managing the science laboratory. As a scientist I enjoy field work as well as laboratory work. I was curious and passionate about the impact of volcanic activities that was affecting the environment and the general health of the people within the surrounding environment. People perish due to lack of knowledge, but through proper scientific research output, they can be made aware so that the society can benefit at large.

My mentor and a senior lecturer in Fisheries Dr. Lloyd Werry suggested I should specifically study the impact of cadmium on human health through the consumption of food and fishery products from the affected volcanic region. Cadmium is known to accumulate in kidney and liver of fish. Dr. Werry had previously worked with Dr. Ross Smith and was a member of SETAC Australasia and introduced SETAC Australia to me during 2010.

PhD Research

This study leads on from an earlier investigation (Hundang *et. al*, 2014) in determining the levels of heavy metal cadmium in foods from the Gazelle Peninsula area in the East New Britain Province, a high volcanic region in Papua New Guinea. The report highlighted unusually high concentrations of Cd in foods common to the diet of the local area. Cadmium levels above the safe weekly tolerable intake (WTI) of 7 µg/Kg bw (JECFA and WHO, 2004) were found in certain foods assuming retention level of absorbed Cd is 20% or more depending on absorption factors (Hundang, 2015). Cadmium is one of the minerals emitted by volcanoes and the Gazelle Peninsula, a high volcanic region, has long been suspected of being polluted with Cd. Currently there is one active

Student Profile

Kundo Hundang

volcano (Mt. Tavurvur) and together with other two dormant volcanoes (Rabalanakaia and Vulcan) erupted in 1994 and recently in September 2015.

The report signifies the potential health implications from the consumption of foods obtained from the areas high in Cd that are known to lead to many diseases. It is now evident and well known that Cd damages tissues of liver, kidney, lung and pancreas resulting in diseases leading to cancer and secondary diseases like type-2 diabetes (Satarug and Moore, 2012). Hence Cd is a known diabetogen.

Recent data from one of the two hospitals in the province (Nonga General Hospital) indicates high cases of diabetes, average ˜54 cases/yr with increasing numbers of various non-communicable diseases, ˜100 cases/yr. This is 0.03% (260,000) of the total population. Anecdotal evidence from the other hospital also indicates high cases of diabetes with a local Health Centre recording up to 5 out of 10 outpatients having some form of diabetic condition (Hundang, 2014). Moreover in a recent article in the National, a daily newspaper, a local physician (Maha, 2016) reported a high incidence rate of type-2 diabetes in the Gazelle Peninsula to stand at around 9.23 % (i.e. 24,000 out of 260,000 population of the Gazelle).

The information and evidence presented give prominence to environmental Cd as having a significant role in the high incidence of type-2 diabetes in the area. The detection of high levels of Cd in food and water samples collected from selected areas of the Gazelle Peninsula may be evidence enough to corroborate this speculation but proper studies are needed to properly validate this assumption. This study intends to investigate the role that Cd may have in the high incidence rate of type-2 diabetes in the Gazelle Peninsula of the East New Britain Province of Papua New Guinea.

Where to from here

I am now in my second year of PhD program; however I have not secured any funds yet for my studies. Proposal submitted to various government organizations for funding were unsuccessful, so I am still looking elsewhere to keep submitting proposals for funding. In the meantime, with limited personal funds and with the help of the Department of Applied Sciences, PNGUOT, I hope to continue with field sampling and completing all analysis by the end of 2017.

My PhD research follows my interest in the environmental health and toxicology and this gives me an opportunity in applying my chemistry skills to solve emerging health issues that are affecting human health and the environment.

It is a great pleasure to be a member of SETAC Asia/Pacific and more than that a PNG rep to SETAC Asia/Pacific which gives an opportunity to learn from experts and increase my network worldwide. I look forward to be more involved with SETAC in collaborative research work in future.

Please contact Francesca Gissi (Francesca.Gissi@csiro.au) or Nicole McRae (Nicole.mcrae@pg.canterbury.ac.nz) if you would like to be featured in an upcoming edition

Student Corner

Francesca Gissi (Francesca.Gissi@csiro.au)

Nicole McRae (nicole.mcrae@pg.canterbury.ac.nz)

Asia Pacific Student Advisory Council (APSAC)

Earlier this year we held elections and voting for the newly formed APSAC. Thanks to all those who applied, and congratulations to those who were elected, in particular our Australian rep, Steph Chaousis, our NZ rep, Maria Charry and our rep from PNG, Kundo Hundang. Below is the list of contacts for the council. Please don't hesitate to reach out to your local representative if have any questions, comments, or concerns. Also, a massive thanks to the APSAC Chairperson, Rhys Cartlidge for organising the election.

Position	Name
Chair	Rhys Cartlidge
Vice Chair	Francesca Gissi
Secretary	Nicole McRae
Australian Rep	Steph Chaousis
NZ Rep	Maria Charry
PNG Rep	Kundo Hundang
Vietnam rep	Ben Pham
Sri Lanka Rep	Sam Lekamge
India Rep	Sanjeeb Mohapatra
China Rep	Qian Li
Hong Kong Rep	Racliffe Weng Seng Lai

SETAC AU Gold Coast 2017

This year's conference on the Gold Coast is shaping up to be another fantastic event. We'd like to take this opportunity to thank Steph Chaousis for helping us organise the student function. Steph is a PhD candidate based at Griffith University and has all the local knowledge. We look forward to seeing you all on the Gold Coast in September.

Student Publications

Alexander, F.J., King, C.K., Reichelt-B, A.J. and Harrison, P.L., 2016. Fuel oil and dispersant toxicity to the Antarctic sea urchin (*Sterechinus neumayeri*). Environmental Toxicology and Chemistry, In press, http://dx.doi.org/10.1002/etc.3679

Kastury, F., Smith, E. and Juhasz, A.L., 2017. A critical review of approaches and limitations of inhalation bioavailability and bioaccessibility of metal(loid) s from ambient particulate matter or dust. Science of The Total Environment, 574, 1054-1074 http://doi.org/10.1016/j.scitotenv.2016.09.056

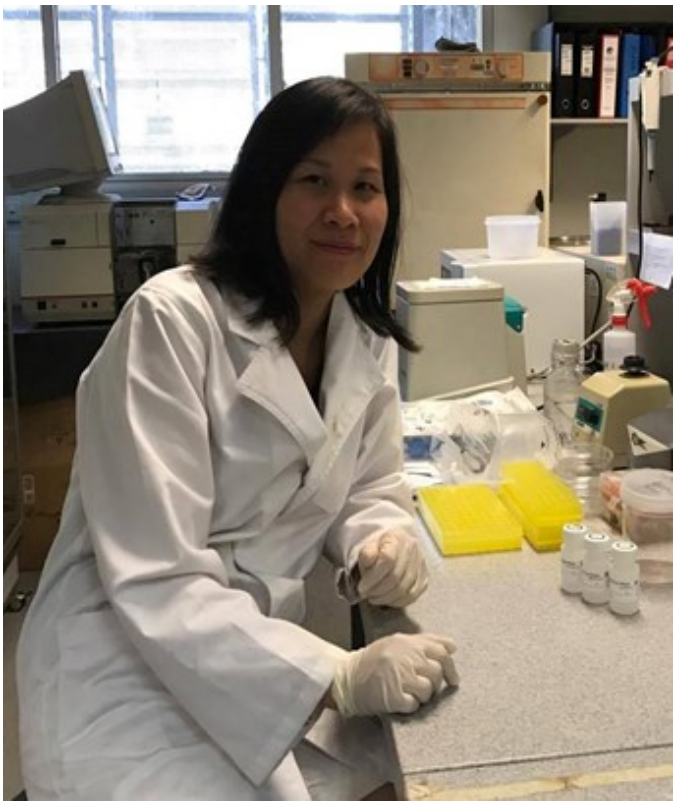
Lanctôt C.M., Melvin S.D., Cresswell T. (2017) Selenium speciation influences bioaccumulation in *Limnodynastes peronii* tadpoles. Aquatic Toxicology, 187, 1-8 http://doi.org/10.1016/j.aquatox.2017.03.009

Ubrihien, R.P., Ezaz, T., Taylor, A.M., Stevens, M.M., Krikowa, F., Foster, S., Maher, W.A., 2017. The response of *Isidorella newcombi* to copper exposure: Using an integrated biological framework to interpret transcriptomic responses from RNA-seq analysis. Aquatic Toxicology, 185, 183-192. http://dx.doi.org/10.1016/j.aquatox.2017.02.014

Ziajahromi, S., Neale, P.A., Rintoul, L. and Leusch, F.D., (2017). Wastewater treatment plants as a pathway for microplastics: Development of a new approach to sample wastewater-based microplastics. Water Research, 112, 93-99. http://dx.doi.org/10.1016/j.watres.2017.01.042

SETAC AU Postgraduate Research Publication Award – Research Findings

Thi Kim Anh Tran



As a part of my PhD thesis, the publication "*Mechanistic insights into induction of vitellogenin gene expression by estrogens in Sydney rock oysters, Saccostrea glomerata*." (Tran *et al.,* 2016) reports on the molecular isolation of the cDNA and genomic sequences of oyster Vtg and characterisation of its expression through *in vitro* and *in vivo* exposure to E2, treatment with the ER antagonist ICI 182, 780 and DNA methylation analysis of a 5' intragenic CpG island.

Environmental estrogens are known to interfere with normal development and reproduction in a wide range of marine invertebrates. Previous studies have developed an oyster biomonitor to indicate the presence of estrogenic compounds in marine environments through exploiting the induction of the egg yolk protein precursor vitellogenin (Vtg). Despite this advance, the mechanism through which estrogens exert their action on Vtg gene expression, in particular the functional role of the estrogen receptor (ER), is currently unknown. The present study was carried out in an attempt to address this knowledge gap.

The results indicated that the deduced protein of *S. glomerata* Vtg (*sgVtg*) is substantially longer than those of the other oyster Vtgs reported so far and contains all the conserved domains as found in other marine molluscs. The *sgVtg* promoter contains multiple putative half-EREs which are closely spaced, implying that they may function as an estrogen response unit (ERU) to interact with ER. In line with the potential involvement of ER in *sgVtg* regulation, the induction of *sgVtg* mRNA expression in ovarian explants was shown to be abolished by the ER antagonist ICI 182, 780. Considering that the vertebrate-like ER so far reported in molluscs lacks estrogen-binding ability, this finding supports the requirement of a novel estrogen-binding receptor for gene activation. To elucidate the regulation of *sgVtg* at the epigenetic level, we assessed the DNA methylation levels of a 5' intragenic CpG island in ovaries after E2 exposure *in vivo*. Bisulfite sequencing revealed hypomethylation of the CpG island in both control and E2-treated oysters. However, neither significant differential methylation nor correlation between methylation and *sgVtg* mRNA levels was identified. Overall, this work provides new molecular insights into how environmental estrogens regulate Vtg expression in marine molluscs and lays the foundation for further research into the mechanism of action of estrogenic compounds on molluscan vitellogenesis.

Whatôs Happening?

Conferences and Workshops

If you are aware of conferences or workshops that would be of interest to other members of SETAC AU

SETAC AU Gold Coast
"The role of environmental toxicology and chemistry in a changing environment "
Gold Coast, 3rd-6th September 2017
http://www.setacgoldcoast2017.com.au/

On behalf of the organising committee, it gives us great pleasure to invite you to participate in the next Society for Environmental Toxicology and Chemistry (SETAC) Australasia Conference on the beautiful Gold Coast, in Queensland, Australia from the 3rd – 6th September 2017.

This meeting will provide an opportunity for delegates from academia, industry, and government to discuss the latest research in the field of environmental toxicology and chemistry. Set amongst the amazing beaches, World Heritage-listed rainforest, and vibrant city nightlife of the Gold Coast, this Conference is not to be missed!

The Conference will be held at the Sofitel Hotel in Broadbeach, a luxury hotel less than five minutes walking distance from the beach, and situated amongst a wide variety of excellent restaurants and shops. A comprehensive Scientific Program will be complemented by a variety of exciting social activities, which will take advantage of the outstanding food and wine on offer in Broadbeach, the Gold Coast's premier dining district.

We look forward to welcoming you to the sunny Gold Coast!

Dr William Bennett and Professor Dianne Jolley

Abstract deadline:	**1st May 2017**
Early bird registration:	**4th July 2017**

SETAC New Zealand Regional Meeting
Christchurch, New Zealand, 6th July 2017.

The first SETAC New Zealand Regional Meeting will be held in conjunction with the New Zealand Marine Sciences Conference in Christchurch on the 6th of July. The special session of the conference will be followed by a free half day workshop on science communication on the 7th of July. Professor Kevin Thomas from Queensland University and formerly NIVA in Norway will be the keynote speaker. Please register using the Marine Sciences Conference website https://www.nzmss2017.org/. Please contact Sally Gaw sally.gaw@canterbury.ac.nz for further information.

Abstract deadline:	**19th April 2017**

Awards and Prizes

SETAC AU National Travel Fellowships

One or two SETAC AU National Travel Fellowships are offered every year. The goal of these fellowships are to promote greater dissemination of environmental toxicology and chemistry knowledge and professional networks throughout Australasia, by providing travel support to the recipients to present seminars or technical workshops in Australasia.

The goals of these fellowships are:

- To promote SETAC AU in universities and workplaces around Australasia, through dynamic cutting-edge science, recent developments and current research in environmental toxicology and chemistry. This promotion will increase the profile of SETAC AU among students and working scientists, with a goal to increase our network capacity, event participation and membership base.
- Either one or two fellowships per year will be offered: one for a senior member and one for an early career member. Ideally there will be two of the three stakeholder groups (industry, government and academia) represented within any one calendar year. The goal will be to represent SETAC as a professional body that has strength in welcoming and nurturing graduates in the early career phase, irrespective of the employment field.
- The fellowship will be awarded at the conference dinner of the annual conference, or at the national AGM (should there be no conference hosted that year), and fellowship recipients must be able to participate in presentations at 5 locations (targeting different states) at least 3 months prior to the subsequent annual conference (sufficient time to meet abstract submissions for the conference at that calendar year). A list of preferred states will be provided on the SETAC AU website as necessary.
- Recipients will present seminars or a technical workshop to host institutions, which will include the SETAC AU logo on the slide master template, acknowledgement of the fellowship on their acknowledgement slide, and one slide advertising the subsequent SETAC AU conference.
- Budget considerations: allow $5500 per year per fellowship, based on receipt claims.
- Council reserves the right to not offer the fellowship when finances are deemed insufficient, or if it is deemed that the applications will not satisfy the goals of the award.
- Nominations can be by individuals (self-nominations) or from colleagues. A nomination must be seconded by two SETAC members and include the names of two referees with knowledge of the candidates work. Referees may second the nomination. Candidates must be current full members of SETAC (or ASE) with at least two years standing and have been a resident in Australia, New Zealand or Papua New Guinea for at least one year when nominated. SETAC AU Council Executive Committee Members are not eligible to apply.

Applications will be considered against the criteria:

1. Overall contribution to Environmental Toxicology and Chemistry in Australasia over the last five years.
2. National and international standing in the field of Environmental Toxicology and Chemistry.
3. Contributions by the way of research, teaching, policy development and/or application of environmental toxicology and/or chemistry to industry.
4. Significant works (e.g. industrial reports, patents, refereed research papers, etc.).
5. Contributions to the SETAC community.
6. Evidence of public outreach

Awards and Prizes

The selection committee will also give consideration to those whose contribution is not directly reflected by publications. The applications must be submitted to the secretary of SETAC AU by 5pm on the 1st June of each calendar year, and applications will be assessed based on merit by a minimum of 3 council members.

The nomination must include the following information:

1. Name
2. Curriculum vitae
3. A list of significant works. These may include industrial reports, patents, refereed research papers, other significant publications (e.g. books, review chapters), or conference papers.
4. A statement of no longer than 750 words of the nominee's contribution to environmental toxicology and/or chemistry in Australasia, addressing the criteria listed above.
5. A full abstract of the proposed presentation (maximum 750 words).
6. A list of proposed target institutions and budget. This may require further negotiation with the SETAC AU council to ensure multiple venues are targeted across concurrent years.
7. A brief statement explaining career interruptions if relevant.
8. A photograph of the nominee

The SETAC AU Council will appoint a sub-committee to consider the nominations and make recommendations. No award shall be made if the Standing Committee considers there is no candidate of sufficient merit.

The recipient will be presented with the award at the conference dinner at the Society of Environmental Toxicology and Chemistry Australasia Conference.

Nominations should be submitted electronically to the Secretary of the SETAC AU (australasia@setac.org), who will forward nominations to the President of SETAC AU for distribution to the assessment panel.

Closing date for nominations: 1st June.

Social Media

For those of you that are savvy with social media, SETAC AU has both a Facebook page and Twitter handle. We encourage all members to use these media tools for communication and research dissemination through your networks.

Facebook Page - Society of Environmental Toxicology and Chemistry Australasia - SETAC AU

Search for @SETACAu

 # People who like this page: 120

Twitter Handle - @SETAC_AU

 # Following: 803
 # Followers: 444

Profile visits (Jan– March): 439
Mentions (Jan– March): 31

Social Media

SETAC AU Guide to Twitter

Adapted for SETAC AU by Julia Howitt (@howitt_julia), Francesca Gissi (@francesca_gissi) and Darren Koppel (@DarrenKoppel). Adapted from RACI (Authors: Anna Ahveninen (@Lady_Beaker), from an article by Alf Larcher (@AlfLarcher))

Twitter is an excellent tool for modern scientists. Its uses range from science communication and connecting with the public to making connections with fellow scientists within Australia and around the world. Many journals and organisations also have Twitter accounts, which allows for an at-a-glance feed of their recent activities. Still, starting out on Twitter can feel a lot like you're shouting alone into the void. SETAC AU have adapted a quick start guide, originally developed by RACI, to help our members get involved in the online scientific community. Here, we aim to outline a few simple steps on how to join Twitter and make the most of your experience from the very beginning.

First, some terminology:
Twitter is a platform where users share their thoughts, news, information and jokes in 140 characters of text or less. Twitter makes global communication cheap and measurable. Profiles are (usually) public — anyone in the world can see what you write, unless you elect to make your profile private. Users "follow" each other in order to keep tabs on and converse with specific people.

A ***Tweet*** *is a* message up to 140-character.

A ***Retweet*** is the sharing or giving credit to someone else's tweet.

A ***Direct Message*** is a private, 140-character message between two people. You can decide whether to accept a Direct Message from any Twitter user, or only from users you are following. You may only direct message a user who follows you.

A ***Twitter handle*** is the account name [=user name]. When you view a Twitter account, the handle appears after an "@" sign, e.g. @SETAC_AU. If you include someone's Twitter handle in your Tweet, that person will receive a notification of your Tweet.

A ***Mention*** is a way to reference another user by their handle in a tweet (e.g. @mashable). Users are notified when @mentioned. It's a way to notify someone of a tweet and start a discussion with them and other users in a public realm. Including their handle at the beginning of your tweet limits who will see it, so it is best to put handles at the end.

To ***follow*** is when you are subscribing to another user's Tweets.

A ***hashtag*** is a topic of discussion following a "#" sign, e.g. #setac, #ecotox, #ozchem, #ozchemchat or #realtimechem etc. The hashtag allows the term to become searchable, thereby facilitating global discussion of a single concept instantly. Use of popular hashtags facilitate discussion between accounts that do not yet follow each other. More on this later.

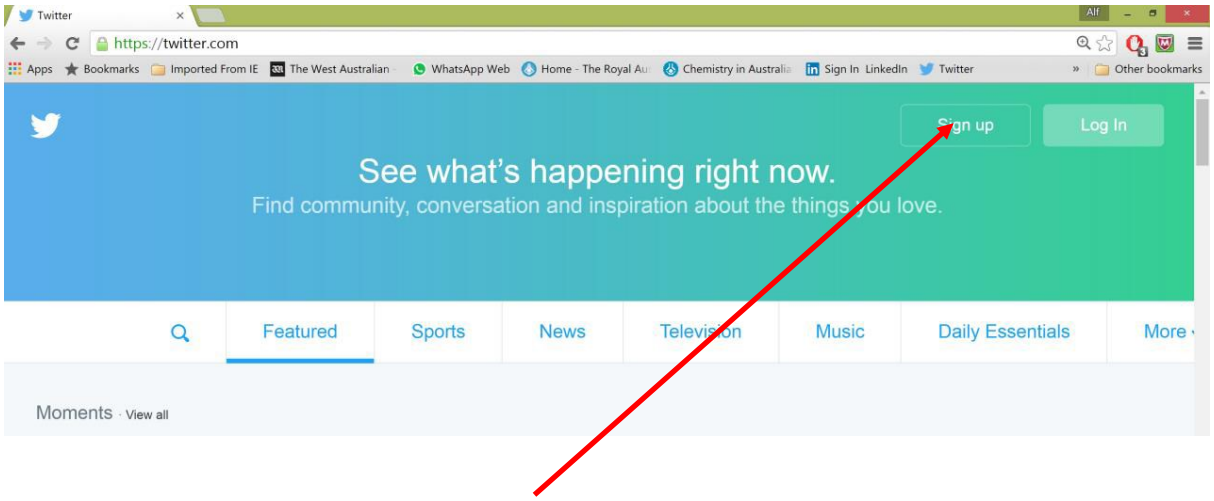
The ***Feed*** is the stream of tweets you see on your homepage. It's comprised of updates from users you follow.

To ***like*** is to click the heart button under a tweet to show your support or agreement with it. They are tallied up to indicate how many people like the comment. A like may also sometimes be used to acknowledge that you have read/seen a tweet where further response isn't required.

Social Media

SETAC AU Guide to Twitter

How to start a Twitter account
Go to the Twitter homepage at https://twitter.com/



2. Create an account by clicking the "Sign Up" button. You'll need to put your name in, select a "handle" [Often, people who create professional accounts simply use their own name as the Twitter handle; however you are not unique some handles may already be in use] and a password.

3. You now create a profile by firstly choosing your areas of interest, who you want to follow [here it gives you a list based on your internet history]. You can add a photo and bio if you want and then search for contacts via your gmail or outlook accounts to see what they are saying. You do not have to give Twitter access to your contact list if you are concerned about privacy - this step is optional.

4. Once you have signed up, you can view your home page:

Your home page
1. This is a snapshot of your profile. You can navigate to your tweets, a list of your followers or a list of people following you by clicking on the respective links.

2. You can send your first tweet by either clicking on your name which takes you to 2 pre filled in tweets and a blank or click on the tweet icon at the top right hand corner and type your message.

3. To embed pictures to your tweet, click on the camera and browse to find the image file you want and select it.

4. The profile display page is your timeline. It is a real-time feed of the tweets from all the accounts that you follow obviously before you follow any accounts, it will be quite empty. The latest tweets are shown at the top of the timeline; scrolling down is scrolling back in time. You can "reply", "retweet" or "like" tweets from the grey icons on an individual tweet.

Reply begins a tweet with the Twitter handle of the account that made that tweet. Your tweet will generate a notification to that account.

Retweet makes that tweet visible on your profile and to your followers.

Like simply archives the tweet to a category of "liked tweets" on your profile.

5. The search bar is useful for finding users of Twitter whose names or Twitter handles you know, or for finding Tweets containing particular hashtags.

6. "Home" brings you back to your timeline if you surf away from this screen. "Moments" lists current news topics of interest. "Notifications" shows tweets that mention you (i.e. include your Twitter handle) and any likes or retweets your tweets receive. "Messages" are private messages sent to you by other Twitter users that cannot be viewed by anyone other than you.

7. Your 'about you' section on the left hand side of your home page is an editable 140 character biography of who you are and what you are interested in. You can add hashtags (#something) and handles (@institution) to show affiliation or support.

Connecting with scientists in environmental toxicology and chemistry

1. Before you get started, give your profile a little polish by navigating to your profile settings. Write a short bio and upload a profile picture. This helps give your account authenticity and a professional feel and increases the likelihood that people you follow will follow back.

2. Search for @SETAC_AU

3. Click on the "Follow" button to begin receiving tweets from SETAC_AU on your timeline

4. Click on the "Following" tab to see twitter accounts SETAC_AU is following, you may like to follow these too. Alternatively try searching for specific accounts you might like to follow e.g. @RACI_HQ, @EMCRForum, @gbrmarinepark, @ecotoxicology @realscientists etc

5. Send a tweet to the @SETAC_AU or @RACI_HQ accounts, introducing yourself. We can welcome you to Twitter and make your account visible to our followers, which is guaranteed to make you some new followers!

Other than directly finding accounts to follow, using hashtags is a good way to connect with like-minded individuals on Twitter. Searching for these hashtags finds tweets and therefore Twitter accounts that use these hashtags. Here are some common hashtags used by our community:

#SETAC or #SETAC_AU
#Science
#ecotox
#pollution
#chem
#environment
#ozchem - used in Tweets on issues relevant to the Australian chemistry community.
#ozchemchat - a live online chat organised by @raci_hq on the first Monday of every month. Find details in the RACI events calendar on their website.
#realtimechem - an international hashtag for chemists, used to highlight practical chemistry and issues relevant to the chemistry community.
#ActualLivingScientist
#phdchat
#ecrchat
#scicomm
#freshwater
#WorldWaterDay

A caution on twitter
Twitter is a way of getting messages out to a global audience. Tweets can quickly be retweeted and reach an audience beyond what you may have expected or intended. While it's generally acknowledged that the tweets of a personal accounts are personal view, it may be conflated with the view of the organisation you are affiliated with.

Nearly all organisations now have social media policies which need to be adhered to when tweeting. Ensure what you're tweeting is appropriate and in keeping with the code of conduct of your organisation.

SETAC AU Mentor Programme

Why a SETAC AU Mentor Programme?

The Society of Environmental Toxicology and Chemistry (SETAC) Australasia Mentor Programme aims to foster a collegiate society by improving the technical and career development of members by establishing mentor relationships

Who is eligible to join the programme?

Any financial member of SETAC AU may take part in the Mentor Programme. All members from early-, mid-, late- or even post-career tracks are welcome to register for the programme

What are the benefits for the mentee?

- Assist in the transition from study to work
- Obtain guidance with regards to career direction
- Learn from your mentor's professional and personal experience and knowledge
- Grow your professional network

What are the benefits for the mentor?

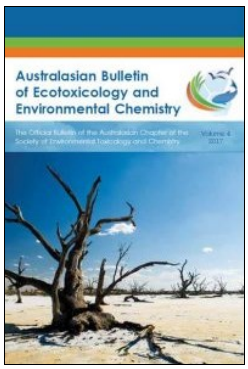
- Exposure to students as potential employees
- Give back to your professional community by sharing your insights and experience
- Stay on top of emerging science through engaging in research-based discussions with your mentee

How do I find out more?

For a Mentor Programme outline or a registration form, please contact Tom.Cresswell@ansto.gov.au

Click here for more information

Australasian Bulletin of Ecotoxicology and



Volume 4 of ABEEC has recently been published and is available here.

Comparison of the proposed ecosystem protection guideline values for diuron in fresh and marine ecosystems with existing trigger and protective concentration values
ABEEC Volume 4, 2017, Pages 1-12
Olivia King and Michael St.J. Warne

Call for papers

We invite all SETAC AU members to submit new manuscripts to the *Australasian Bulletin of Ecotoxicology and Environmental Chemistry.* The *Bulletin* is a publication of the Australasian Chapter of the Society for Environmental Toxicology and Chemistry (SETAC AU), and is a regional publication dedicated to publishing original, scientifically-sound research dealing with all aspects of ecotoxicology and environmental chemistry relevant to Australasia. Papers published may be research reports, review papers, short communications, descriptions of new techniques and equipment, thesis abstracts, thesis literature reviews and comments on previously published papers.

All papers published in ABEEC will be made freely available through the website for SETAC AU. It will be an online publication only.

This is how the submission process works. Contributions should be submitted to the editor as a manuscript in the same manner as you would for any other journal. You also need to provide the name(s) of at least one reviewer to assess the manuscript. All manuscripts will be sent out for review by at least two experts in the field. After the review process, manuscripts will be sent back to authors for final revisions prior to online publication.

If you wish to submit a manuscript to *ABEEC* or would like to discuss publication of a manuscript, then please contact the editor. A copy of *Instructions to authors* is also available from the editor.

We look forward to receiving you manuscripts.

Reinier M Mann (reinier.mann@dsiti.qld.gov.au)
Editor – *ABEEC*

SETAC Journal Highlights

Selected abstracts from the March 2017 issue of Environmental Toxicology and Chemistry

Wolf JC, Maack G. 2017 Evaluating the credibility of histopathology data in environmental endocrine toxicity studies, 36(3): 601–611 *DOI: 10.1002/etc.3695*

Abstract: Agencies responsible for environmental protection are tasked with developing regulatory guidance that is based on the best available scientific evidence. Histopathology is a common endpoint in toxicologic bioassays; however, because of the subjective nature of this endpoint, and the advanced level of specialized training required for its effective utilization, the reliability of histopathology data can be inconsistent. Consequently, mechanisms for evaluating such data on a case-by-case basis are needed. The purposes of the present review are to describe a methodology that can be used to evaluate the credibility of histopathology findings and to discuss the results of such assessments as applied to real-world data collected from the scientific literature. A key outcome of these efforts was the finding that only 54% of the studies examined contained histopathology data that were considered to be either highly credible or credible, whereas data in 46% of those studies were of equivocal, dubious, or no credibility. In addition, the results indicated that the quality of the data examined tended to decline during the past 15 yr. The ultimate goals of the present review are to draw attention to reliability issues that can affect histopathology results, provide recommendations to improve the quality of this endpoint, and suggest an approach for the expeditious and judicious use of histopathology data in the weight-of-evidence determinations required for hazard and/or risk assessment. This exercise was conducted initially as part of a SETAC Pellston Workshop™ entitled "Environmental Hazard and Risk Assessment Approaches for Endocrine-Active Chemicals (EHRA): Developing Technical Guidance Based on Case Studies to Support Decision Making" that was held in Pensacola, Florida (USA) from 31 January to 5 February 2016.

http://onlinelibrary.wiley.com/doi/10.1002/etc.3695/full **© *2017 SETAC***

Taylor AM, Edge KJ, Ubrihien RP, Maher WA. 2017. The freshwater bivalve *Corbicula australis* as a sentinel species for metal toxicity assessment: An in situ case study integrating chemical and biomarker analyses, 36(3): 709–719 *DOI: 10.1002/etc.3582*

Abstract: A weight of evidence approach in environmental assessment includes the use of biomonitor organisms to measure biologically available contaminant concentrations and lethal and sublethal responses in an exposure, dose, and response framework. *Corbicula australis* was assessed as a test species for metal toxicity using in situ river sediment exposures at 4 locations in the Molonglo River (New South Wales, Australia), which has a legacy of sediment metal contamination, following 8 decades of mining in its upper reaches. A sediment metal contamination gradient was evident from 12.5 km to 47 km downstream of the mine, as follows: zinc (851–130 mg/kg) > lead (104–7 mg/kg) > copper (31–5 mg/kg) > cadmium (2–0.3 mg/kg). Exposed *C. australis* accumulated the following metals in tissue: zinc (1358–236 µg/g) > copper (24–20 µg/g) > cadmium (4.7–0.7 µg/g) = lead (4.2–1.8 µg/g). Biomarker responses showed increased sublethal impairment with increased tissue metal concentrations. Total antioxidant capacity was mildly impaired, with corresponding increased lipid peroxidation and lysosomal membrane destabilization at the higher tissue metal concentrations. *Corbicula australis* proved to be an effective biomonitor organism for sediment metal assessment, as it is able to accumulate metals relative to sediment concentrations and showed a pattern of increased sublethal impairment with increased tissue metal concentration. It is recommended as a suitable species for incorporation into local freshwater monitoring and assessment programs.

http://onlinelibrary.wiley.com/doi/10.1002/etc.3582/full **© *2017 SETAC***

Membership Details

A Guide to Renewing SETAC AU Membership Online for SETAC AU Members

Background

The global society SETAC is subdivided into three Geographic Units (GUs), each of which is further subdivided into Chapters.

SETAC Australasia (SETAC AU) is a chapter of the Geographic Unit (GU) called SETAC Asia-Pacific, and comprises all members of SETAC resident in Australasia including Australia, New Zealand, Papua New Guinea, Norfolk Island, Fiji, etc. except members who normally reside elsewhere and are only resident in Australasia temporarily (less than 12 months).

On 1 October 2015, SETAC Asia-Pacific took control of its own membership administration. Previously this was managed in the SETAC North America office in USA. As a consequence, all membership renewal payments for SETAC members in Australasia since that date should be made to SETAC Asia-Pacific, and not to the SETAC North America office in USA.

Despite this, almost 25% of SETAC AU members still manage to pay their membership renewals to USA. This creates a number of administrative headaches, and also costs many members money in unnecessary credit card fees. Unfortunately, the SETAC website does allow this to happen if renewing members are not alert.

How will you know if your membership is due for renewal?

There are several clues:

- If it is close to 12 months from when you joined or last renewed, then your renewal date must be looming (unless you have paid for a 3 year membership).
- You have received a reminder email from the SETAC membership database. Note: you only get 3 reminders. After that, if you do not pay, your membership effectively ends.
- You cannot log in to the membership pages (applies for those who are very overdue for renewal payment).
- Registration at a SETAC event at member's rates is refused.

How to renew your membership

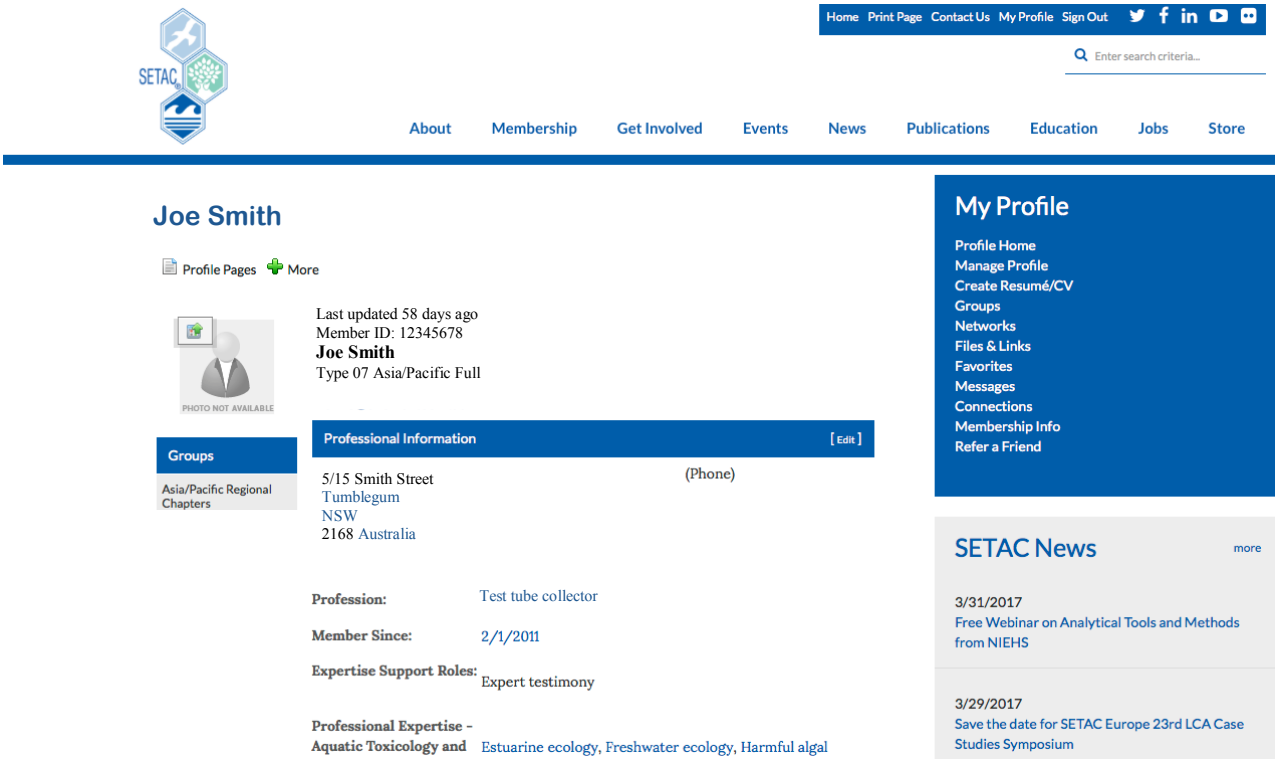
1. You must log in to your SETAC membership page using your username (usually your email address, unless you have changed username or email address) and password (which you chose when you joined SETAC, or have since changed). There is a link at log in for resetting your password using email. Note that reset may take up to 24 hours to respond and take effect.

   Usually, members reach their SETAC membership page using www.setac.org which gives full access to the SETAC site. However you MUST navigate to the SETAC Asia-Pacific payment page before entering any credit card information, or you are likely to end up paying the USA office.

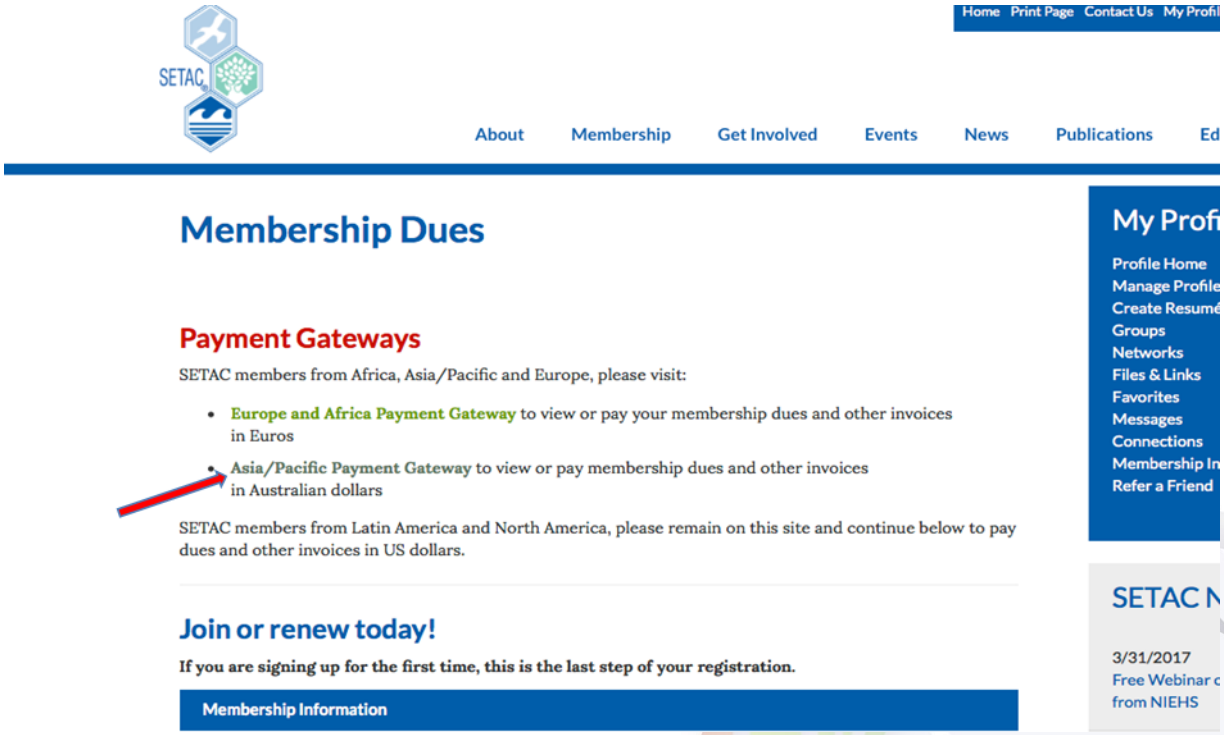
   A shortcut (if all you need to do is pay a membership renewal) is to go to https://setacap.site-ym.com and log in there.

Membership Details

2. This is what you should see if you successfully log into www.setac.org



3. If your membership renewal is overdue for payment, you may see a warning message on this page, with a link to "renew your membership now". This link should take you to the "payment gateways" page which looks like this:

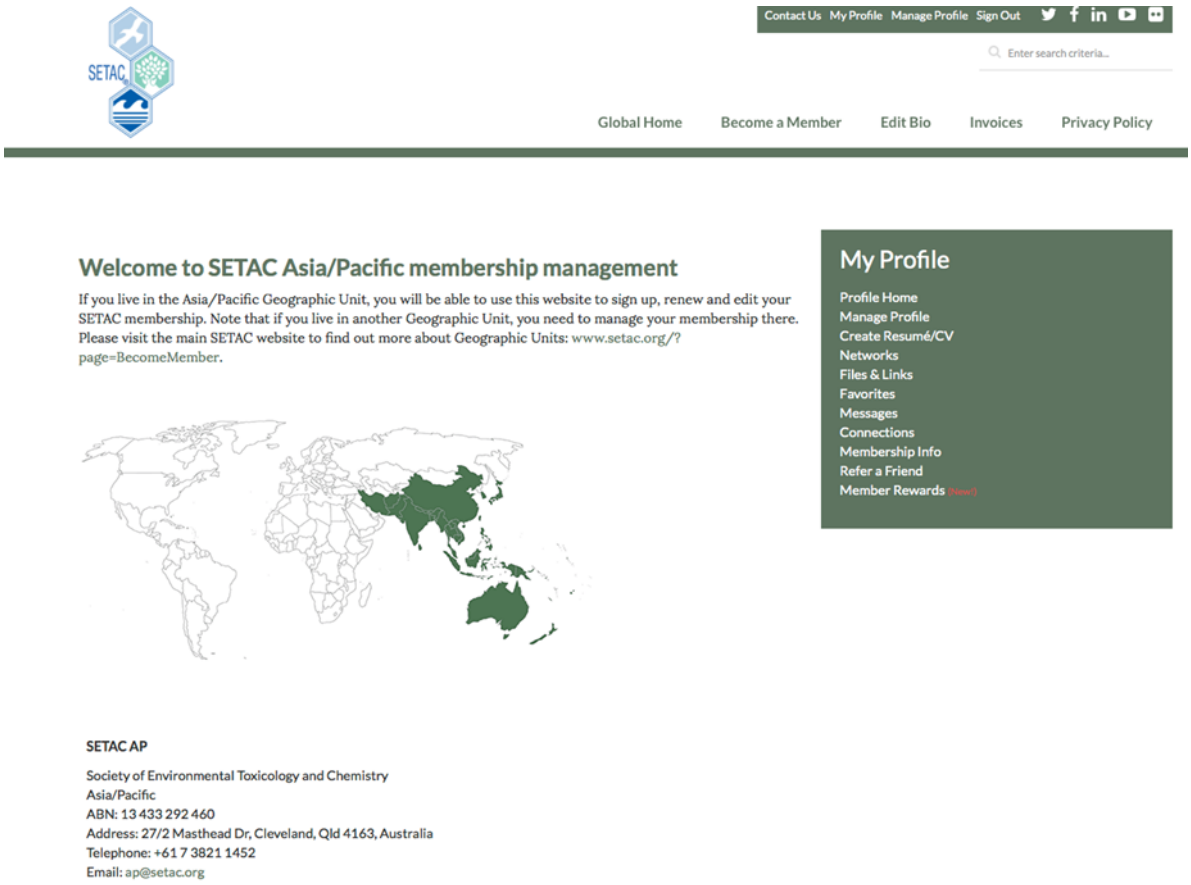


4. If your membership is not overdue yet, or there is no link to "renew your membership now" on the log in page, then click on "Membership" in the top line, or on "Membership Info" under "My Profile" to get to the Payment Gateway.

5. Once you reach the Payment Gateway you MUST click on "Asia/Pacific Payment Gateway" (see red arrow on previous figure).

Membership Details

6. The Asia/Pacific Payment Gateway looks like this:



(NOTE: if you do not see the words "SETAC Asia/Pacific" you are on the WRONG PAGE, and must go back).

7. Click on "Membership Info" in the "My Profile" menu, and you will be taken to the payment area.

8. **What happens in the payment area?**
You may see links allowing you to view and print "open" (unpaid) invoice, and links to "closed" (previously paid) invoices.
There is a link to pay a membership renewal. (Click on the link to start the payment process).

9. **The payment process**
- You must review and edit your contact details and other membership information on the "Edit My Member Profile" page. NOTE: the page MUST BE SAVED (even if you change nothing) or you cannot proceed further.
- You are given the option to change your membership payment type (for example from 1 year to 3 year payment.
- You complete your credit card details (only Visa or MasterCard is accepted).
- On successful completion you will get a receipt and a paid tax invoice.

10. Potential problems to look out for
- Make sure you can see "Asia/Pacific" on the payment page.
- Your payment amount will be $50 (student membership), or $180 (full membership), or $65/ $95/$130 (recent graduates by year from graduation), or $445 (3 years full membership), or $95 (senior active, and maternity leave membership). These amounts are Australian dollars.
- If you see $40, or $140, or $345, or $50/$75/$100, or $75 these are the USA membership rates in US dollars, and YOU ARE ON THE WRONG PAYMENT PAGE (stop and go back).
- If you get a receipt and invoice with the USA membership rate it means that you have

messed it up! Please try harder next year!!!

- If you see the SETAC USA address on your invoice or receipt it means that you have messed it up! Please try harder next year!!!
- If you have problems and need help (for example can't log in) do not contact the SETAC USA office. Your contact is the Asia-Pacific office using ap@setac.org)
- If you get stuck on the page for updating your contact details, it usually means something is incomplete. See the next section.

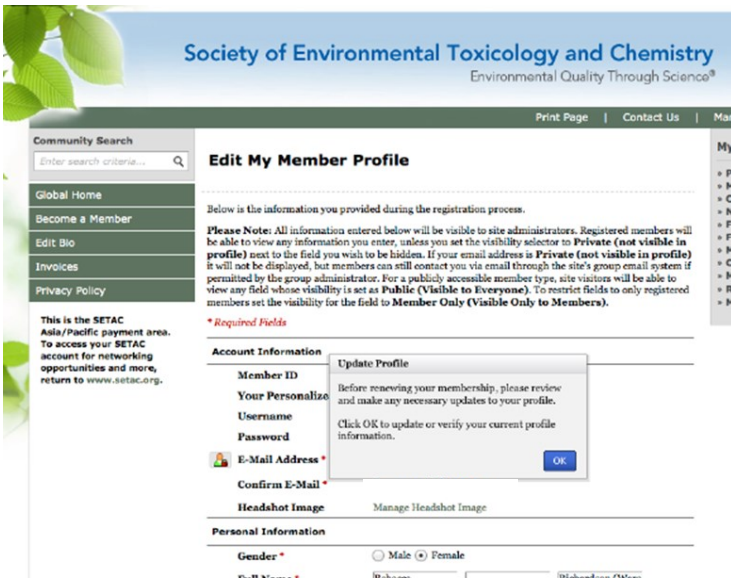
11. Common difficulties complete the 'Edit My Member Profile' Page

Note that ALL required fields must be completed, and the page must be saved before you are able to move on to make payment. This editing is required due to members forgetting to update information such as changed email addresses, and causing considerable waste of time for SETAC to re-establish contact.

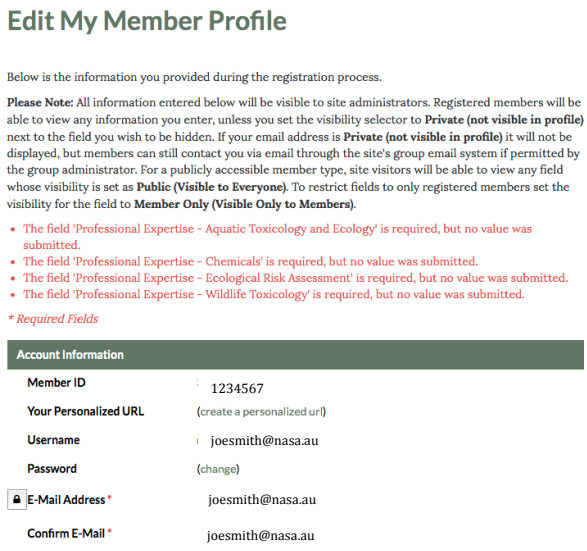
If you press "Save" but the system does not move on to the next step, it usually means you have left something incomplete. Errors and omissions are listed in red at the top of an incomplete page.

Note that the "expertise" fields must have an entry, even if it is "none".

Also, if any required field is not applicable to you, but the system insists on you completing it, put something in it (for example a random letter or numeral) so that you can save the page and move on.



Example of 'Edit My Membership Profile' page



Example of rejected 'Edit My Membership Profile' page

12. Will a simpler renewal system eventuate in due course?

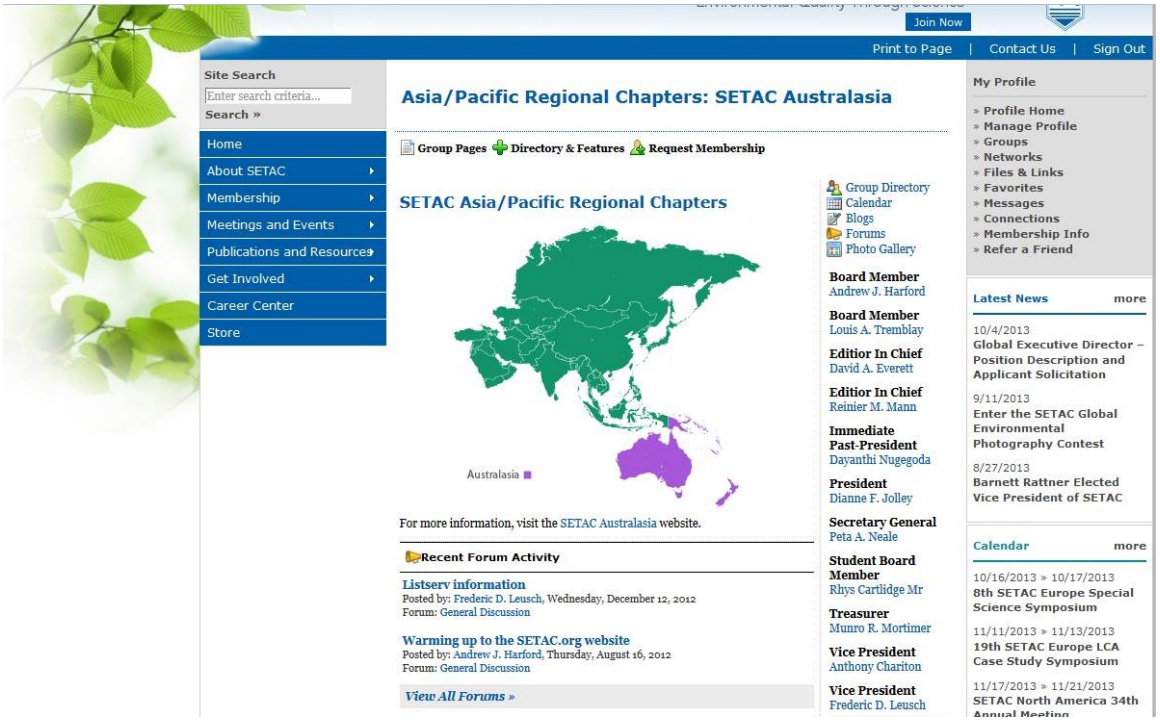
We appreciate that the system is over-complex, and this is being addressed. However a common global database serves SETAC's 6000+ membership covering multiple currencies and time zones. Changes need to meet the requirements of all sub groups and so changes need to be negotiated and accepted by all parties, and can only be implemented within the constraints of the software system used. Your patience is appreciated!

Munro Mortimer (ase@hydrobiology.biz), Treasurer

Membership Details

How to join SETAC Australasia

Even if you are a SETAC member based in Australia, New Zealand or PNG, you may not be a member of SETAC Australasia. You can join SETAC Australasia by going to http://www.setac.org/. After logging in, go to the SETAC Australasia page and click 'Request Membership' (see below). You can find this page by either searching 'Australasia' or going to the 'Get Involved' tab on the left of the page, then 'Regional Branches and Chapters', then 'Asia Pacific Chapters'. There are no additional fees attached to the SETAC Australasia chapter.



Current SETAC Australasia Members

To make sure you don't miss out on attending SETAC get-togethers in your state or territory or contributing your latest research to Endpoint, please update your SETAC profile to include your location so your regional rep can get in touch with you. You can do this by logging into http://www.setac.org/ and selecting 'Manage Profile', then 'Edit Bio'.

Kathryn Hassell (khassell@unimelb.edu.au)
SETAC AU Secretary

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TECObio Pty. Ltd. (www.tecobio.com)
Contact: britten@tecobio.com

Advertise in Endpoint

Do you or your organisation have a product, service or upcoming event that might be of interest to SETAC members? For example: technical services, vacant positions, meetings and workshops or student opportunities?

If so, you should consider advertising in Endpoint and on the SETAC AU webpage. The Endpoint newsletter goes out to a readership of >300 SETAC members across academia, industry and government, providing a great way to reach your target audiences.

Details

- Advertising charges for Endpoint AND the webpage are $100 half page, $200 per full page.
- A Standing Committee with membership determined by Council will vet (by majority vote) all adverts on the basis of appropriateness of material relative to the aims & objectives of SETAC AU.
- Sustaining Members are entitled to two pages of free advertising per annum.

For further information please contact the SETAC AU Secretary **Kathryn Hassell** (khassell@unimelb.edu.au)

Affiliate and Sustaining Memberships

Have you considered affiliate or sustaining membership or do you know an organisation that should? Affiliate memberships are suitable for not-for-profit organisations or academic institutions and sustaining memberships are suitable for for-profit organisations, government agencies, or individuals. They are cost effective means of covering membership and conference registrations as well as other benefits. Here are the details below:

1. **SETAC Global Partner** (see http://www.setac.org/?page=SETACPartners)

   Annual fee US$10,000

   Benefits:

   - Annually –

     Two complimentary full registrations at two SETAC meetings or conferences,

   OR

     A free booth at one SETAC meeting or conference.

   - Free listing as a Global Partner on SETAC meeting/conference signage and programs.
   - Free attendance at reception functions for SETAC meetings/conferences.
   - Free access to the SETAC Membership Directory.
   - Free hard and online versions of the SETAC Journals – *Environmental Toxicology and Chemistry (ET&C)* and *Integrated Environmental Assessment and Management (IEAM).*
   - Annual acknowledgement as a SETAC Global Partner in journals.
   - Listing as a SETAC Global Partner on SETAC website.
   - Free advertising (1/8 page annually in one journal).
   - Discount (25%) on-line job advertisements.
   - Access to online newsletters.
   - Members discount on publications.
   - SETAC Global Member Wall plaque.
   - Can help organise special sessions on global issues at annual meetings.
   - Acknowledgement for other assistance such as student grants, etc.

2. SETAC Asia-Pacific Sustaining Member

Annual fee AU$2000

- Annually –
- Two complimentary full registrations at one SETAC Asia-Pacific meeting or conference,

OR

Four complimentary student registrations at one SETAC Asia-Pacific meeting or conference,

OR

One complementary full registration and two student registrations at one SETAC Asia-Pacific meeting or conference.

- Free listing as a SETAC Asia-Pacific Sustaining Member on SETAC Asia-Pacific meeting/conference signage and programs.
- Free attendance at reception functions for SETAC Asia-Pacific meetings/ conferences.
- Free hard and online versions of the SETAC Journals – *Environmental Toxicology and Chemistry (ET&C)* and *Integrated Environmental Assessment and Management (IEAM).*
- Annual acknowledgement as a SETAC Asia-Pacific Sustaining Member in journals (subject to SETAC World Council approval).
- Listing as a SETAC Asia-Pacific Sustaining Member on the SETAC Asia-Pacific web pages.
- Free advertising (1/8 page annually in one journal, subject to SETAC World Council approval).
- SETAC Asia-Pacific Sustaining Member Wall plaque.
- Can help organise special sessions on regional/global issues at annual meetings.

Affiliate and Sustaining Memberships

3. SETAC Australasia Sustaining Member (only available to companies operating in Australasia)

Annual fee AU$1500

- Annually –
- Two complimentary full registrations at one SETAC Australasia meeting or conference,

OR

Four complimentary student registrations at one SETAC Australasia meeting or conference,

OR

One complementary full registration and two student registrations at one SETAC Australasia meeting or conference.

- Free listing as a SETAC Australasia Sustaining Member on SETAC Australasia meeting/conference signage and programs.
- Free attendance at reception functions for SETAC Australasia meetings/conferences.
- Free access to the SETAC Australasia Membership Directory.
- Free hard and online versions of the SETAC Australasia publications.
- Annual acknowledgement as a SETAC Australasia Sustaining Member in SETAC Australasia publications.
- Listing as a SETAC Australasia Sustaining Member on the SETAC Australasia web pages.
- Free advertising in SETAC Australasia publications (subject to SETAC Australasia Council approval).
- SETAC Australasia Sustaining Member Certificate.
- Acknowledgment for other assistance such as student grants etc.

To follow up with these membership options please email me at khassell@unimelb.edu.au and also pass this information on to anyone or any organisation you think might be interested. Remember we now represent ecotoxicology and environmental chemistry.

Kathryn Hassell (khassell@unimelb.edu.au)
SETAC AU Secretary

SETAC AU

Council Members

Position	Elected Member
President	Anthony Chariton (anthony.chariton@mq.edu.au)
Vice Presidents	Andrew Harford (andrew.harford@environment.gov.au) Tom Creswell (tom.cresswell@ansto.gov.au)
Secretary	Kathryn Hassell (khassell@unimelb.edu.au)
Treasurer	Munro Mortimer (ase@hydrobiology.biz)
Membership Officer	Chantal Lanctôt (chantal.lanctot@gmail.com)
Bulletin Editor	Reinier Mann (reinier.mann@dsiti.qld.gov.au)
Communications Officer	Peta Neale (p.neale@griffith.edu.au)
Strategic Directions Officer	Katelyn Edge (katelyn.edge@environment.nsw.gov.au)
Associate Newsletter Editor	Erik Prochazka (e.prochazka@griffith.edu.au)
Student Representative	Aus: Francesca Gissi (Francesca.Gissi@csiro.au) NZ: Nicole McRae (nicole.mcrae@pg.canterbury.ac.nz)

Regional Representatives

Region	Elected Member
Australian Capital Territory	Ben Kefford (ben.kefford@canberra.edu.au)
New South Wales	Lisa Golding (lisa.golding@csiro.au)
Northern Territory	Melanie Trenfield (melanie.trenfield@environment.gov.au)
Queensland	Steven Melvin (s.melvin@griffith.edu.au)
South Australia	Peter Bain (peter.bain@csiro.au)
Tasmania	Cath King (cath.king@aad.gov.au)
Victoria	Minna Saaristo (minna.saaristo@monash.edu)
Western Australia	Tristan Stringer (tristan.stringer@intertek.com)
Papua New Guinea	Kundo Hundang (guba.hundang@gmail.com)
New Zealand (North Island)	Trudy Geoghegan (trudy.geoghegan@epa.govt.nz)
New Zealand (South Island)	Sally Gaw (sally.gaw@canterbury.ac.nz)