

May 21, 2018

Welcome from Phil Watson, OFFshore ITRH Director

Two months have passed since the last update – and what a busy period!

Late March saw a strong delegation from the OFFshore Hub attend OTC Asia in KL, Malaysia. In a sign that the oil & gas industry is well into recovery mode, the conference exhibition and technical presentation program were very well attended. The Hub entered a team in the OTC Asia university challenge and while we didn't win, it was a great opportunity to engage with some key industry partners and identify some additional areas for research that may be pursued.

March also saw a number of Hub researchers visit Albany to participate in community engagement around the Albany Wave Energy Research Centre. This initiative is pioneering how we generate energy from the oceans, and has a strong overlap with Hub research.



I recently had the pleasure of attending both the ARC Major Investments Forum (Canberra) and the annual OTC conference (Houston). The former was a great opportunity to engage with peers who are leading other Research Hubs, Training Centres, Centres of Excellence and Special Research Initiatives. Like the event in KL, OTC was filled with optimism for a recovering global oil & gas market while also providing a great opportunity to mix with both peer and partner teams. Numerous actions were identified that will be followed up in coming weeks, creating value for both Hub partners and researchers.

In the coming month we will undertake a full review of our 'Impact Deck of Cards' both to revisit progress and milestones, and to identify new value that has materialised as the Hub has grown. We will also make progress with our PhD student training program. Importantly, May will also see the next meeting of the Hub Advisory Board and, as always, we look forward to their guidance and input.

Engagement with industry is critical to the success of the Offshore Hub and we welcome feedback and suggestions related to our activities.

Hub News

New Members of the OFFshore Hub

The OFFShore ITRH has been humming along recently with a new wave of PhD students. Among those welcomed into the fold are [Ci Wang](#), a member of the Project 4 project stream. She is researching whole life response and capacity of anchors, with an emphasis on experimental field testing.

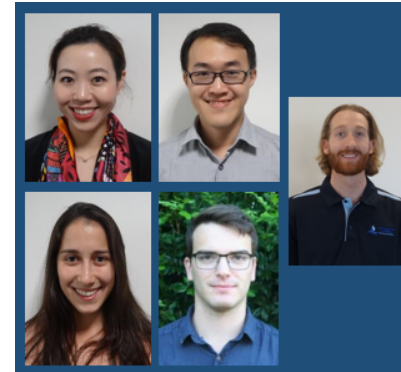
[Shaun Yap](#) also of Project 4, has begun studying the coupled response of an embedded mooring chain and plate anchor, with a view to unlocking the hidden capacity of the embedded chain which will allow for smaller and more cost effective anchors.

[Mariajose Guevera](#), recently arrived from Venezuela, will be researching potential improvements to estimates of conductor fatigue life by considering the whole-life response of the surrounding soil as part of the Project 3 team.

[Alain Bartels](#) of Project 5, is investigating the use of soft sensors to increase the reliability of sensor data and hence reduce the associated maintenance costs by re-calibrating on-demand rather than following a fixed schedule.

Project 5 has also welcomed a new short-term Research Associate (RA), [Andrew Manderson](#), who is working with RA [Matt Rayson](#) of Project 1 on integrating uncertainty into predictions of solitons, which will allow for the development of an early warning system.

This represents a significant boost to the research powerhouse which is the OFFshore ITRH. We look forward to tracking their journey over the coming years.



Conferences & Forums

Offshore Technology Conference 2018 – Celebrating 50 Years of OTC

OFFshore ITRH Director Phil Watson recently traveled to Houston on an annual pilgrimage to the [Offshore Technology Conference](#) (OTC) – the largest oil & gas conference in the world, and a hub for cross industry engagement. In addition to attending the conference, he used the time for extensive engagement with Shell on OFFshore Hub and Shell Chair activities, and to engage with other current (or future!) collaborators such as ExxonMobil, BP and Chevron. He chaired a meeting of ISSMGE TC209, and attended a meeting of the ISO WG10 / API RG7 joint committee – with both committees related to offshore geotechnics.



UWA was well represented at the conference with papers from OFFshore ITRH members James Doherty, David White and Wenhua Zhao being presented, in addition to that of Eric May from the [ACLNGF](#). Many members of our industry partner organisations were also in attendance.

Since 1969, OTC has brought energy sector pioneers together to discuss offshore's evolution and to experience ground breaking innovations in one place, at one time.

This year's technical program offered key insights by global experts on technological advances, safety, and environmentally focused solutions, and economic and regulatory impacts. International participants met to exchange ideas and opinions to advance scientific and technical knowledge for offshore resources and environmental matters.

2018 ARC Major Investments Forum

OFFshore ITRH Director Prof Phil Watson and Manager Dr Andrew Grime recently attended the [2018 ARC Major Investments Forum](#) in Canberra. The purpose of this annual event is to showcase the research underway in the various ARC large investment initiatives and acquire lessons learned from other groups on how to improve the running of the various large investments. The ARC large investment initiatives are comprised of Special Research Initiatives, Centres of Excellence and Research Hubs/ Training Centres, which form part of the Industry Transformation Program.



Phil Watson was given the opportunity to showcase some of the great work underway in the OFFshore ITRH, with a strong emphasis on the realized and potential impact of our broad program of works.

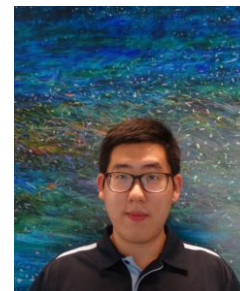
Andrew Grime attended a day long workshop at which the Chief Operating Officers/ Managers of the large investments shared knowledge on training opportunities for members, how to increase budget agility to allow focus on high impact activities, and ways to measure industry impact resulting from translation of research outputs.

Liz Visser of the Australian Research Council shared valuable insights into what a successful investment looks like during the establishment, review/operation and translation/ wind-up stages of its life. It is encouraging to see that the OFFshore ITRH is tracking well after only two of five years.

This event was a great success and we look forward to the 2019 forum where we'll be given the opportunity to re-engage with contacts and share an update in our research progress.

PhD Student Spotlight

Yankun Gong is one of the PhD students in the Project 1: Metocean Hazards from Solitons project stream. Yankun's research is looking at how to more accurately predict non-linear internal waves in order to quantify their intensity and hence their impact on the behaviour of offshore floating systems. He is working with our industry partners to characterise the generation, propagation, and dissipation of internal tides and solitons. This will lead to improved predictions of internal wave dynamics in the offshore Pilbara region, including the North West Shelf.



“I’ve used the 3D MITgcm model to predict internal tide dynamics and discover how remote waves contribute to locally generated internal tides. I am validating the accuracy of the model against 30 moorings deployed on the continental shelf. 2D idealised simulations will then simplify and explain the effect of remote waves.”

The ability to more accurately predict internal waves will impact the future design of offshore floating facilities in this region, leading to structures which are better able to cope with extreme weather conditions. Existing facilities may also benefit from improved prediction models via enhanced operability and safety measures.

Yankun is an active participant in the OFFshore ITRH [mentoring program](#). For further details, please refer to Yankun's [profile page](#).

Publications

Interested in learning more about our work? Below is a list of some of our more recent publications. A full list of our publications can be found [here](#). To request a PDF version please [contact us](#).



- Heyward, A., Colquhoun, J., Cripps, E., McCorry, D., Stowe, M., Redford, B., Miller, I., Miller, K., Battershill, C. (2018) [No evidence of damage to the soft tissue or skeletal integrity of mesophotic corals exposed to a 3D marine seismic survey](#). Marine Pollution Bulletin, Volume 129, Issue 1, April 2018, Pages 8-13
- Zhao, W., Milne, I.A., Efthymiou, M., Wolgamot, H. A., Draper, S., Taylor, P.H., Eatock Taylor, R. (2018) [Current practice and research directions in hydrodynamics for FLNG-side-by-side offloading](#). Ocean Engineering 158, Pages 99-110

- Zhao, W., Taylor, P.H., Wolgamot, H., Eatock Taylor, R. (2018) [Linear viscous damping in random wave excited gap resonance at laboratory scale — NewWave analysis and reciprocity](#). Journal of Fluids and Structures. Volume 80, July 2018, Pages 59-76
- Stanier, S.A., White, D.J. (2018) [Enhancement of bearing capacity from consolidation: due to changing strength or failure mechanism?](#) Géotechnique. ISSN 0016-8505 | E-ISSN 1751-7656
- Zhao, W., Pan, Z., Lin, F., Li, B., Taylor, P., Efthymiou, M. (2018) [Estimation of gap resonance relevant to side-by-side offloading](#). Ocean Engineering 153, Pages 1-9
- Wolgamot, H., Chua, K.H., Feng, X., Li, B., Zhao, W. (2018) [Resonant Fluid Motion in the Narrow Gap between FLNG and LNG Carrier](#). Proceedings of the Offshore Technology Conference (OTC) Asia 28261

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