



Society for
Underwater
Technology

Annual Report

2018-2019



Society for Underwater Technology Annual Report 2018-2019

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President's Foreword



President: Ralph Rayner

Over the past twelve months the Society has been engaged in a review of its activities with the aim of ensuring they meet the changing needs of individual and corporate members.

This review has been driven by recognition of the changes that are taking place in the use of the ocean and ocean resources, and the science & technology needed to support them. Examples are the rapid growth of the offshore wind energy and aquaculture industries. Equally rapid has been the emergence of new technologies, such as robotics and the application of machine learning, which are leading to new ways of addressing the needs of those who operate on, within and under the ocean. It is vital that the Society embraces the future direction of the community that it serves, at the same time as continuing to meet the needs of established areas such as offshore oil and gas.

The ongoing review is considering all aspects of the Society's activities, from branch structure, through special interests groups to events and training. In all of these areas, the question that is being asked is how best can the Society deliver benefits to members and prospective members.

In conducting the review, the Society has recognised the need to collaborate with like-minded organisations with complimentary activities. In this regard the signature of a Memorandum of Agreement with the Marine Technology Society, under which SUT and MTS will work together for the benefit of their collective membership, is a welcome step. SUT and MTS have similar missions, similar numbers of individual and corporate members and complimentary geographical reach. Given so much common ground, the logic of coordinating our efforts is compelling.

One of the first areas of collaboration with MTS is the launch of a professional accreditation scheme aimed at providing members with a route to formal recognition and certification of their professional standing. In the coming few months, a pilot programme for an initial cadre of candidates from both societies will facilitate the development of the processes and procedures needed to administer professional accreditation. On completion of the pilot, the scheme will be opened to all suitably qualified and experienced members as a route to chartered status and recognition of continuing professional development.

The provision of specialist training courses has long been an important feature of the Society's work. A further aspect of the review process is the investigation of new training course opportunities to meet emerging needs. As a result the Society is developing a new course tailored to the needs of the offshore wind sector.

These are just a few of the exciting new developments taking place across your Society. I would encourage your full engagement in these and other initiatives. It is only through the active participation of our individual and corporate members that SUT can fulfil its role as a learned society supporting a vibrant marine science and technology community. You all have a part to play. It may be in serving on a Society committee or organising branch events. It could be through helping with a Society conference or training programme. Most importantly, we must all continue to work to engage young people to join the ocean science and technology community and play their role in determining our ocean future.

Awards 2018-2019



Awards at the AGM 2018: (L-R): Peter French, Peter Metcalf, Adrian Phillips, Michael Fellows

New Fellows

Frank Lim
Adrian Phillips
Michael Williams
Paul Williams

Hon Fellows

Peter Metcalf



Awarded at All-Energy 2019:
John Sharp presents the Lennard Senior prize to Andrew Scott

President's Award

Awarded to Peter French in recognition of the extensive contribution he has made to underwater technology and the underwater industry during his career.

Houlder Cup for the Best Contribution to Underwater Operations

Awarded to Michael Fellows, for his outstanding contribution in the field of surface and subsea bomb and mine location and disposal as a Royal Navy Clearance Diver.

Lennard-Senior Memorial Prize

This award is conferred upon Andrew Scott in recognition of outstanding individual achievement in the field of Marine Renewable Energy.

SUT Oceanography Award

Awarded to Stephen de Mora for his outstanding contribution to the field of oceanography.

Council's Summary of Activity

2018-2019

Membership

The total individual membership has shown a steady year on year slow decrease as the number of members who retire from industry exceeds the new entrants. We're working with the Business Development Group to turn this around, by reaching out to new sectors, growing the overseas membership, and looking at how the arrival of Professional Accreditation will act as an incentive for individuals, and possibly some companies, to join or rejoin the SUT.

Corporate Membership has remained at a similar level to last year, with only a few not renewing as they ramp down operations in the North Sea, but we're still not seeing a significant rate of new membership from companies outside our traditional core. To address this we are working on ensuring that we have better defined corporate member benefits, particularly growing the number & variety of training courses we can offer, and having them priced at a level where membership 'pays for itself' for companies who opt to join rather than send employees on courses at the non-member's rate.

Other Societies have shown increases in membership by introduction of new categories of Associate & Student membership, all of these options will be looked at for the new year.

Finance

A summary of the financial result for the Unrestricted Fund for this year is compared with that for the previous year in Table 2.

The Unrestricted Fund at 30 June 2019 amounted to £310,758 compared with an amount of £379,385 at the end of the previous year, allowing for gains on investments.

Educational Support Fund

A report for the year ending 30 June 2019 from the Educational Support Fund Management is included in this Annual Report. There has been a restatement of the comparatives following a review of the value of the fund which concluded that the only funds remaining were from transfers out of the general fund which meant that the Educational Support Fund was no-longer restricted. It was reclassified as designated as at 30 June 2018 and transferred back into General Funds.

Membership Summary

Corporate Members 150

Individual Membership 1767

Category	2019	2018
Hon. Fellows	17	17
Fellows	105	102
Full members	724	744
Students	120	154
Corporate individuals	801	832
Total	1767	1849

Table 1

Financial Summary

Unrestricted Fund (£)

Category	2019	2018
Income	317,127	644,668
Expenditure	402,768	646,953
Surplus/ (deficit)	(85,641)	2,285
Transfers to restricted fund	-	-
Gain/(loss) on investments	17,014	11,991
Retained surplus/ (deficit)	(68,627)	9,706

Table 2

D. Brookes
Honorary Secretary
24 October 2019
Registered Office: 2 John Street, London, WC1N 2ES, UK

Chair's Report

This is my first report having taken over the chair from Peter Metcalf at the 2018 AGM, before looking back over the year I would like to remember Chris Milner who passed away after a short illness in July this year. Chris was an active supporter of the SUT taking a number of roles in the Aberdeen branch including chairman, and was also a current SUT council member. As a small tribute to Chris and his work the Society will be making a special award from the Educational Support Fund (ESF) in his name to a student from Scotland.

In his final report Peter described last year as one of consolidation. For me this year has been one where we have started to move forward again after the pause caused by the resetting of the oil and gas prices in 2015/16. Without last year's additional revenue brought in from the OSIG conference we will finish the year with a deficit which, while disappointing, is in-line with expectations. With the reductions in costs achieved in previous years now embedded the focus of Council work this year has been on building on existing and identifying new sources of income. An important part of which is enhancing the value of SUT membership for both individuals and corporate members. One example is the agreed scheme with the IMarEST which allows the SUT to offer members a route to professional accreditation not open to them directly through chartered institutions. Externally the reputation of the Society continues to grow with an invitation to contribute to the United Nations decade of ocean science for sustainable development.

Before moving on I would like to offer my and council's thanks to Steve Hall and all the SUT staff working in UK, Perth and Houston for their continuing hard work to support the running and future development of the Society.

Finance

The 2018/19 financial outcome is a deficit of £68,627. While no one wants to see a deficit it is important to note that the previous year's figures were greatly supported by income from the previously mentioned 2017 OSIG conference. On the positive side we have seen increased income from subsea awareness courses and further cost efficiencies across the Society. Based on advice from our auditors we have restructured the Society's reserves into a single 'unrestricted' fund. The ESF which had previously been narrated as 'restricted' now being shown as a 'designated' sum within the single reserve figure. This will provide for some limited savings but more importantly ease the process of managing cash flow. In total this year we have made ESF awards totalling £10.6K and the current retained reserves are £305K. More detailed information can be found in the consolidated Society accounts which follow later in the annual report.

The Society is still seeing a declining trend in both individual membership and corporate memberships, however, with initiatives to reverse this trend now put in place it is hoped we will start to see a positive change in the coming year. Council continues to monitor both individual and corporate fees but at the time of writing there are no plans to increase membership cost in the coming year.

As mentioned above we have seen an increase in revenue from subsea awareness courses and while we do not expect the number of courses to return to previous levels it is a positive movement we should celebrate. Income from other areas including publications has remained largely static.



David Saul

Chair's Report

contd.

Council

Recognising that the continued high-level of council focus on Society finance was starting to impact the wider work of council, a dedicated business development sub-committee was setup in January. The remit of this committee, which meets monthly, is to look for and implement new areas of income for the SUT. Some areas that have been progressed by this group have been to instigate a patronage scheme, reduce external audit costs through a simplified reporting process, and adoption of a more structured approach to attendance at external events to maximise value. Longer term I have started a wider review of the SUT business. This was originally planned in 2015 but was put on hold in part due to the more immediate need to address the Societies finances but also to give Steve time to settle into the CEO role. This will be a wide-ranging organisation-wide review to:

- identify gaps and inefficiencies,
- identify potential areas for streamlining processes and business opportunities,
- examine which processes and activities are not required or are not producing what they should, and
- ensure we are well positioned for the future.

The review is currently ongoing, with the final report due to be with Council in spring 2020.

Training

The provision of high-quality training courses continues to be a key element of the Society's work. As earlier reported, we have seen an increase in the numbers wanting to take the SUTs UK subsea awareness course. My thanks go to the Jacqui Adams and the Aberdeen committee for their work in being able to meet this additional demand. In other areas work is ongoing to leverage the Society's extensive bank of knowledge to create a new family of training courses, the first of which will focus on the offshore wind energy market.

External relationships

During the year council have progressed to important relationships, firstly with the Marine Technology Society (MTS) where we have agreed to coordinate activities and where mutually beneficial develop joint initiatives. Secondly, we have concluded an agreement with the Institute of Marine Engineering, Science & Technology (IMarEST) which will offer, for first time, professional accreditation routes for members directly through the Society.

Special Interest Groups

During the year Council reviewed the work and make-up of the Society's various Special Interest Groups (SIGs). Outputs from this review included creating a new group covering defence, closing two groups (Underwater Science & Ocean Resources) where there had been no activity for some time, and splitting up training from education, forming two separate groups. Council is currently looking at the potential to re-launch these revised remits. Because of the nature of the defence group its membership is by invitation only, for more information please contact Steve directly.

Branches

The Society continues to benefit from an active UK and International Branch network. Over the last year the various branches have been responsible for bringing in the majority of new Society members. Globally and in the UK we are continuing to see interest in new branches and I would particularly recognise the work of Adrian Phillips in setting up the new Middle East branch.

Officers and Council 2018-2019

President

Prof Ralph Rayner

Chair

David Saul

Immediate Past President

Dr David Kirkley

Honorary Secretary

David Brookes

Honorary Treasurer

Mick Cook

Secretary to Council/CEO

Steve Hall

Members

Dave Baker

Andy Barwise

Richard Binks

Andrew Connolly

Chris Curran

Ray Farrier

Rex Hubbard

Sue John

Steve Johnson

Iain Knight

Richard Luff

Zenon

Medina-Cetina

Chris Milner

SUT Staff

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Chief Executive

Steve Hall

Membership & Finance Officer

Jane Hinton

Publications Officer

Emily Boddy

Journal Officer

Elaine Azzopardi

Administrative Secretary

Cheryl Ince

Events Manager

Jacqui Adams

Administration & Events Assistant

Lisa Clubb

Communications Coordinator

Araceli Lopez

Events Coordinator

Patsy Rhymes

Perth Branch Manager

Jennifer Maninin

Finance/Membership Administrator

Fiona Allan

Events & Marketing Coordinator

Patricia Slapp



Aberdeen Branch

www.sut.org/branch/aberdeen



We have reached the end of the Society's financial year (2018 – 2019) which marked more change for the positive this time. I think we have all seen a slower than expected market recovery and I hope things will turn into a more positive note for the whole community, operators and suppliers alike.

I took the Chairman role in September last year from Martin Harley who did a wonderful job in his time as acting Chair and continues to support the organisation as Vice Chair; I wish to sincerely thank Martin for all his efforts. Another massive "Thank You" goes to Jacqui Adams who has coordinated all SUT events in a very efficient and professional way.

Before I look back at our calendar of events, I would like to take this opportunity to say a huge "Thank You" to our Aberdeen SUT Branch Sponsors, BHGE, and OneSubsea – we would not have been able to develop the range of activities and events without their generous support and commitment.

Despite the still fragile recovery of the oil and gas industry, here in the Aberdeen Branch Committee we should be rightly proud of the programme we did manage to field in the past 12-months which included:

Three Subsea Awareness Courses; November 2018, March and May 2019, which demonstrates a return of companies into investing in their people. The feedback received by the delegates has been excellent throughout, showing the value of the course.

The Schools Christmas Lecture at the end of November 2018, very well attended and organised by our sub-committee; always a success that shows the variety of the underwater world to the future generations and to the education community.

Our AGM in December 2018 at the Marcliffe at Pitfodels was well received and enjoyed by all attendees. The numbers were slightly lower compared to previous years, probably a combination of company mergers as well as reduced spending. I hope 2019 will see more companies taking tables again and join us for a great evening.

The Business Breakfast and Networking morning at the Marcliffe in late January 2019, was popular as usual with three excellent presentations delivered to highlight the market situation, decommissioning and regulatory themes.

We managed to deliver five Evening Meetings in the year, with successful events on themes like diving, automation and another very interesting. "Question Time" in March 2019 with expert views and opinions from private equity backed operators, answering members submitted questions. Having run Question Time twice successfully now, we intend to run a third in 2020.

- September 2018 – Gadgets and Widgets
- October 2018 - Subsea Optimisation and Maximising Efficiency (Salvage & UXO was 2019)
- November 2018 – New Underwater Tooling and Technologies
- February 2019 – Diving
- March – Question Time

During our break from delivering evening meetings in late 2018, we joined forces with The Hydrographic Society of Scotland and IMCA (The International Marine Contractors Association) to devise and deliver a joint event on "Adapting to the Digital Future: The subsea industry in 20 Years".



Daniele Petrone

Committee

Chair Daniele Petrone
Vice-Chair Martin Harley
Treasurer
Gordon Drummond

Keith Anderson
Paul Benstead
Peter Blake
Andrew Connelly
Patrick Duggan
Campbell Elder
Dr Ibiye Iyalla
Tony Laing
Andy MacNamara
Jim Mann
Katrina McWilliam
Kilian Palop
Ekaterina Pavlovskaja

Aberdeen Branch

contd.

In March 2019 the SUT was involved with several other local organisations working collectively to prepare and deliver the conference with “NASA in Aberdeen – inspiring the next generation”. The SUT is scheduled to take an even more prominent role in delivering this important event in 2019, so watch this space.

Finally; to round off our year, the annual SUT Aberdeen Golf Day took place at Peterculter Golf Club on 27 June where members and colleagues enjoyed a great day out on this challenging course, in brilliant weather.

Overall, we can be proud of our record and efforts during the past year

Aberdeen Committee

Our committee member numbers have remained stable, although several changes in the people continued to happen this year; I would like to thank the individuals that make up our committee but also their parent companies for allowing their participation. Jacqui Adams our Events Manager has performed superbly under difficult circumstances and, I could not have completed my duties without the fantastic contribution of our Vice-Chair Martin Harley of Chrysaor.

Unfortunately, during the summer break, we had the sad news of Chris Milner’s untimely passing; Chris was SUT council member, ex-Chairman of the Aberdeen branch and very active member of the society and of the industry as well. Our thoughts are with his family and he will be sorely missed.

Also recently, John Lawson passed away; he was very close to the Society and one of the regular and indeed a founder presenter at our Subsea Awareness Course; we will all miss John’s experience and approach.

SUT+

In addition to our regular committee, we also have an SUT+ committee in Aberdeen, consisting of new industry entrants, whether junior or going through a mid-career transition. The enthusiasm coming from the SUT+ has never been less than impressive and they frequently augment the regular committee events as well as running their own which have included chartership seminars, vessel and drilling rig visits, which are educational and free to attend.

Training Courses

The Subsea Awareness Course is probably the longest continuously running training course related to underwater operations in the industry. It’s something we are proud of here in Aberdeen, and the last year benefitted from the recently revised course material that now is presented to the delegates on tablet. Our presenters, busy oil and gas individuals who give their time freely, deserve a special mention for maintaining the high profile and reputation this course enjoys.

As mentioned earlier we have seen an increase of uptake in the course this past year with three sessions run, all very well attended. Over the coming year we are hopeful, given the improving conditions in the industry, that we can re-activate one or two of our short 1- and 2-day courses.

As the downturn is slowly coming to an end, we hope that the next year will bring renewed attention to our courses and especially evening events. We have all worked hard to deliver a full year of events and training and I hope that now we will start again to see higher attendance to all our events.

Australia Perth/Melbourne Branch

www.sut.org/branch/perth



With the improvement in the local subsea market conditions SUT Perth has had a more successful year in 2018/19 with more attendees on our courses; continued strong sponsorship support for events and only a slight decline in membership revenue. The local committee has continued to work hard to manage its costs and at the same time provide a quality service to its local membership.

We have continued in line with our strategy set in 2017 with:

- Our joint mentoring programme enabling several events being held during the 2018/2019 year;
- Our Course Sub-committee finalising the short form course format with the expectation that it will be able to be run in Q2 of the 2019/2020 year; and
- Industry Diversification with several talks being held with the Submarine Institute of Australia; and the Royal Australian Navy being involved in our June 2019 Evening Technical Meeting (ETM).

Perth Branch Committee

Committee members continue to provide enthusiastic, imaginative and creative support to the branch bringing in a fresh outlook with great ideas. We would like to thank all committee members for their efforts in enabling us to reach our goals. We are indebted to the 2018 and 2019 committee, and in particular wish to express our thanks to retiring committee members (noted with an * in adjacent list) who gave very generously their time, knowledge and support.

A special thanks to Chris Saunders (2017 & 2018 Chairman) for all of his efforts and a very warm and official welcome to Rex Hubbard (2019 Chairman).

A modest rotation of committee members brings in fresh ideas and enthusiasm which are essential to maintaining a vibrant society; however it also allows us to retain a core of experience to ensure continuity of overall vision.

Current Perth Branch Sub-Committees: (bold indicating sub-committee lead)

- Advertising: **Terry Griffiths**, Ben Stangoni, Jaepel Oh & Patricia Slapp.
- Annual Dinner: **Jatin Lodhia (left July '19)**, Sarah Elkhatib, Nick McNaughton and Patricia Slapp.
- AOG 2019: Terry Griffiths, Ali Mazaheri, Liam Moore, Jennifer Maninin, **Julie Morgan**, Diederick Naude, Chris Saunders, Eric Jas & Hema Wadhwa.
- AUT 2019 Conference: Shuhong Chai, Steve Duffield, Ian Hobbs, Pat Fournier, Nick Lake, Jennifer Maninin, Graeme Moya, Brendan Reid, Anuag Saxena, Chris Saunders, Peter Wademan, Phil Wells and **Stuart Higgins**.
- Courses: Leanne Geneve, Pawan Gupta, Jennifer Maninin, **Nick McNaughton**, Matt Moore, Allan Devlin, Ian Wilson and Chris Saunders.
- Engagement: Paul Farquharson, **Leanne Geneve**, Pawan Gupta, Brian Wardlaw, Jennifer Maninin and Jason Hughes.
- Evening Technical Meeting/AGM: **Paul Farquharson**, Mark Casey, Ben Stangoni, Hema Wadhwa, Barry Walsh, Jen Maninin, Patricia Slapp and Stuart Higgins.
- Finance: Fiona Allan, Sarah Elkhatib, Rex Hubbard, Jennifer Maninin, Mark Casey and Nick McNaughton



Rex Hubbard

Committee

Chair Rex Hubbard
Vice Chair Mark Casey
Secretary
Nick McNaughton
Treasurer Sarah Elkhatib
2016 Secretary Ian Wilson

Paul Farquharson
Terry Griffiths
Pawan Gupta
Stuart Higgins (*new in 2019*)
Jatin Lodhia (*new in 2019 but left in July 2019*)
James Martin *
Matthew Moore
Julie Morgan
Norman O'Rourke *
Bukkie Orugun (*new in 2019*)
Chris Saunders *
Ben Stangoni (*new in 2019*)
Paul Upjohn *
Hema Wadhwa
Ian Wilson *

Australia Branch

contd.

- Golf Day: **Brian Wardlaw**, Dave Flanery, Jason Hughes, Jaepeel Oh, Brendan Reid, Barry Walsh, Jack Harfoushian, Mark Sheppard, Patricia Slapp and Dan Pickering.
- Membership: Fiona Allan, **Terry Griffiths**, Paul Farquharson, Brian Wardlaw.
- Mentoring: **Mark Casey**, Matt Moore, Arvind Chetty, Partha Dev, Claudio Pellegrini, Maud Kay, Kate McCarthy, Marius Martens, Mitch Sherston & Jennifer Maninin.
- OSIG Perth: See overleaf for full 2018/2019 summary.
- Branch Support (SUT KL/Singapore/Melbourne): **Pawan Gupta**, Jennifer Maninin, Si Huai Yeaw and Brett Howard. Includes liaison with Ajan Das (KL), Anthony Gleeson (Singapore) ; Frank Lim (China) & Roger Tan (Melbourne).
- Phoenix: See overleaf for full 2018/2019 summary.
- Scholarships: Fiona Allan, Nick Bardsley, Nick McNaughton, Hema Wadhwa, Matt Moore, **Julie Morgan**, Bukkie Orugun, Stuart Higgins, Jessica Kolbusz, Charlie Rae, Luke Buhlman, Elli Anaglate and Irina Sankoff.
- Subsea Controls Down Under 2018 Conference: Mark Casey, Helena Forsyth, David Keilty, Ross Hendricks, Julien Levadoux, Harry Mackay, Jennifer Maninin, **Norman O'Rourke**, Harvey Smith, Derek Thomson & Paul Upjohn.
- Subsea Engineering Registration: Mark Casey, Nick Brown, Afton Galbraith, Rex Hubbard, Terry Griffiths, Chris Merrick, Matt Moore, Norman O'Rourke & **Ian Wilson**.
- YES!: See overleaf for full 2018/2019 summary.

SUT Perth Branch Events

SUT training courses, evening technical meetings and conferences continue to attract support from presenters and delegates.

Two Community Catch Ups were held during the year for a casual get together.

Our 15th AGM was held this year at the newly renovated Melbourne Hotel. The Chairperson, Treasurer and Secretary's Reports were heard and the new 2019 Committee announced. Sincere thanks were acknowledged for the Members, Sponsors, Presenters, Office Bearers, Committee, Sub-Committees and SUT Staff during the year.



Australia Branch

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Our Annual Dinner was two weeks later, proving yet again to be a very popular event with 246 guests in attendance. As everyone arrived two cartoonists put together some fantastic caricatures of our attendees while several had their photos taken “red carpet” style.

There were spot prizes for one person on every table. Retiring Chair Chris Saunders was thanked by Jen Maninin for his efforts as SUT Chair over the last few years and the following Annual Dinner sponsors were thanked: OneSubsea, Wood, Subsea Engineering Associates, Sapura Energy and INTECSEA.



Conferences

The following conferences were run:

- **Subsea Controls Down Under Conference, 23-24 October 2018**

This international conference in the field of Subsea Controls & Data Acquisition was aimed at those engaged in the control, monitoring & distribution of subsea systems. The conference provided a unique forum for operators and suppliers of subsea controls & umbilical systems, topside distributed control systems and downhole technologies to network and exchange views and experiences.



Australia Branch

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The aim of this conference was to bring together the many diverse disciplines engaged internationally in Controls and Umbilical technology, to share experiences and discuss regional challenges, as well as new advances in global subsea technology. For this conference the theme was “Technology Reliability & Availability Through Collaboration”, showcasing ways of bringing new ideas and technology to provide operational cost savings, and from an operator’s & suppliers viewpoint how we can learn from experiences locally and internationally.

In 2018, the conference saw 106 attendees, coming from over eight different countries and 20% from operating companies. The Ice Breaker river cruise was held aboard the Crystal Swan. Everyone enjoyed an evening of networking, canapes and drinks before disembarking at 9pm for some rest. The Conference Drinks and Subsea Energy Australia Suppliers Forum (piggy-backed onto the conference) were also enjoyed by many conference delegates.

A full post-event report including details of each of the presentations can be found at www.sut.org/event/perth-subsea-controls-down-under-conference/?tribe_event_display=past&c=seminar

A huge thanks again to the Conference Committee (as noted in the first pages of this report) and the sponsors: Major Sponsors: Viper Innovations and Woodside Energy, Ice Breaker sponsor, Yokogawa Australia and Event Partners, One Subsea, Pressure Dynamics and Shell Australia for making the conference possible.

- **AOG (Australian Oil & Gas) Conference and Exhibition, 13-15 March 2019**

Diversified continued the partnership with SUT, Subsea Energy Australia (SEA) and Subsea UK, and to offer the free to attend format for the AOG Conference in 2019. Over 940 people attended the Subsea Forum, which was held within the Exhibition area, the sessions included:

- Subsea Engineering Solutions: New Problem Solvers and New Solutions, Focus on Processing, Focus on Pipelines, Offshore Wind Power
- Life Extension and Beyond: Start with the Structure, What to do with Pipelines, Joining the Dots, Finally Decommissioning
- The Application of Subsea Geoscience: Routes and Soils, Managing Spans, Scanning the Deep for More Data

The conference numbers were 6% higher than 2018, with a 20% growth of the exhibition. The show maintains its international presence, with visitors from 35 countries and exhibitors from 19 countries.



Australia Branch

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Courses

The following training courses were run in the 2018/19 year:

- Subsea Productions Systems, 5 September 2018
- Metocean Awareness Course, 27-28 November 2018
- Introduction to Positioning and Survey, 20-21 February 2019
- Achieving Reliable Subsea Systems, 27 March 2019
- Subsea Awareness Course, 20-24 May 2019
- Flexible Risers & Flowlines Course, 18-19 June 2019
- Offshore Geohazards and Geotechnics, 26 June 2019



Australia Branch

contd.

Evening Technical Meetings

The following evening technical meetings were held in Perth:

- Real Subsea Accomplishments in Digital Technology, 8 August 2018**
 Presentations by: James Knipe, Subsea Engineering Associates; Hema Wadhwa, INTECSEA; Nicholas Nielsen DNV GL and David De Lima Cisco Systems. Chaired by Pawan Gupta, Nobleseas Engineering
 Sponsored by: Cisco; DNV GL and INTECSEA
- The Wind & The Waves...Renewable Energy - Developments Through Learnings From Oil & Gas, 10 October 2018**
 Presentations by Christophe Gaudin, UWA; Laith Tapper, NGI; Andre Andringa, Project Director – Boskalis. Chaired by: Sarah Elkhatib, NGI
 Sponsored by: Norweign Energy Partners and University of Western Australia (Wave Energy Research Centre)
- Surveying Subsea with the Latest Technologies, 13 February 2019**
 Presentations by: Darren Burrowes, BlueZone Group, Adrian Boyle, CEO, Cathx Group, Neil Manning, Chief Operating Officer, 3D at Depth Chaired by: Paul Farquharson, Baker Hughes a GE Company. Sponsored by: 3D at Depth; BlueZone Group and CathX Ocean
- Advancement on Riser Technology, 10 April 2019**
 Presentations by: Christian Wiebe, 2H Offshore, Mark Musarra, Blue Zone Group, Jess Zlokich, Baker Hughes, a GE Company. Chaired by: Stuart Higgins – Curtin University
 Sponsored by: 2H Offshore; Baker Hughes a GE Company and EOM Offshore
- Future of Subsea Autonomy, 12 June 2019**
 Presentations by: Lieutenant James Keane, Royal Australian Navy, Mark Gundersen, Marine Advanced Robotics, Lieutenant James Keane, Royal Australian Navy. Chaired by: Allan Devlin, Phoenix Chair
 Sponsored by: Atteris; BlueZone Group and WAM-V

Full post-event reports on all Evening Technical Meetings can be found at www.sut.org/branch/australia-perth/events/

The Committee is, as always, grateful to all presenters and chairpersons for their time and efforts in making our Evening Technical Meetings such a success, and for those generous Corporate members who support the evenings with their sponsorship.



Australia Branch

contd.

Golf Day – 14 September 2018

For our annual golf day this year, the SUT once again teamed up with the Society for Petroleum Engineers for a collaborative golf day. After the success of last years event we remained at Maylands Peninsula Golf Course and a fantastic day of golfing and networking was had by all in this sold out event.

32 teams battled it out on the course and in a putting competition before sitting down to a meal while several prizes were awarded... a great day was had by all.

We are very grateful for the sponsors who made this possible including: Aussie Fluid Power, Energy Agencies, Oceaneering, OneSubsea and Subsea Engineering Associates.



SUT Perth Sub-Committee Updates

Branch Administration

We have had our first SUT baby this year with Jen having a baby girl (Pippy Lily) in April. Jen went on maternity leave from mid-March to early September. To cover her role Trish has looked after all events in her absence (and we have minimized the number of events and courses during this period); sub-committees have accepted more responsibility and Fiona has worked more hours. We have also employed casual event staff (Tara Forde and Irina Sankoff) to help the office staff who have been a wonderful contribution to the team. They will stay on with Jen staggering her return to work hours (she hopes to be back for three days a week by January 2020).

Jennifer, Fiona and Trish continue to effectively manage the branch administration and still take great pleasure in coordinating and organising all of our events, initiatives, administration, membership and accounts for the society from our West Perth location.

We will be on the move in December 2019 but only to another floor of our current building.



Australia Branch

contd.

Branch Support

SUT Perth put together a sub-committee a few years back for committee members to assist other branches where they can. Updates on this support includes:

China Branch - They are in the process of registering SUT China as a legal charitable organisation, and perhaps would need help from SUT Perth how to draft our constitutions. Besides this, they are working towards the annual international technical conference that will be held between 18-22 September in Zhoushan, set against an archipelago of islands, in the Zhejiang province.

SUT Melbourne - The branch has been restarted by Chris Lee. Their intention is to run the Branch primarily for networking and distribute the effort required to run meeting and events. Most of them are working full time and it's often difficult to find the time needed for the organisation to flourish. They have created a list of people they would like to contact. Their intention is to create a LinkedIn group if possible.

Engagement

The strategy for Engagement for 2019 was -

- Canvass existing legacy members to understand how we can grow and how they can contribute
- Increased Operator attendance at ETMs, with a stretch to present
- Provide training to companies who are employing graduates / less experienced personnel
- Stretch to grow our regular sponsorship base and increased membership numbers
- Continued Growth in diversification of SUT Perth branch
- Continued Synergies with ETM, Engagement and Membership Sub-committees

The focus to date has been canvassing existing members and strengthening the engagement with members/vendors outside the core subsea oil and gas community. In keeping with our diversification target, this year has seen Evening Technical Meetings sponsored and presented by the Royal Australian Navy and the Renewable Energy Sector again. Due to the upturn in the oil and gas sector, sponsorship targets have been reached which is wonderful.



Australia Branch

contd.

Finance

SUT Perth Branch ran at a surplus this 2018/2019 financial year of approximately \$AUD 26,000 (for the first time in five years). This was mainly due to:

- more attendees at our courses (especially Subsea Awareness Course)
- there has been a continuance of cost-cutting where possible
- there has been continued generous sponsorship for our events from many of our members and clients
- all courses and events for 2019 have achieved a better surplus than we had budgeted for

An audited Income and Expenditure Statement for the year will be forwarded to Council following the finalization of the audit in September 2019.

Next year's 2019/2020 Budget Forecast for SUT (Perth) is a surplus of \$AUD 8,000.

Marketing

Our marketing strategy has continued to be implemented with a strong focus on digital strategy and regular engagement with our members. Digital communications are sent twice weekly alongside regular updates on social platforms Twitter and LinkedIn. The switch to digital mail management via Mailchimp has allowed us to build better engagement that is trackable whilst also integrating pre-scheduled automation to ensure continued engagement and marketing whilst staff are on leave.

Membership (Perth and Melbourne) as at 30 June 2019:

- Students: 82
 - Individual: 146
 - Corporate: 52
- Including -Academic / Not for Profit: 4
Global: 14 (with representations in Perth)

Membership has reduced slightly from last year for students and individuals and increased slightly for Corporate members. There has been no increase in membership pricing.

A Perth Membership sub-committee vetting process is still in place to ensure only people and organizations truly involved in the underwater world are elected to the various membership categories.



Australia Branch

contd.

Mentoring Programme (SUT-SPE-SEA-PESA-PCWA-ASEG-WISE)

In 2019, SUT teamed up with the Society of Petroleum Engineers WA (SPE), Subsea Energy Australia (SEA), Petroleum Exploration Society of Australia (PESA), Petroleum Club of WA (PCWA), Australian Society of Exploration Geophysicists (ASEG), and Women in Subsea Engineering (WISE), with the co-operation of Engineers Australia (EA) to offer the industry a mentoring program offering the opportunity to enhance the development of individuals both professionally and personally, as well as the opportunity to broaden their professional network.

The programme in its second year in 2019 was coordinated by SPE, along with a steering committee made up of delegates from the participating societies.

Following an application period between 21 January and 4 of March, the programme was kicked off at a launch night held on 27 March 2019. To assist both mentors and mentees in their programme journey, the joint industry mentoring programme has hosted five personal growth events so far in 2019:

- A self-awareness workshop on 9 of May, where Amy Jacobson took us through how to be more aware of ourselves, our abilities, and our career aspirations, as well as how to develop our “skill portfolio” which brings more of what we enjoy doing into our career and lives in order to create the right balance and find our ‘y’;
- On 30 May a “how to network” event was held which was open to all members of participating societies, where Ron Gibson imparted his wisdom and experience on how to grow and keep your network healthy, with quite a few laughs also had by all on the night;
- On 27 June we held a workshop for mentors only to reflect on the past few month of mentoring and take a deeper look at understanding the how and why we mentor as we do;
- 25 July saw a mentee only workshop, where the emphasis was on getting a clear understanding of the qualities mentees are looking for in a mentor. Getting into a mentoring contract with clear expectations ensures a good smooth relationship, which was affirmed on the night by way of a group activity; and
- On 29 August Amy Jacobsen facilitated a workshop “Influencing through Communication”, where the primary learning was how the emotional undertone of words and communication methods are delivered, influencing the outcome and level of success in professional and personal relationships.

Finally in 2019 there will be a “Value based Leadership” workshop to be held on 31 October, with a 2019 mentoring programme close-out event planned for 5 December, to round out a very successful year.

There were 38 Mentors, 64 Mentees and 9 both a Mentor and Mentee (total 111) in 2019, with 23 of these SUT members. In 2020, SUT will be coordinating the mentoring programme, driving this already very popular and worthwhile industry initiative to new heights.



OSIG Perth Overview – including OSIGp events

OSIGp is the Offshore Site Investigation and Geotechnics Perth special interest group of the SUT covering the 4G's: Geology, Geophysics, Geomatics and Geotechnical Engineering.

Eight years after its inception, the OSIGp Committee comprises 16 representatives of the 4G's including

Australia Branch

contd.

operators, consultants and research organisations that meet monthly to organise training courses, seminars and movie nights.

Over the past 12 months OSIGp has provided an impressive 466 Continuous Professional Development (CPD) training hours including:

- OSIGp's Selection of OTC event : in July 2018 at the Rigby's Bar. This is the third year that OSIGp has brought to Perth audiences selected presentations from the Offshore Technology Conference (OTC) held in Houston and Kuala Lumpur; and
- OSIGp's One Day course in Offshore Geohazards and Geotechnics In June 2019

We have also contributed to (or continue to contribute to):

- AOG conferences where OSIG committee members are contributing to the promotion and organisation of a 4G's technical session.
- SUT Subsea Awareness courses where presentations are given on positioning, geomatics, geophysics, geohazards and geotechnical engineering.

Thanks goes to all OSIGp committee members past and present (listed below) for their time, enthusiasm and hard work. It has enabled OSIGp to thrive in the current environment. Collaboration with SUT, OSIG UK and Houston has been positive and productive. Finally, we would like to thank our speakers and sponsors without whose generous contributions these events would not have been possible.

- Bryan Bergkamp
- Antonio Borges Rodriguez
- Shiahouey Chow (*new in 2019*)
- Michael Cocjin (*Secretary 2019*)
- Cathal Colreavy (*new in 2019*)
- Steve Duffield (*new in 2019*)
- Kevin Day
- Gareth Edwards
- Emma Eltringham
- Ailreza Gholilou
- Chris Haykin (*Vice Chair 2018*)
- Sarah Madrigal (*Secretary 2018*)
- Matthew Kuo (*new in 2019*)
- Chris Meecham
- Raffaele Ragni (*new in 2019*)
- Sam Stanier
- Damon Sunderland (*Chairman 2018 and 2019*)
- Asrar Talukder
- Laith Tapper (*Vice Chairman 2019*)
- Simon Tanner
- Joe Tom
- Wensong Zhang (*new in 2019*)



Australia Branch

contd.

Phoenix Overview

The Phoenix Special Interest Group (SIG) is a collective of subsea underwater professionals; each possessing extensive subsea experience in engineering, science or academia. The group provides a focal point where members apply their experience, knowledge, skills, leadership and wisdom to current and future underwater challenges.

Strategy Sessions were held in 2019 to refresh the Objectives of the Phoenix SIG as follows:

1. Support for under-employed, unemployed and recently retired members of the underwater community
2. Identify opportunities
3. Provide Networking & Communications opportunities for members of the underwater community

Some of Phoenix's key achievements in 2018/2019 include:

- Phoenix has partnered with recruiters (e.g. Spencer Ogden) at monthly meetings to share recruiting/job search best practices and advice, including engaging with recruiters, resumes, digital branding and networking. This has been very successful in supporting Phoenix members as most have returned to full-time work.
- Dr. Paul Choate gave a presentation on the topic of "Space" at a Phoenix meeting, which was relevant given the formation of the new Australian Space Agency as of 1 July 2018, and the SUT Perth Branch strategy of Diversification.
- Phoenix Chair Allan Devlin attended the WA DEFENSE REVIEW Strategy, Defence & Industry Dialogue on 12 September 2018, co-hosted by The City of Perth. The meeting was Chaired by Professor Stephen Smith, Former Australian Foreign Affairs and Defence Minister, and included representatives of the Royal Australian Army, Royal Australian Air Force, Royal Australian Navy, Regional Development Australia, Commonwealth, State and Local Governments along with Australian Industry and trade organisations. Many opportunities for technical collaboration between the Defence and Resources Sectors were identified and discussed.
- Phoenix Chair Allan Devlin Chaired the June 2019 Evening Technical Meeting - The Future of Subsea Autonomy, including presentations from the Royal Australian Navy and Marine Advanced Robotics.
- Phoenix Vice Chair Peter Clark and member Tim Hart have assisted at Evening Technical Meetings with registrations at the door and the microphones for Questions & Answers following presentations.
- Phoenix Chair Allan Devlin and member Tim Hart met with Ray Farrier, Cluster Manager, Subsea Energy Australia (SEA) Subsea Innovation Cluster (SICA) to discuss and agree collaboration opportunities.

Sub-Committee as at 30 June 2019:

- | | |
|---|---|
| • Paul Choate | • Andrew Kilburn |
| • Peter Clarke (<i>Vice Chairman</i>) | • Charles Ludovico |
| • Allan Devlin (<i>Chairman</i>) | • Julie Morgan (<i>SUT Committee member</i>) |
| • Donald Fawcett | • Rodney Silberstein (<i>Under Secretary</i>) |
| • Tim Hart | • Ian Wilson |



Australia Branch

contd.

Scholarship Awards

SUT Perth branch has continued with our policy of supporting students studying relevant courses in Australia and displaying a strong interest in continuing into a career or further studies in underwater disciplines. We have now awarded 62 scholarships since 2007.

This year we awarded two scholarships and are pleased at the continued and positive uptake of scholarships by the student fraternity. One scholarship recipients were from the University of Western Australia this year and the other from Australian Maritime College in Tasmania. The most worthy recipient was awarded the “Chris Lawlor” Scholarship. Congratulations Charlie Rae and Jessica Kolbusz.



Subsea Engineering Competency Framework Project

The sub-committee has completed the framework for subsea engineering competency. An MOU is being finalised between SUT (Perth Branch) and Engineers Australia (EA) for award of Chartered Professional Engineer in Subsea Engineering [CPEng(Subsea)] and registration on the National Engineering Register (NER) as a Subsea Engineer.

Our current focus is completion of the procedures, processes and resources for assessment of applicants. The assessment process will be lead by EA and supported by SUT nominated SME's who are CPEng accredited. We expect to be accepting applications for CPEng(Subsea) and NER in Q4 2019.

YES! (Young Engineers & Scientists) Overview – including YES! Events

YES! was formed in 2013 to build a community of young subsea professionals, promoting collaboration and networking to ultimately drive the future of the subsea industry.

The Purpose of SUT YES! is:

- Promote awareness of subsea industries and link in with universities
- Provide and support professional development of young professionals, students and scientists in subsea industries
- Provide opportunities for networking and informal mentoring for young professionals, students and scientists in subsea and related

YES! primarily uses events to engage with members; students and non members to achieve their goals. During the year there were three successful events (listed overleaf). Full post-event reports on all events can be found at www.sut.org/events/?tribe_event_display=past. In addition to events, YES! Committee members have promoted SUT membership and events at universities, supported SUT Mentoring and have a large involvement in the SUT Scholarship program.

YES! currently has two annual sponsors, Woodside (since 2014) and Santos (new in 2018). Additionally, YES!

Australia Branch

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have brought in Atteris to sponsor an individual event. Many thanks to these generous sponsors.

The YES! sub-committee members' effort and time has been immense throughout the past year and these committee members are:

- Elli Anaglate (*Curtin Student Liaison Officer 2019*)
- Nicholas Bardsley (*2019 Chairman*)
- Mark Haning (*YES! Programme & Marketing Leader*)
- Victoria Hann (*YES! Secretary*)
- Jessica Kolbusz (*UWA Student Liaison Officer 2019*)
- Allaine Lopez
- Naomi Naveh
- Jatin Lodhia
- Guy McCauley
- Liam Moore
- Charlie Rae (*AMC Student Liaison Officer 2019*)
- Liam Salter
- Ben Stangoni
- Shubham Saxena
- Oliver Trifunoski
- Tony Trifunoski
- Ruby Yang

The YES! Sub-Committee is excited about the year ahead in the subsea industry and looking forward to celebrating their six year anniversary in 2019.

YES! events in 2018/2019:

The Young Engineers & Scientists (YES!) Sub-Committee ran the following YES! Evening events over the last financial year:

- 2018 Quiz Night – 30 August 2018
- Site Visit – 29 November 2018 to Subcon, ACEPT and Farstad
- Networking Event at new Woodside Building 8 May 2019

Year Ahead

Perth branch will be doing several new things in the 2019 – 2020 period.

We expect to execute an MoU in Aug-Sept 2019 between Society for Underwater Technology - Perth Branch Inc. and Engineers Australia. Under the MoU Perth Branch members will, based upon our subsea engineering competency (SSEC) framework, assist EA to assess the competence of engineers for the EA credential of 'Chartered Professional Engineer' ("CPEng") in the EA area of practice Subsea Engineering, so that successful candidates can have the credentials "CPEng (Subsea)" and/or EngExec(Subsea). We expect the first individual CPEng(Subsea) credentials awarded before the end of 2019.

Following SUT's participation in a joint mentoring program in 2018 and 2019 (administered for the first two years by SPE-WA Section), SUT Perth Branch will administer the program (and its associated events) in 2020. This joint mentoring program continues to grow in popularity, growing from the three founding bodies (SPE, SEA and SUT) to six organisations with the addition of PESA, PCWA and ASEG.

Our courses subcommittee will roll-out a new advanced short-course in Q3 2019, with two to three more such courses to be rolled out before mid-2020. Each advanced short course will cover a specific subject from the subsea awareness course in greater detail, whilst aligning to our subsea engineering competency framework mentioned above.

All of the above new activities are consistent with Perth's 2017 strategy objectives and they will support the growth of the society. In the background our committee members will continue to develop existing and new leads and opportunities for collaboration with other societies and engagement with other industries with an interest in underwater technology.

Based on the slightly improved business conditions seen in 2018-2019, the budget for 2019/20 has been approved by the Finance Committee with an AUD\$8k target surplus based upon similar revenues per event as was achieved last year, without taking any credit for possible increased revenue the above-mentioned new events. The Perth Branch committee are enthusiastic about the year ahead!

Brazil Branch

www.sut.org/branch/brazil



The SUT Rio Branch has promoted the Workshop on Offshore Wind & Ocean Renewable Energy, supported the Biannual Conference of the Brazilian Society of Naval Architecture and sent representatives to the SUT China Branch joint technical meeting, 2nd China-Brazil Deepwater Forum, that took place in Beijing in September 2018 in partnership with the Petroleum University of China. This also provided an opportunity for our Chair Professor Estefen to meet SUT CEO Steve Hall and discuss ideas on how to regrow the Branch, which is today mainly active in universities but used to have a large private oil & gas sector membership as well.

1st Workshop on Offshore Wind and Renewable Ocean Energy

Hotel Florida, Rio de Janeiro, 5 June 2019

Jointly organized by COPPE, Brazilian Society of naval Architecture (SOBENA) and SUT – Rio Branch

Audience: 180 persons

27th International Congress on Waterborne Transportation, Shipbuilding, and Offshore

FIRJAN, Rio de Janeiro, 23-25 October 2018

Organized by Brazilian Society of Naval Architecture, with the support of SUT Brazil Branch

Audience: 800 persons



Prof. Segen F. Estefen

Committee

Chair Prof SF Estefen

Secretary Prof M Vaz

Treasurer T Netto

Executive Manager

VC Santos

C Bonfim Silva

P Couto

E Labanca

E Nakagawa

C Paulo

M Teixeira



Brazil branch member Prof Carlos Levi speaking at joint China-Brazil technical conference Beijing September 2018



China Branch

www.sut.org/branch/china



Frank Lim

Committee

Chair Frank LIM

Chair Emeritus DUAN Menglan

Sponsor ZHANG Laibin

Technical Advisors

ZHOU Shouwei

ZENG Hengyi

Secretary LIU Junpeng

Treasurer ZHANG Yu

AN Weizheng (Beijing)

BAI Xinglan (Zhejiang)

FENG Junkai (Beijing)

FU Guangming

LIANG Xu (Zhejiang)

WANG Chunsheng
(Daqing)

XIE Peng (Guangzhou)

YAN Jun (Dalian)

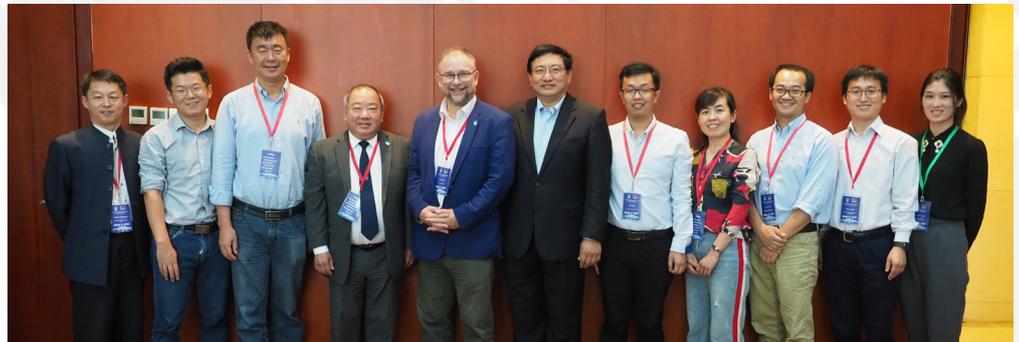
ZHANG Dagang
(Qingdao)

ZHANG Changzhi
(Shenzhen)

ZHENG Hao (Changsha)

This is my second year as chairman of the China branch, having taken over from Prof DUAN Menglan in 2017.

The China branch has undergone a change in its committee membership, from one whose members are appointed to one that is made up of volunteers. At a meeting on 28 September 2018, a new committee with representatives from different regions of China was formed with the aim to have more geographical coverage of the society activities. These representatives are encouraged to organize local events, such as training courses and technical seminars, that will promote the understanding of the various disciplines of underwater technology. Below is the picture taken of some representatives with Steve Hall, CEO of SUT.



SUT China branch holds an international technical conference each year to bring scholars and practitioners, domestic or foreign, together for three working days to present and share knowledge of different aspects of subsea engineering.

The 7th conference, in conjunction with the 2nd China-Brazil Deepwater Forum, was successfully held in Beijing during 26-30 September 2018. Close to 100 participants attended and 62 topics were presented over the five-day event with the 4th day devoted to student presentations. The conference also featured a special half-day 'Mining and Hydrates' forum with invited speakers. Below is the group photo taken of the participants.

Another significant effort this year is to register the SUT China organization as a legal charitable entity to have its own administration and financial functions. This is work in progress.





Kuala Lumpur Branch

www.sut.org/branch/malaysia-kuala-lumpur



Ajan Das

Our Kuala Lumpur Branch has been through a period of reorganisation and is currently exploring how to re-invigorate activities by engaging with Malaysian universities and trying to grow student activities.

The Chair is in contact with HQ about how to take things forward, perhaps in collaboration with other Learned Societies who are active in the region, and by building closer links with SUT China, Australia and Singapore. In the meantime we welcome offers from SUT Members who are interested in working with this Branch to get in touch so that we can see what new initiatives might be possible in the near future.

Committee

Chair Mr Ajan Das

Vice Chair

Mr Craig Ferguson

Treasurer

Dr Ir Jeyanthi Ramasamy

Secretary Mr Eka Arora

Mr Shreenaath Natarajan

Mr Feisal Alhady

Mr Rudisham Marjohan

Mr Marian Copilet

Mr Roger Gregson

Mr David Trees

Mr Dino Sidhu

Mr Azhar Zain

Mr Ravi Kiran Kota

Mr Raymond Teo

Mr Ng Choon Peng



London & South of England Branch

www.sut.org/branch/london



Richard Binks

Committee

Chair Richard Binks

Caroline Acton
Jacqui Adams
Alex Argyros
Chris Ashcroft
Duncan Brown
Peter Hayward
Simon Hems
Joe Hulm
Brian Jones
Iain Knight
Dr Geoff Lyons
Peter Metcalf
Mark Murawiecki
Mark Pickering
Alex Vincent
Nigel Underwood

The Executive runs this branch and their efforts are valued and appreciated. We are indebted to the regular help from other committee members notably Peter Hayward, Joe Hulm, and Geoff Lyons. This year Brian Green Hon secretary SW branch and SUT+ Chair Arabella Walker stepped down. A big thanks for their help in running the branch and welcome Phil Johnston (SW) and Claire Cardy (SUT+) onto the Executive Committee. As ever we would not be able to work without the admin and organisation support of Jacqui Adams, SUT Events Manager.

Executive

Richard Binks	<i>Chairman</i>
Keith Broughton	<i>Deputy Chairman</i>
Iain Knight	<i>Hon Treasurer</i>
Claire Cardy	<i>Hon Secretary SUT+</i>
Jacqui Adams	<i>SUT Events Manager</i>
Phil Johnston	<i>Hon Secretary SW Chapter</i>
Graham Taylor	<i>Hon Secretary</i>

Summary

We had a mixed year with an excellent calendar for our London Lunch and Learn events. We struggled to run evening events as we have not been able to secure a permanent venue to hold them. Our past evening venue at London Imperial College was curtailed as they needed their lecture theatre in

term time. We have tried other venues, such as the Hoop and Toy pub in Kensington and thought we had an excellent opportunity for flexible conference facilities in the Institute of Physics. However, others had the same idea and availability of rooms is a problem. The Hoop and Toy was used for our annual Global Oilfield Prospects lecture by Westwood Global Energy. The mix of social plus education worked well but at times we need a more prestigious venue. The problem with London is that conference rooms are often quoted at £1000+ per night.

Unfortunately also, when we have organised events, invite up-take, at times, has been low. This has happened even when the topic is mainstream to our active special interest groups. In these circumstances, we try and postpone to another date rather than cancel. Sadly also we had to cancel our financial year end summer BBQ bash as here again we did not have sufficient tickets sold.

Evening Events:

- Nov 2018: **Annual Pub Quiz Ye Olde Watling, London**
- March 2019: **Global Offshore Prospects Westwood Global Energy**
- May 2019: **Simpler, Leaner, Smarter – The Subsea2.0™ Product Platform for iEPCI™ Project Execution Technip FMC**
- June 2019: **Intecsea/Sonardyne: Pseudo Dry Pipeline/ Pipeline Remote Monitoring– Postponed**
- June, 2019: **SUT Summer Reception HQS Wellington – Cancelled**

Lunch & Learns:

- October 2018: **Autonomy Under at Sea**
- November 2018: **Subsea Power Hub**
- February 2019: **Westwood Global Offshore Prospects**
- May 2019: **OGA Wood Review 5 Years On**
- June 2019: **Blue Future**

London & South of England Branch

contd.

SUT+

We are having a reality check with our SUT+ sub group. Whereas the group is active, it has limited members. There are few SUT+ members outside of those on the SUT+ committee. This needs addressing, it is fundamental to the future of SUT that we appeal to younger people to join. Geography and cost are issues. There are clusters of underwater related companies on the UK South Coast. Time away from work and cost of travel make it expensive for south coast SUT+ members to attend London events. It helps if corporate members are prepared to expense their individual members to attend meetings but these days this is longer common practice.

City Subsea Awareness Course and Unexploded Ordnance courses

We have not run any of these courses in this financial year. Mark Murawiecki, an experienced trainer from the subsea industry, has revised the one day SSAC on a modular format. We are currently finalising presenters and look forward to running the new city Subsea awareness course in 2020.

It is still planned to run a longer (4 x ½ days). This would be targeted at senior City loss adjusters. Unexploded Ordnance courses course is work in progress again for the City Insurance market. Setting up and running courses takes up a lot of our volunteer effort. We look forward to more help from the newly established Training Special Interest Group.



Summer BBQ July 2018

Summer BBQ June HQS Wellington

Although we had a rerun of last year's successful event all planned, organised with sponsorship in place, we had to cancel, due to lower than expected ticket sales. If we feel that an event is not going to show a profit, we have to be pragmatic and cancel in good time to avoid any penalties. Some of our regular corporate members who buy blocks of tickets could not attend this year, which was one reason that ticket sales were lower. Ticket price at £87.50 was still a breakeven price. This is still too high for most of our younger SUT+ members and gives us very little flexibility to offer cheaper tickets eg for partners.

We are reviewing our options for next year, but I believe we need to have a lower-cost, more inclusive event.

SW Chapter Update

The committee is now working with new SW secretary Phil Johnston on an agenda for three events in the coming year.

Events in 2018-19:

- November 2018: **Advances in Marine Measurements:** A forum evening with presentations from Nortek, University of Plymouth, Plymouth Marine Labs, Marine Biological Association and Fugro on various aspects of measurement. The event was kindly sponsored by the Metoffice and hosted by Plymouth University.
- April 2019: **Satellite Data For Marine Applications**

Conclusion

We have been treading water in 2018-19. Careful not to run any events at a loss but equally suffering from problems of no consistent evening venue and low numbers attending some events. Our itinerary of Lunch & Learns in the City is a key success and we appreciate the generosity of the city companies that provide venues and lunches.

Engaging with existing and recruiting new Corporate members is key to our future. Ensuring that the corporate members appreciate the value proposition of SUT is a fundamental building block.

As ever we need to encourage more active committee members but, as always, value and appreciate the efforts of everyone that volunteers their time for SUT.



Middle East Branch

www.sut.org/branch/middle-east



Adrian Phillips

Committee

Chair Adrian Phillips

Abu Dhabi

Richard Richards

Bill Hickie

Russell Harper

Brad Kirkland

Andrej Blazevic

Susan Murray

Spencer Clark

Tarek Al Marzouqi

Dubai

Graeme Chalmers

Ed Bevan

Steve Goddard

Bob Morgan

Nawin Singh

Milind Abhyankar

Farnaz Ghasemi

Bedros Mardikian

Wayne Morgan

There are some good reasons why the SUT has never found its feet in the Middle East, not least of which being the region is not always recognised as a subsea domain. Shallow waters and a relatively benign environment lends itself to jackets and platform based developments. Add to that the transient nature of the expatriate engineering community, a long summer when most find a way to escape the heat, religious holidays, difficulties with legal entity establishment, speaker clearances and dry events you might be wondering why we ever tried. Dubai is also a long way from Abu Dhabi which doesn't help! That said, the Middle East is an incredibly diverse community, and with that brings some recognition of the SUT brand. Many of us started our lives in places where SUT was well established.

I was, however, encouraged in the early stage by a small working group to give it a shot. Graeme Chalmers (Flowline Specialists), Ed Bevan (Pelagian) and Bob Morgan (GE) were amongst the first enthusiasts, and numbers swelled with the addition of Bedros Mardikian (Telford Offshore), Farnaz Ghasemi (Wood), Russell Harper (DCN BV), Spencer Clark (Lloyd Warwick) and Steve Goddard (Prysmian). In Abu Dhabi we were joined by Andrej Blazevic (Mermaid), Richard Richards (TechnipFMC), Brad Kirkland (Fugro) and Wayne Morgan (Oceaneering), Jules Verlinden (Kenz Figeo), Bill Hickie (UTEC). Once Nawin Singh (McDermott), Tarek Al Marzouqi (NPCC) and latterly Saipem started to show interest we felt we were onto something. Just the list of committee member companies is enough to prove there is a lot going on subsea from survey to major offshore development including pipelines, umbilicals and flexibles. There is a fleet of ROVs in the region, mostly observation class and the supply chain include many of the companies we are familiar with in Aberdeen, Houston and Perth. We hope our efforts will bring the SUT goals and objectives to one of the biggest offshore frontiers.

The Middle East has been a busy place since 2015 driven largely by Aramco's huge brownfield investments in Safaniyah, Berri, Zuluf, Hasbah to name but a few and the region has seen the arrival of major new EPC players like COOEC, Sapura Energy, Boskalis, SS7 to augment the incumbents McDermott, NPCC, Saipem and TechnipFMC. ADNOC is coming back to the market for an equally ambitious program of offshore field renewal (Dalma) as well as the development of its sour gas fields Hail & Ghasha, Bab and Shah. Qatar has continued to forge ahead with the developments of the Shaheen, Barzan and North Fields and all of these projects have offered the offshore, marine and subsea community a somewhat counter cyclical opportunity.

Technology adoption can be slow in the region and one major objective must be to showcase best practice from other parts of the world. Like any region, there are plenty of aging assets so our first event which we ran with Heriot Watt in Dubai and Khalifa University in Abu Dhabi tackled the application of new technology for field life extension. The third event at Mubarak Marine tackled the introduction of flexible vs rigid flowlines as a means to solve the problems of field complexity. New HV cable networks and associated umbilicals has kept the engineering community

busy as well as the supply chain and our fourth event again with Khalifa University will examine the economics of lay methodology and subsea protection and stabilisation.

It is fair to say we are still at an early stage of our development, but we mark our first anniversary with a presence at ADIPEC in 2019 with our own stand this year. We encourage you to come and visit us, and we are feeling brave enough to establish a local entity to make billing easier. We look ahead to 2020 with plans for more events around topical subjects such as trenching vs excavation, shore-pulls and the feasibility of shallow water subsea completions. The committee is keen to look at the feasibility of a "Subsea Awareness Course" as indeed to grow the ranks of individual and corporate members in the region.

Aquaculture would need some investigation, but Aramco is looking at floating wind and the salt pools of the Red Sea offer a tantalising array of seabed resources. All good themes for 2020 and beyond!

North of England Branch

www.sut.org/branch/north-of-england



The North of England Branch meets on a bi-monthly basis, and has organised five technical sessions, seven planning sessions and a Student Event over the period. The technical sessions have been well supported with average attendance being 40 knowledgeable students and subsea practitioners. The audiences have been, without exception, enthusiastic in their questions and comments – a testament to the breadth and depth of experience and enthusiasm residing in the North of England.

The branch continues to be hosted by Newcastle University's School of Marine Science and Technology; their recent refurbishment has added to the fantastic facilities they offer. Being based within the University, we continue to be well supported with student attendance.



Martin Bingham

Committee

This year at the AGM Michael Williams handed over the reins of leadership to Dr George Varelis, Principle Engineer at PDL Solutions. I, and the rest of the committee would like to thank Michael for his leadership over the last few years and we welcomed George into the position. Unfortunately, six months after taking up the role, George was lured down south by the bright lights of London and had to step down (although I am sure he is now attending the London meetings!). The chairmanship has been taken over temporarily by Vice Chairman Martin Bingham and the new chair will be decided this year at the AGM.

During the year several new members were welcomed onto the committee, Denis Vasiljev from OSBIT, Vahid Walker of Walker Subsea, Nick Wright from Newcastle University, Peter Williams from BEL Valves, Andrew Burton and Marguerite Forde from Rosen.

Activities

Evening Meetings 1 July 2018 - 31 June 2019

During the year the committee organised 5 varied talks covering the areas of

- Subsea Robotics with Professor Nick Wright of Newcastle University and Elizabeth Paul, Business Development Manager at Sonardyne.
- 3D Subsea data acquisition with David Rattray, Senior Project Surveyor from DeepOcean
- High Integrity Composites with Andy Christie, Engineer at PDL Solutions and Vineet Jha, Principle Engineer at BHGE
- High Performance offshore systems with Tom Blanchford, Pipelay Business Development Manager
- Deep Sea Exploration with Dr Alan Jamieson, Senior Lecturer in deep-sea Biology at Newcastle University and Chief Scientist on The Five Deeps Expedition

Committee

Vice Chair & Acting Chair

Martin Bingham

Honorary Secretary

Dr Simon Benson

Treasurer Dr Ian Frazer

Michael Williams

John Greenwood

Andy Roberts

Elizabeth Waterman

Michael van Zwanenberg

Denis Vasiljev

Nick Wright

Vahid Walker

Peter Williams

Andrew Burton

Marguerite Forde

North of England Branch

contd.



Many of the topics were new to the branch members as they were outside of their normal sectors with the subsea industry. However, these talks highlighted how there can be cross pollination of ideas, tools and techniques between the sectors within the subsea industry and beyond.

They also showed how quickly some technologies can progress if they are shared across multiple industries; David Rattrays talk on photogrammetry subsea showed how quickly that field was advancing with its use of open

source software used and developed globally (who knew the same techniques would be advancing both seabed survey and dentistry!)

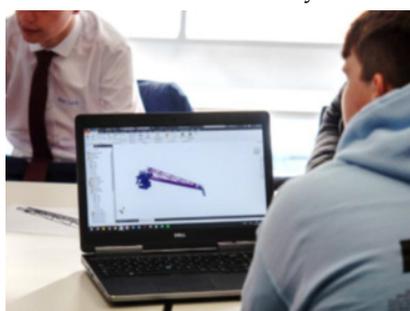
If nothing else, the talks this year reminded us to keep our heads out of just our own work and adjacent fields and take a broader view to find new approaches and tools to be used in the subsea sector. We will certainly be looking to develop a broader approach to topics to enhance this within the branch.

Reports on the individual talks are available on the SUT website.

SUT+

Our SUT+ committee has had another stellar year, under the watchful eyes of Eugenie Warden, Elizabeth Waterman, Denis Vasiljev, Thai Truong and Chris Convery and Shaun Burrows. Several visits to local companies were arranged and well attended alongside the annual STEM event.

The SUT+ team, coordinating with the NUSTEM (Northumbria University STEM team) successfully delivered the 4th NoE 'Engineering under the Waves' Schools Event on 18th October 2017, held at the Northumbria University. The event was aimed to inspire 16-18 yr olds into considering options for carers in the subsea sector, giving them the opportunity to get face to face and talk with real engineers alongside taking part in practical sessions run by the events sponsors. The tours of the university laboratories highlighted the academic opportunities within the subsea sector and proved highly popular with the attending students. Many thanks must go to Antonio Portas and his team at the university for their support during this event.



With this 4th edition of 'Engineering under the Waves' the popularity continues to grow with a wider range of local schools and colleges attending than ever before.

Final thanks should go to the six local sponsoring companies without whom this event would not be viable (Baker Hughes (a GE Company), TechnipFMC, SMD, OSBIT, Bel Valves and Royal IHC) – their sponsorship was gratefully received and shown to be worthwhile when you get student feedback like:

"The speakers gave valuable insights into a field I was largely unaware of"

"I feel much better educated about the industry and am seriously considering joining it now!"

We look forward to inspiring another generation of future engineers at the 5th Edition planned for 18 October 2019

Finances

The North of England Branch finances are reported through the Aberdeen Branch P&L account. Our activities have been funded by membership fees and branch sponsorship received from local companies throughout the year.

With this climate in mind, the contribution from our local sponsors is particularly acknowledged; Baker Hughes, a GE Company, DeepOcean, IHC Engineering Business, MODUS Seabed Intervention, Newcastle University, Osbit, PDL Solutions, Soil Machine Dynamics, TechnipFMC and RED Engineering.

North of England Branch

contd.

Future Plans

This year, through new committee member Nick Wright one of our meetings was jointly held with members of the IEEE. This significantly broadens the horizons of both sets of members by introducing a wider range of topics. We also now coordinate with other local societies to avoid meeting clashes and we intend to advertise this wider range of events across all societies.

As we look to the future, we see:

- Continued collaboration with other local societies to further the cross-pollination of ideas and technologies along with some joint events
- Seeking out challenging talks and topics
- Engaging via our university base to access a wider population of young people
- Expanding the SUT+ events to connect with a greater proportion of the local school population

The branch will exist to enthuse those already in the industry, inspire others to join it and spread the word to a younger generation about the opportunities and excitement of the sector.



Norway Branch

www.sut.org/branch/norway



Nils Vågen

Committee

Chair Nils Vagen

Manager Tom Erikson

V Fondevik
O Hagesaether
GA Johansen
RD Skre
I Westervik

The Norwegian Branch of SUT has had another quiet year. We have focused on getting the SUT/Subsea Awareness Course (SAC) up and running again. We offered the industry a new two-day compressed course with an excellent program. Despite reducing the course fee and the number of days to just two, we still have too few attendees (six persons) and, unfortunately, we once again had to cancel our Subsea Awareness Course.

In earlier years the course was extremely popular. We plan to intensify the marketing of the May 2020 course, and we are optimistic that we can get the course up and running again next Spring.

We thank Vidar Fondevik who will retire end of the year from as a committee member of SUT Norway. He has been with us for 10 years and has been a valued member of the Norway branch.

Norway

The Norwegian Branch of SUT was established in 2009. SUT Norway is set up to provide a focal point for members of the SUT in Norway. The Programme for the Subsea Awareness Courses are compiled by the Norwegian Branch committee and are designed to fulfil the requirements of the Society's diverse membership.

Singapore Branch

www.sut.org/branch/singapore



The Singapore Branch has continued its networking and outreach mission this year. We held two technical meetings at the back end of 2018 and one in Q2 of 2019. These have typically two speakers plus networking time after the presentations and Q&A session. These events have been successful, with a typical attendance of around 50-60 people and are one of the few regular Industry networking events happening in Singapore at the moment.

We held our annual AGM in January 2019.

For the first time in Chapter history we sponsored a local student event, the Singapore AUV challenge, 8-11 March 2019, organized by the local IEEE chapter, Singapore Polytechnic and National University of Singapore (NUS). It's a competition that has been running since 2013 and open to Tertiary engineering students from around the world. The objective for the University teams is to develop their own AUV to compete in a set of given tasks in a swimming pool. The game plan is designed to be challenging enough to trigger students engineering creativity and innovation in solving underwater robotics tasks. The competition, stretched over four days, provides an avenue for the students to showcase and present their designs and develop skills for the next generation of subsea robotics engineers (see photos below).

Our first ever end of year social will be held on 21 November 2019 and will be followed by our regular AGM to be held in January 2020. As always we are looking for passionate volunteers to join our committee, if you are interested in supporting the SUT Singapore chapter please contact singapore@sut.org for more information.



Anthony Gleeson

Committee

Chair Anthony Gleeson

Vice Chair

Colin Campbell

Treasurer Che Keong Lee

Secretary Jose Manuel Puig

Andy Ching

Mark Colbridge

Derek Donaldson

Maxime Even

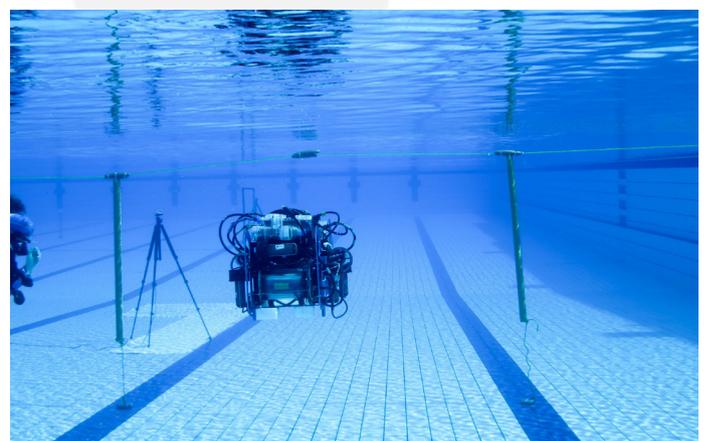
William Lee

Xiang Liu

Wendy Lee

SamPaul Singh

Merina Tham





US Branch

www.sut.org/branch/houston



Zenon Medina-Cetina

Committee

Hon Chair & President

Zenon Medina-Cetina

Hon Treasurer & Training

Officer Don Schlater

Hon Secretary

Jan Van Smirren

Education Committee Chair

John Allen

Subsea Engineering & Operations Chair

Maria Ancheril

School Touring Chair

Andrew Haigh

Robotics & Automation Chair

Fathi Ghorbel

Professionals Chair

Patricia Varela Young

Members at Large

Logan Brant

Christopher Curran

Earl Doyle

(OSIG Secretary)

Colin Johnston

Kim Faulk

Matt Kirk

Roger Osborne

(Special Events)

Mark Siegmund

Aimee Thurlow

SUT-US is comprised by an Executive Committee and six technical committees; Offshore Site Investigation and Geotechnics (OSIG), Subsea Engineering and Operations (SEO), Group on Environmental Forces (GEFUS), and Robotics & Automation (R&A), and the newly established Offshore Renewables (OR); by two non-technical committees, the Young Professionals and Education Committees; and by five students chapters, Texas A&M University (SUT-TAMU), the University of Houston (SUT-SES-UH), the Texas A&M University – Galveston (SUT-TAMUG), Rice University (SUT-RICE), and Instituto Tecnológico del Petróleo y Energía (SUT-ITPE). All are active groups that meet regularly and which have active memberships.

Notable efforts

- SUT-US supported the organization of the technical program for Oceanology International Americas 2019 (OiAmericas 2019) in San Diego, California. Two members from the SUT-US Young Professionals Group (YP) were sponsored to represent the SUT-US at the booth and at the Career Day panel.
- SUT-US was the invited professional organization for the 2019 Offshore Technology Conference (OTC) in Houston, and led a technical session. Dr. Zenon Medina-Cetina, President and Chair of SUT-US and Associate Professor and holder of the Zachry Career Development Professorship II at Texas A&M University; and Kim Faulk, Chair of the SUT-US OSIG Committee, and Chief Operating Officer at The PAST Foundation chaired the technical session. six papers were presented by SUT-US members:
 - Bayesian Stratigraphy Integration of Geophysical, Geological, and Geotechnical Surveys Data - *Z. Medina-Cetina, J. Son, M. Moradi, Texas A&M University*
 - An Ideation and Roadmapping Workshop on the Development of AUVs for Oil & Gas Subsea Applications - *F.H. Gorbhel, S. Kapusta, Rice University; J. Allen, Society for Underwater Technology*
 - Assessing the Pile Driving Risk due to the Presence of Boulders - *R. Stevens, Z. Westgate, Fugro USA Marine, Inc.; J. Kocijan, Fugro USA Land, Inc.*
 - Behavior of Laterally Loaded Offshore Wind Monopiles in Sands - *R.B. Gilbert, Y. Huang, K.H. Stokoe, The University of Texas at Austin; S. Wang, Ensoft; J. Munson, J. Bauer, R. Hosseini, A. Hussien, The University of Texas at Austin; H. Fadaifard, Ensoft; D. O'Connell, BOEM*
 - The Effect of Bayesian Updating in the Hazard Assessment of Submarine Landslides - *R. Das, P.Y. Varela, Geosyntec Consultants, Inc.; Z. Medina-Cetina, Texas A&M University*
 - An Overview and Awareness Briefing for Offshore Renewable Energy, Wind, Wave, Flow, Hydrokinetic and Thermal Converter - *R.S. Osborne, Ocean Flow Intl*
 - Design of a Floating Multi-Source Offshore Renewable Energy Platform - *R. Robinson, G. Engelmann, Excipio Energy*
- Reed Exhibitions and SUT-US leadership meet at OTC 2019 to engage in the organization and coordination of Oceanology International San Diego 2021.
- SUT-US joined a proposal with the National Oceanic and Atmosphere Administration (NOAA) Professional and Technical (ProTech) Services

US Branch

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Program, as a member of a consortium led by the BMT Group., which grants SUT-US the opportunity to contract ProTech projects within its Oceans Domain Program.

- SUT-US joins as a supporting organization of the Project Optimization Rural Coastal High Needs Middle School Students Achievement Via Marine Robotics Competitions (Project ORCA), committing to 50% matching funds if Project ORCA sets funds to support scholarships in underwater technology up to \$18,000 USD annually over the next five years.
- SUT-US submitted a proposal with Pacific Ocean Energy Trust - an Oregon 501(c)3 nonprofit corporation to DOE Exchange for the "Testing Expertise and Access for Marine Energy Research (TEAMER) Program". This was approved on 18 September 2019.



Zenon Medina-Cetina and Steve Hall with previous SUT Oceanography prize winner Prof Scott Glenn

- An Intellectual Property Agreement has been on the works with a Texas Attorney to protect the SUT-US and its presenters from any IP related issues. This agreement should enable the SUT-US to distribute recorded presentation material upon presenters/companies consent.
- Efforts in the organization of the Marine Autonomous Systems Conference led by Christopher Curran, Justin Manley, Fathi Ghorbel, Zenon Medina-Cetina and Jan Van Smirren.
- SUT-US has been invited to collaborate as supporting organization with the International Society of Automation in Process Industry Event.
- SUT-US a supporting and sponsoring organization for the International Symposium on Frontiers in Offshore Geotechnics 2020 (ISFOG) to take place on August 16-19 2020 in Austin, Texas.

SUT-US' staff is comprised by Mrs. Patsy Rhymes who assumes the coordination of all events; Ms. Araceli Lopez who is responsible for the coordination of communications.

Ms. Monica Lopez-Aguilera joined the SUT-US on September 2018 as Editor, and Ms. Audrey Guzman as an accounting assistant. Both are working as independent contractors.

Below is a summary of the key activities held at the SUT-US branch for the period of 1 July 2018 – 30 June 2019.

Networking Meetings and Attendance Figures

- 5 July 2018 - 8
- YP Inaugural Event 23 August 2018 - 25
- 13 September 2018 - 16
- 4 October 2018 - 5
- Scholarship Awards Ceremony 1 November 2018 - 20
- Champagne & Conversation Series 11 January 2019 - 32
- 7 February 2019 - 15

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contd.

- 7 March 2019 - 9
- 4 April 2019 - 18
- Pre-OTC 2 May 2019 - 34
- Champagne & Conversation Series 27 June 2019 - 36

Average attendance per networking event: 22 people

Other learning programs organized by Executive Committee included the workshop “Key Elements of Subsea Tiebacks,” presented at the Subsea Tiebacks Forum & Exhibition on March 5-7, 2019. This year the SUT-US received a complimentary booth space for marketing support of the workshop. Presenters included: Christopher Curran, Senior Consultant, CJC Enterprises, LLC,

William Taggart, Senior Engineering Advisor, Murphy Exploration & Production, Charles Horn, Senior Advisor, NanoRidge Materials, Inc, and Karl Schnakenburg, Global Engineering Advisor, BHP.

Scholarship fundraisers

SUT US’ organized a clay shoot competition in collaboration with the *Be an Angel* Fund on 31 August 2018. 50% of the event’s proceeds were transferred to help special needs children from the *Be An Angel* Fund. 10 teams participated and IntecSea, Proserv and JDR Cables sponsored the event.

AGM

SUT US’ Annual General Meeting was held on December 6th, 2018. During this meeting, the executive committee introduced the new elected board members:

- Zenon Medina-Cetina (Re-elected)
- Christopher Curran (Re-elected)
- Colin Johnston (Re-elected)
- Maria Ancheril (Re-elected)
- Matt Kirk (Re-elected)
- John Allen (Re-elected)

OSIG Committee

OSIG is comprised of the following subcommittees: Short Courses, Student/Faculty Research, Mentoring and Innovation, Learning Seminars & Webinars, School Touring and Communications. 44 active volunteers form OSIG.

OSIG’s activities for the 2018/2019-year have included learning luncheons, courses, and school touring programs.

Learning Luncheons & Webinars

- **30 August 2019 – Offshore Renewable Energy**, William Stewart, BS, MS, C.Eng, D.OE
Seminar attendees: 24 Webinar attendees: 7
- **7 September 2018 - The Impact of Soil Damping on Pipeline Fatigue and Spanning**,
Dr. Ed Clukey, The Jukes Group
Webinar attendees: 12
- **4 October 2018 - Geomechanics of Marine Anchors**, Dr. Charles Aubeny, Texas A&M University, Author of
Geomechanics of Marine Anchors
Seminar attendees: 12 Webinar attendees: 13
- **5 April 2018 - The Fourth McClelland Lecture**, Dr. Alan Young, The Fourth ISSMGE McClelland Lecturer
Seminar attendees: 32 Webinar attendees: 6

US Branch

contd.

Workshops & Courses

- September 28 2018 - Integrity and Risk Assessment of Pipelines and SCRs - Attendees: 17 Webinar: 5
- November 7-8 2018 – Marine Archaeology Course - Seminar attendees: 6 Webinar attendees: 2
- April 16-18 2018 - Introduction to Integrated Marine Site Characterization - Seminar attendees: 22 Webinar attendees: 5

OSIG's School Touring Sub-committee is one of the most active groups in the SUT- US branch. Supporting OSIG members include Kim Faulk, Alan Foley, Francisco Hernandez, Jim Collins, Andy Hill, Dan Lanier, Amanda Evans, Dan McConnell, Logan Brant and Shawn Williamson. Thanks to the dedication and passion of its active volunteers, it was possible to reach 1,567 students from K-12th in the 2018/2019 year.

- **January 11 2019 – Judging and talking to students about Ocean Science**
St Jerome Science Fair, Students reached: 100
- **January 18 2019 – 5th Grade Geology Rocks**
CFISD More Elementary School, Students reached: 300
- **April 23 2019 – 12th Grade Exploring Oceans & Seas**
CFISD Cy-Creek High School, Students reached: 120
- **May 20 2019 – 7th Grade Are We There Yet**
CFISD Opal Hamilton Middle School, Students reached: 480
- **May 24 2019 – 8th Grade Exploring Oceans and Seas**
CFISD Opal Hamilton Middle School, Students reached: 490
- **June 5 2019 – Summer Camp – Extreme Machines**
Houston Museum of Natural Science
Presented by Tricia Hill, Chair of SUT-US Subsea Engineering and Operations Committee
Students reached: 25
- **June 12 2019 – Summer Camp – Extreme Machines**
Houston Museum of Natural Science
Presented by Dan Spikula, Member of SUT-US Offshore Site Investigation and Geotechnics Committee
Students reached: 22
- **June 12 2019 – Summer Camp – Roving Robots**
Houston Museum of Natural Science
Presented by Andy Hill, Chair Elect of SUT-US Offshore Site Investigation and Geotechnics Committee
Students reached: 30

The primary goal for the next 12 months is to improve the volunteer pool and continue to rebuild the program near where it was in July 2017. Continue to develop links with other groups to move the program out of the Houston area, and support collaboration with other groups of SUT-US. There is a proposal to engage with a local teacher symposium in 24-26 March 2019.

Upcoming events for OSIG 2019:

- 10 October 2019 – Case Study: Cost Savings via Advanced Geotechnical Design, Seastar Offshore Wind Farm, Belgium
- 9-11 December 2019 - Introduction to Integrated Marine Site Characterization

US Branch

contd.

SEO Committee

SEO is comprised of 10 members. SEO's activities for the 2018/ 2019 year have included learning luncheons, webinars and its flagship subsea course:

Learning Luncheons, Webinars & Courses

- **10-13 September 2018 – Subsea Awareness Course** - 4 Learners
- **11 October 2018 - Overview of Vortex-Induced Vibrations and Its Suppression Devices**
Don Allen, VIV Solutions - Seminar attendees: 14 Webinar attendees: 9
- **15 November 2018 - Repeatability of Optical Measurements in the Subsea Environment and the Importance of Index Refraction Correction** - Derek Pierce, LiDAR Technologies - Seminar attendees: 6 Webinar attendees: 2
- **3-6 December 2018 – Subsea Awareness Course** - 11 Learners
- **13 December 2018 - Subsea Automatic Pig Launcher Benefits, Development and Qualification**
Kristian Mikalsen, National Oilwell Varco (NOV) - Seminar attendees: 6 Webinar attendees: 11
- **1-4 April 2019 - Subsea Awareness Course** - 6 Learners
- **18 April 2019 - Deepwater Risers, Flowlines, and Jumpers from Airborne Oil and Gas**
Caroline Justet, Airborne Oil & Gas - Seminar attendees: 12 Webinar attendees: 10

The Subsea Awareness Course (SAC) continues to be one of the main income generators for SUT US. The SEO committee and staff members continue to invest efforts to improve the learning experience of this course, and reaching out to more professionals throughout the industry. The leading hosting companies for the course have been TechnipFMC, BP America, and Oceaneering.

This year, the SEO has partnered with the Offshore Well Intervention Conference Gulf of Mexico, to deliver a one-day Subsea Awareness Course on November 19, 2019 in Houston. A media agreement has been established, and the proceeds will be split 50-50.

Upcoming events for SEO 2019:

- 27 August 2019 – Drilling 101 Course
- 9-12 September 2019 – Subsea Awareness Course
- 17 October 2019 - SimSolid: A Structural simulation tool for rapid design iterations
- 24 October 2019 – Champagne & Conversation Series Edition 4
- 20-21 November 2019 – 6th Offshore Well Intervention Conference
- 9-11 December 2019 – Subsea Awareness Course

Group on Environmental Forces (GEFUS)

19 volunteers form part of the Group on Environmental Forces (GEFUS). During the past year, GEFUS in collaboration with the Loop Current & Eddies Alliance and the National Academy of Sciences organized a one-day workshop "The NAS - UGOS Initiative Workshop." The Workshop took place on 17 June 2019 and counted with 25 participants.

Another important activity for GEFUS, was the 1000-Year Scholarship program organized jointly with Loop Current & Eddies Alliance. The 1000-Year Scholarship rewards outstanding students studying curricula and performing research in the fields of meteorology or physical oceanography and who are pursuing a career in Metocean. The funds are obtained by donations from the metocean community and marine technology industry. In 2018, three scholarships worth \$1,500 were awarded. The call for application is open for the 2019 1000-Year Scholarship Program.

US Branch

contd.

Upcoming events GEFUS 2019:

- Metocean Awareness Course

Robotics and Automation Committee

The Robotics and Automation Committee (R&A) is chaired by Dr. Fathi Ghorbel, Professor at Rice University, and Director of the Robotics & Intelligent Systems Lab. Individuals from the following organizations committed membership: Schlumberger, SAAB, inRobotics, Kongsberg, Chevron, CANRIG, RBR Group, TAMU, UH CL, and Rice University.

The committee is working on finalizing its constitutions and fill the position of Chair Elect. Upcoming learning programs will focus on panel discussions on policy issues, standards, or key challenges in robotics and automation and strategies to address them.

Offshore Renewables Committee

Roger Osborne from Offshore Energy Advisors, Chairs the Offshore Renewables Committee (OR). Current efforts are focused on defining membership.

Upcoming events OR 2019:

- 5 September 2019 – A Review on Offshore Renewable Development

Education Committee

Four members comprise the Education Committee, chaired by John Allen. This committee is responsible for reviewing SUT US' annual scholarship applications.

The 2018 scholarship recipients were recognized during the Scholarship Awards Ceremony on 1 November 2018. The selected students by the Scholarships Subcommittee were:

- Rachel Holzhauser, Industrial Distribution, Texas A&M University
- Neethi Anand, Mechanical Engineering, University of Houston
- Guillermo Duran, Geotechnical Engineering, Texas A&M University
- Malik Kashan, Geotechnical Engineering, Texas A&M University
- Victoria Barlett, Marine Resource Management, Texas A&M University at Galveston
- Yasmin Layeeq, Marine Biology, Texas A&M University at Galveston

This year's scholarship recipients will be awarded during the Scholarship Awards Ceremony on 15 November 2019 at Rice University.

The Education committee is looking to settle student chapters in the University of Texas at Austin and Prairie View A&M University.

Looking to establish clear membership guidelines, the education committee was previously broken down into separate entities, due to size. The board position of Chair for K-12 outreach was created, separating out the University student branch committee as a separate chair. John Allen is requested to assist create university student branches globally, and discussion has started on how to expand university student branches in the U.S. beyond the reach of the Houston centric executive.

US Branch

contd.

Young Professionals Committee (SUT-YP)

Learning Luncheons & Webinars

- **11 April 2019 - Subsea Site Investigation with a Portable Remotely Operated Drill**

Mark Simkin, Benthic USA LLC - Seminar attendees: 27 Webinar attendees: 1

The Young Professionals Committee of SUT-US (SUT-YP inaugural event took place on 23 August 2018 where Dr. Zenon Medina-Cetina, Chair & President of SUT-US, participated as the keynote speaker. Furthermore, the YP have remained active throughout the past year supporting SUT-US sponsored events such as Oceanology International Americas, Offshore Technology Conference, networking events, and the School Touring program. In addition to organizing their own fundraising activities such as a Barbeque Scholarship Fundraiser scheduled for 19 July 2019 sponsored by Benthic, Geosyntec, and TechnipFMC.

Student Chapters

SUT-US gave its student chapters their annual sponsorship checks during the Annual Scholarship Awards Ceremony on 1 November 2018. The annual contribution serves as an affirmation of SUT-US' support to the university student chapters. With student chapters in the Texas and in Yucatan, Mexico the SUT-US is investing efforts to expand to other universities within the U.S. and globally.

The student chapters' sponsorships help the student communities organize seminars, workshops, meetings, community service activities and competitions throughout the academic year. Some of the activities organized by the different student chapters are listed below:

Texas A&M University Student Chapter (SUT-TAMU) is currently in election process of the new board. Their program of activities for the 2018/2019 included:

- 2 September 2018 – MSC Open House
- 4 September 2018 – “An Introduction to Subsea Systems” by Steve Johnson, Chevron
- 27 September 2018 – Young Professionals Panel
- 25 October 2018 – Presentation by Geeta Thakorlal, President of INTECSEA
- 26 October 2018 – Networking Breakfast
- 15 November 2018 – Presentation by Jan Van Smirren, SUT-US Group on Environmental Forces
- 29 November 2018 – Joint meeting with ocean engineering professional society MTS-SNAME

The SUT-ITPE conducted their board elections on June 10, 2018 where the following students were elected as board members: Andres Ascencio as President, Juan Garrido as Vicepresident, Mariana Alvarez as Treasurer, Diana Acosta as Secretary, Cindy Moo as Public Relations Officer, Blanca Carrillo as Head of Logistics, and Jose Perera as Webmaster.

ITPE student chapter program of activities 2018/2019:

- 28 August 2018 – Welcome Presentation
- 1 September 2018 – Beach Clean-Up
- 7 September 2018 – Visit Elementary/Junior High Schools
- 27 September 2018 – Conference
- 5 October 2018 - Visit Elementary/Junior High Schools
- 25 October 2018 – Seminar
- 22 November 2018 – SUT Conference
- 14 December 2018 – Traditional “Posada”

West Africa Branch

www.sut.org/branch/west-africa



The West Africa branch of the Society for Underwater Technology was launched in May 2018. The branch currently operates in the Lekki area of Lagos State with three staff members who undertake responsibility for events management, marketing, administration, cleaning and general office work. Since its launch in May, the West Africa Branch has experienced a solid year in continuing to maintain its standing in the community and its operations.

The most significant event from last year was SUT's partnership with TOTAL to run the signature Subsea Awareness Course for its engineers in Lagos Nigeria. The Subsea Awareness events continue to be very popular and the general feedback as to the quality and content of the course has remained very positive. We also participated in the National Association of Petroleum Explorationists Conference & Exhibition. The conference provided seminars and ran courses and technical events providing industry exposure and interaction.

The branch has also undertaken an educational initiative in partnership with the University of Nigeria Nsukka with a view to establish the University's first Masters of Science in Subsea Engineering.

The Local branch have also supported the Oil and Gas Association of Nigeria (OGTAN) event with the theme "Human Capacity Development as a Driver for National Transformation: Issues and Possibilities". This is geared towards fulfilling one of OGTAN's key objectives – bridging the gap between Nigeria's tertiary institutions and the oil and gas industry.

The committee remains strongly enthusiastic, imaginative and creative, and we welcome the fresh ideas of the new committee members. We are strongly seeking for Support and sponsorship from member organizations, industry, education and other learned societies, and we are optimistic getting desired support on a continuous basis. The new committee has been working solidly on the branch various activities and initiatives, with a good spread of participation across the committee member.

Our relationship with energy Institutions of higher learning continues to be strong, with the student chapters of the local branch of SUT to be established in African University of Science & Technology, University of Nigeria Nsukka, Federal University of Technology Owerri, Obafemi Awolowo University Ile Ife, University of Ghana and Nkwame Nkrumah University of Science & Technology. We have continued our collaborative engagement with the Offshore Technology Institute UNIPORT and PTDF, while ensuring our respective identities.



David Agazuma

Committee

Branch President

David R. E. Agazuma

Chair Prof. Francis

Ifeayin Anyasi

Vice Chair Prof. Kehinde

Abiola John

Vice Chair Nwogu

Chukwuemeka Nnamdi

Vice Chair

Dr Anietie Umofia

Vice Chair

Prof. B. I. Imasogie

Honorary Secretary

Dr Oloruntoya Daniel

Toyin

Honorary Treasurer

Dr Emmanuel Ufuah

Administrative Secretary

Nnenna Sandra Njoku

Dr. Isa Ali Ibrahim Pantami
 Prof. Kingston Nyamapfene
 Prof. Peter Azikiwe Onwualu
 Prof. M.A. Akintunde
 Prof. Mark Adom-Asamoah
 Prof. Esther U Ikuhuria
 Prof. G. I. Nwandikom
 Prof. K.D.H Bob-Manuel
 Prof. Sunny Iyuke

Prof. Joseph Fuwape
 Onuoha Okechukwu
 Ogbebor Anthony Osagie
 Celestine Imhanbibbi Okonokhua
 Prof. Francis Warings Yao Momade
 Nkiruka Helen Agazuma
 Prof. Kwasi Obiri-Danso
 Wopa Kamila Maliki
 Prof. Osagie Ighodalo

Prof. Ukwuoma Okechukwu
 Dr. Afe Mayowa
 Prof. Daniel Obikwelu
 Prof. Onwona-Agyeman
 Prof. Ogbonna Ukachukwu Oparaku
 Bank Anthony Okoroafor
 Dr. Ahmed Galadima Aminu
 Uluocha C. Christian
 Prof. Bolu Christian Amaechi

West Africa Branch

contd.

Committee

Committee members continue to provide support to the branch. We would like to thank all committee members for their efforts in enabling us to start up and run the branch. Our Chair, Professor Anyasi, the Dean of Engineering at Ambrose Alli University, will be standing down due to his other commitments. We thank him for his contribution, and will seek a replacement in coming months.

Finance

SUT West Africa Branch achieved a small surplus of funds due to the running of unbudgeted two major training events. This will further enhance the branch standing to remain self-sufficient and to completely avoid indebtedness of any sort.

Technical Evenings, Courses and Seminars

SUT courses and technical evenings continue to attract great support. Our branch has focused on offering the subsea awareness course, resulting in the continued success of this event attracting delegates and providing financial surpluses for use in the core SUT activities and payments of bills.

So far, and since the launch of the local branch, the following events have been undertaken by the branch:

- Subsea Awareness Course – Specifically designed to meet the needs of the TOTAL Nigerian Engineers
- Subsea Production and Engineering Course – Delivered for the University of Nigeria Faculty of Engineering staffs. This is a collaborative effort between the University and The Local Branch to establish Subsea Engineering Programme

The Branch have also developed new courses that were organized and coordinated with the industry and assistance from the staffs and many of the committee members.

The courses developed are:

- Offshore Pipeline Design, Construction & Installation Methods
- Subsea Systems Integrity & Reliability Engineering
- Fundamentals of Subsea Engineering
- Flow Assurance in Subsea Production Systems
- Subsea Control Systems and Umbilicals
- Oil & Gas Processing Plants Design & Operations

The Committee is always grateful to all the presenters and industry partners for their time and efforts in bringing the newly developed courses and events to realization, and for those generous organizations who have rendered support in one way or the other to the local branch

In addition, the following evening meetings were delivered by local experts and held in Lagos, and Port Harcourt:

- A day meeting on Deepwater Riser Technology – Lagos State
- A day meeting on Subsea Controls and Umbilical systems – Port Harcourt
- A day meeting on SUT presentation and Marine Renewable Energy Technology – Lagos State

Attendance for these meetings were relatively low since the branch have just started its activities again in West Africa, coupled with the fact that proper and adequate awareness was not in place. The Committee is, as always, grateful to all presenters and chairpersons for their time and efforts in bringing the evening meetings to fruition.

Membership

The branch attracted some new corporate and academic members over the year which is very encouraging.

Students have also been encouraged to sign up for SUT individual membership in that they are the future players in the subsea technology world.

Organisations with new Membership of the West Africa Branch:

- African University of Science and Technology Abuja
- Federal University of Science and Technology Owerri Nigeria

West Africa Branch

contd.

- Broron Oil and Gas Limited, Lagos Nigeria
- Obafemi Awolowo University Ile Ife Nigeria
- University of Nigeria Nsukka

We welcome Geodetic Offshore Services Limited & IESL back into membership.

Branch Administration

The West Africa Branch continues to be very effectively and efficiently managed by our three full-time personnel.

Pamela runs the administration, accounts and membership, while Sandra coordinates and organizes all our events with the assistance of Nengi. Their contribution to the growth and success of the branch over the past 10 months cannot be under-estimated.

Annual Dinner

The local branch is planning its first ever annual dinner for November of 2019. We intend to secure reasonable sponsorship and attendance for the annual event scheduled for Lagos, Nigeria

Year Ahead

The SUT West Africa branch faces several challenges in the coming year, in addition to continuing with our core mission. We have plans to run more courses and secure students, individual and cooperate membership. We intend to have strong numbers of student members in that they are the future players in the subsea technology world.

The committee have also agreed collectively to always get payments of courses and events before delivering them to clients as this will help eliminate the long wait for payments to come through for services rendered.

In order to realize adequate annual budget, the branch have reach out to the industry for sponsorship, and we do hope our request will be a successful one.

Yet again this year has proven to be hectic with many committee members working hard in projects and traveling frequently. The branch has remained structured with a focus on assisting the subsea industry in meeting the technical and personnel resource challenges ahead.

Subsea Awareness Course

The branch held a Subsea Awareness Course during the reporting year, with the help of TOTAL, who contacted the local branch to help deliver the course specifically for it's staff. The branch engaged Jim Neffgen to deliver the course as he is a trainer with TOTAL.

We built on the previous experience of Branch members in delivering training courses to West African-based companies. We delivered a successful course to TOTAL and look forward to continuing this relationship.

Branch officers, and what duties they have performed:

- Ms Nengi Jumbo – Events coordination and Marketing
- Sandra Njoku – Events Coordination and Management
- Pamela Okojie - Administration, Accounts and Membership

Planned Activities

- Launch the Critical Requirements for Engineering Subsea Talents initiatives
- Focus on marketing to sign up new cooperate, students and academic membership of the SUT
- Establishment of the Student Chapters of SUT in UNN, UNIPOINT, FUTO, AUST, KNUST and OAU
- Establishment of Subsea Engineering Programmes in the University of Nigeria Nsukka
- Run Subsea Engineering Course in Lagos, Port Harcourt and Accra, Ghana
- Run the Subsea Systems Integrity & Reliability Engineering Course
- Annual Dinner & AGM



Education and Training

The SUT Education Committee is responsible for our Learned Society remit as a body able to transfer knowledge about underwater technology to the wider general public, especially the next generation of potential scientists, engineers, technologists and all who will work in the support services that enable our sector to thrive, and for SUT to meet our global responsibility as a champion of good ocean stewardship. We also have responsibility for oversight of SUT's Educational Support Fund, covered elsewhere in this Annual Report.

We educate and inform through events, publications and our social media feeds on Facebook, Twitter (@SUT_news), YouTube and Instagram and through attending schools talks and careers events. In the UK the largest of these is held by Aberdeen Branch under their own auspices, & in London we held schools events at Lloyds Register & a junior school in Southwark, plus talks to undergraduates and Masters students in Southampton, Strathclyde, Plymouth and Portsmouth. Other schools and universities accessed our careers information web pages or phoned the Head Office for advice. A popular option for younger children is our colouring-in book based on 'Can a Lobster be an Archaeologist?' which can be downloaded for free from www.sut.org/wp-content/uploads/2019/07/Lobster-colouring-book-website-FINAL.pdf

SUT has supported the European Marine Science Educators Association (EMSEA) in recent years, with SUT members & staff presenting papers and posters at their annual meetings. In October 2018 the EMSEA gathering took place in Newcastle where CEO Steve Hall gave a keynote talk, and SUT Education Chair Sue John was elected to their governing body. EMSEA play a key role in promoting the concept of 'ocean literacy' across Europe, and the meetings attract participants from the USA, Canada and China too.

Until SUT's Council meeting of April 2019 we also covered the remit of Training, but Council has taken the decision to form a separate Training Committee instead as the tasks required to develop and market a new generation of training courses and to support coming Professional Registration are quite distinct from the Education role.

Despite our Committee having a large membership we have had low participation in meetings this year, and have only met online. A small nucleus of enthusiastic members have carried out most of the duties of the Committee, so for the new year we plan to launch a refreshed Education Committee with a more international membership reflecting the wider global activities of SUT, and to encourage more education activities in Branches that currently do not engage to a great extent in schools and colleges liaison.



Sue John

Committee

Chair Sue John

- John Allen
- Emily Boddy
- Fiona Crouch
- Jim Grant
- Steve Hall
- Dr. Bev MacKenzie
- Roger Palmer
- Jonathan Potts
- Duncan Purdie
- Laila Sadler
- Tim Slingsby



EMSEA Newcastle 2018



Making ROVs at EMSEA Newcastle 2018

Educational Support Fund Management

SUT continues to support well-motivated, high-achieving students who are studying marine science, engineering and technology subjects at universities from all over the world, with priority given to courses taught at institutes who are SUT supporters.

Our US Branch leads in this respect, raising thousands of dollars of corporate sponsorship to support scholars from Texas A&M, Rice, and Houston universities for now, with others lined up for the future. In the UK we operate through the Education Support Fund to support undergraduate & Masters students, and via our relationship with the Sonardyne Foundation to support PhD studentships.

Our West Africa branch is working on bringing studentships to the regional community, and our China Branch is also on the pathway to establishing a range of studentships in the near future.

In 2019 the ESF supported students from Scotland and the USA, based on a very high standard. Our most recent student from the Scottish Association for Marine Science is Alicia McDowall, and she has accepted a studentship named in honour of SUT Aberdeen Branch former Chair Chris Milner, who sadly passed away in the summer of 2019. She shows exactly the mix of academic excellence and a commitment to industry that we look for in our applicants, and we look forward to seeing how much she achieves in the next two years.

In addition to the students in USA & Scotland, our current cohort of students include those studying at Plymouth, Liverpool, Southampton, the University of Highlands and Islands, & James Cook University in Australia.



Summary of Undergraduates graduating in 2019

Southampton - Oceanography 1st
Liverpool - Marine Biology with
Oceanography 1st

Summary of Undergraduates continuing in 2019-2020

Plymouth - MEng. Marine Technology

Pictured new ESF student Alicia McDowall, attends SAMS. She will be graduating in 2022 and is studying Marine Science with Oceanography and Robotics.

Educational Support Fund

contd.

ESF students have studied at...

- Aberdeen
- Bangor
- Bristol
- Cambridge
- CCOM (USA)
- Cranfield
- Glasgow
- Heriot-Watt
- Imperial College
- James Cook (Australia)
- Liverpool
- Newcastle
- Plymouth
- Robert Gordon
- SAMS
- Southampton
- Strathclyde
- UEA

...taking courses in...

- Applied Marine Geosciences
- Applied Physical Oceanography
- Chemical Engineering
- Earth Sciences Ocean Mapping
- Electronic Engineering
- Engineering in the Coastal Environment
- Environmental Technology
- Geology with Physical Geography
- Marine and Environmental Protection
- Marine Biology
- Marine Geotechnics
- Marine Science
- Marine Science with Arctic Studies
- Marine Science with Oceanography and Robotics
- Mechanical and Marine Engineering
- Mechanical Engineering
- Meteorology and Oceanography
- Naval Architecture
- Oceanography
- Oceanology
- Offshore Engineering
- Offshore Engineering
- Offshore Ocean Technology
- Petroleum Geoscience Engineering
- Pipeline Engineering
- Pipeline Engineering
- Robotics and Automated Systems
- Safety Engineering and Risk Management
- Ship Science
- Subsea Engineering

274 Students supported



156 Undergraduates



118 Postgraduates



£500,000
given to
students
since 1990

International



Dr David Kirkley

Committee

Chair Dr David Kirkley
Secretary Stephen Hall

Laurie Ayling
Richard Binks
Brian Green
Rex Hubbard (Perth)
Frank Lim (China)
Geoff Lyons
Peter Metcalf
Jim Neffgen
Dr Zenon Medina-Cetina (Houston)
Ian Wilson (Perth)

The International Committee has continued in its role as a Committee of Council to scrutinise and debate issues relevant to international aspects of the Society. The emphasis has moved from encouraging growth through the establishment of new branches, though that is still an important activity, to studying issues arising as the international branch network develops and becomes more complex. It is the Society's policy to ensure that all non-UK branches are legally constituted in their respective jurisdictions on a stand-alone basis. At present, the Norway and China branches are not fully in compliance with this and efforts continue to try to achieve a change of status.

The independent legal status of non-UK branches does bring problems of co-ordination and control. As a UK corporation and registered charity, SUT is restricted in what it can do there. Reliance is placed on written Branch Agreements and branch Statements of Ethical policy. Review of these key documents is a current committee task. A similar task relates to the Rules for the Formation of Branches, of which there appears to be several variants and it is not clear which have been approved and issued by Council.

It is good to see branches taking shape in Atlantic Canada and in the UAE region of the Gulf. Discussions concerning a possible branch in Egypt recommenced but conditions there remain difficult. Elsewhere, branch activity continues to ebb and flow. The downturn in the offshore oil and gas industry continues to have an effect. The West Africa Branch based in Lagos has required particular attention as the branch there was only re-established on a probationary basis. After 12 months, and with some difficulty in establishing its exact status, the committee recommended that Council extends the probationary period. Details of activity in the different branches will be found elsewhere in this report.

During the year, Frank Lim and Rex Hubbard joined the committee. They are the respective chairmen of the China and Perth branches. Jim Neffgen also joined the committee. His experience in West Africa will be valuable.

Although it is happening slowly, communications and co-ordination between branches does seem to be improving. Steve Hall as SUT Chief Executive is very active in this respect and the committee would like to express its thanks to him for this.

Policy Advisory

We convene the SUT's Policy Advisory Committee when we need to respond to new situations where SUT can provide helpful input, such as new marine licensing legislation, developments in international marine law, or where governments, industry or academic partners have requested SUT expert advice.

Quite often a full meeting of the committee is not required where the information is straightforward to provide, for example during 2019 the Committee Chair has been able to input directly to the UK government consultation on fully protected marine conservation zones as this was a questionnaire-based survey and did not require convening the committee, with email contact sufficient to gather required data.

We work closely with our sister Learned Societies & Professional Bodies such as IMarEST to ensure a consistent response to policy makers from across our sector.

Whilst the PAC did not hold a full meeting during the annual report year, members attended meetings of the Parliamentary Science & Technology Committee, the Chair was invited to attend meetings at UNESCO's Intergovernmental Oceanographic Commission and the European Marine Board, and the Chair & Mr Broughton were invited to Parliament by Lord Hunt of Chesterton to meet with members of the Advisory Committee on Protection of the Sea.

Most of the members have regular contact with civil & public servants, industry & academia in the UK & overseas.

The Committee is expected to become more active next year following interest from governments in asking SUT and our partners to develop an advisory document on aspects of legal policy regarding marine autonomous systems, this will be done in coordination with the Panel on Underwater Robotics.



Steve Hall

Committee

Chair S Hall

DA Brookes

Dr DW Kirkley

K Broughton

Dr P Verlaan

Lt Cdr RJ Rogers

Dr B Mackenzie (*IMarEST partner*)

Publications



Martin Sayer

Committee

Chair Martin Sayer
Secretary Elaine Azzopardi

Emily Boddy
Michaelagh Broadbent
Prof Gwyn Griffiths
Steve Hall
Dr Ralph Rayner

The Publications Committee meets approximately twice a year to consider and direct the publications originating from, or supported by, the Society. These include the publication of the academic journal, *Underwater Technology*; the Society’s magazine, *UT2* and the online version *UT3*; books or conference proceedings originating from the Society’s special interest groups; and the Society’s website: www.sut.org.

The Society’s academic journal *Underwater Technology* continues to be published three times a year. The journal continues to be listed on the Thomson Reuters / Clarivate Analytics Emerging Sources Citation Index (ESCI) from where it will be evaluated for re-entry into the flagship indexes, including the Science Citation Index Expanded (SCIE). The citations from the ESCI are included in the citation counts for the Journal Citation Reports and contribute to the Impact Factors of other journals. The journal is discoverable via the Web of Science with an identical indexing process to any other indexed journal. This includes full citation counts and author information.

The Society for Underwater Technology continues to make the journal completely and instantly open access with no article publication charges. The journal is hosted in electronic format by Ingenta Connect (www.ingentaconnect.com/content/sut/unwt), it is available in e-reader format (issuu.com/sut7), and all articles are provided with DOI (digital object identifier) numbers. The journal is licensed under a Creative Commons Attribution 4.0 International License (CC-BY).

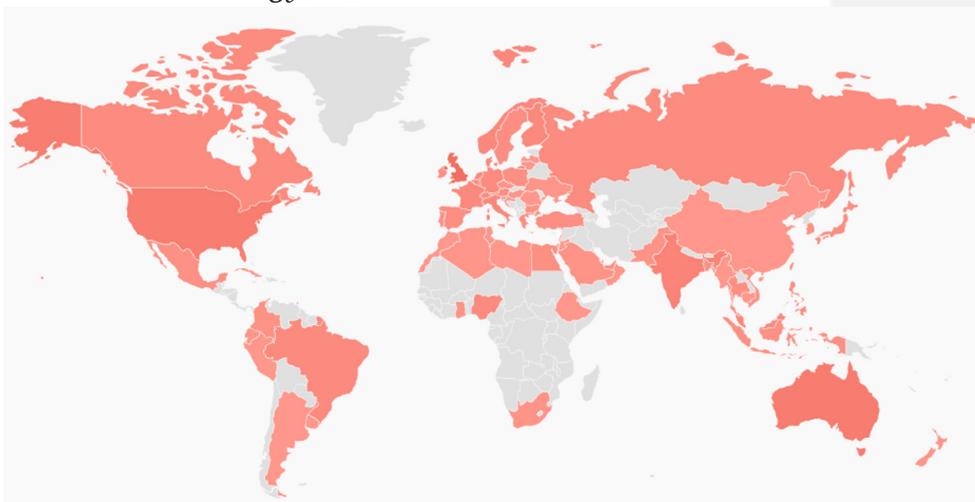
Ingenta stats for the reporting period July 2018-June 2019:

- Table of content views: 8760
- Abstract views: 17,727
- Full text downloads: 2453

Issuu statistics for reporting period:

Reads: 2,144 (from the top 10 countries listed below). Total reads since starting electronic publishing (November 2016) is 6367.

Underwater Technology readers around the world



Top 10 country locations of Underwater Technology readers on Issuu

United Kingdom	1,257
Australia	271
United States	232
India	105
Singapore	56
Denmark	50
Italy	47
Norway	44
Finland	41
Malaysia	41

Publications

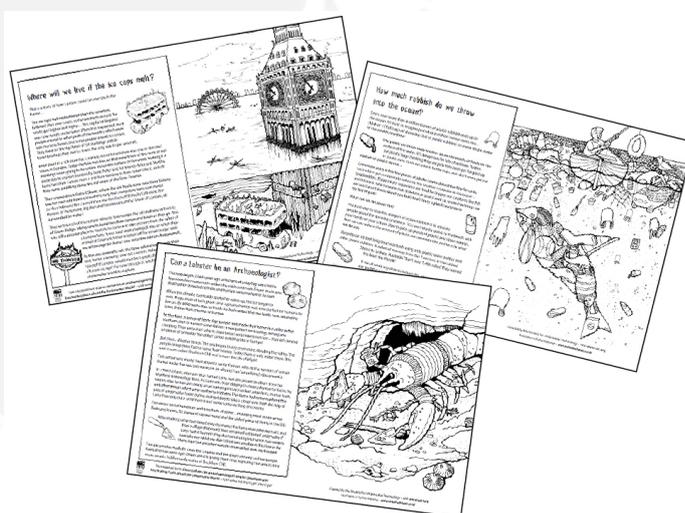
contd.

Between June 2018 and June 2019, the journal received 17 submissions. Seven of these were rejected following peer review giving an acceptance rate of 59%. The country affiliations of the senior submitting authors included UK, Malta, Denmark and Italy.

The SUT magazine *UT2*, which is a joint venture between the SUT and Dr John Howes, was published six times in 2018-19. The magazine continues to receive good feedback from the membership; *UT3* is the online version of *UT2*.

The Publications Committee is also acting on behalf of the SUT as the dissemination partner for the EU-funded BRIDGES project (Bringing together Research and Industry for the Development of Glider Environmental Services). This project is funded for four years; more information can be found at: www.bridges-h2020.eu/

The summer of 2019 also saw the online publication of the 'Can a Lobster be an Archaeologist?' colouring book. Illustrator Rachel Hathaway who had created the drawings for the original book, re-drew seven chosen illustrations so they were suitable for colouring pages, and SUT Publications Officer Emily Boddy re-wrote the corresponding stories so they were appropriate for the younger reader (aimed at age 6-7). The colouring book was released as a free download available on the SUT website so the pages could be printed and coloured in by young ocean enthusiasts over the school holidays. This small contribution to the Society's educational outreach was deemed a huge success and the link has been widely shared. The book is available to download here www.sut.org/can-a-lobster-be-an-archaeologist-now-available-as-a-colouring-book/.



The Publications Committee continues to receive excellent, enthusiastic and highly organised support from the SUT. Elaine Azzopardi provides editorial assistance for the Journal while based at the Scottish Association for Marine Science in Oban. Emily Boddy continues as Publications Officer and works on all other SUT publications plus the website.

Diving and Manned Submersibles



John Bevan

Committee

Chair John Bevan
 Secretary Steve Hall
 Clerk Emily Boddy

- Gavin Anthony
- Cdr Alan Bax
- Neil Brock
- Mark Caney
- Taira Caton
- Mark Dunkley
- Paul Evans
- Oliver Firth
- Alison James
- Gerrard Laden
- Sally Marine
- Tony Marshall
- Garry Momber
- Martin Sayer
- Don Shires
- Judith Tetlow
- Graham Wilson

The Diving and Manned Submersibles Committee continues to meet regularly, aiming for three times a year. The committee operates on two levels: it is a body that represents all sectors of the diving and diving-related industry and is viewed as an independent group that can generate informative guidance on matters that concern operational efficiency and/or safety; and it is a group that continues to monitor and evaluate advances in diving-related techniques and technologies.

At present, the Committee is made up of representatives of the Offshore Commercial, Inshore Commercial, Recreational, Scientific and Archaeological, and Media diving sectors. There are also members that practice diving and hyperbaric medicine, and the current Principal Inspector of Diving for the UK Health and Safety Executive also attends.

In addition to representatives providing regular updates from their sectors, the Committee hosts presentations and discussions on a wide range of diving-related issues. In this reporting year the Committee has considered the impacts of a recent review by NHS England of emergency recompression chamber availability for divers operating on the south coast of England. Presentations have been given covering the history of military diving, the application of stereophotogrammetry underwater, and the rescue of offshore divers at depth separated from their diving bell.

There were two papers published in the SUT Journal *Underwater Technology* during this reporting year that related to the aims and objectives of this Committee. Gambin *et al.* (2018) employed both manned submersibles and closed-circuit rebreathers during their exploration of a Phoenician shipwreck off Xlendi bay, Gozo (*Underwater Technology*, volume 35, pages 71-86). In a separate report, Angelini (2018) provided a philosophical and practical review of dive computer decompression models and algorithms (*Underwater Technology*, volume 35, pages 51-61).

Environmental Forces

The SUT Group on Environmental Forces (SUTGEF) held three events during the year to the end of August 2019. The first event (114th Meeting) was held in Imperial College, London, on 26 Sept 2018 where two presentations were made. One was given by Dr. Emiliano Renzi, University of Loughborough, on *'Wave energy systems modelling – the case of the oscillating wave surge converter'*. The second was by Dr. T.A.A. Adcock, University of Oxford, on *'Departures from linear theory – changes to the average shape of large waves from fast non-linear physics'*. In addition, Prof. Qingwei Ma gave a summary on the activities of ISOPE 2018.

The second event (115th) held at City, University of London on 17 Jan 2019, was in conjunction with the EPSRC project meeting on *'Fully Nonlinear Simulation of Two Vessels in Launch and Recovery'*. The meeting heard new progress made by the research team on Model experiment and numerical analysis for hydrodynamic interaction of launch and recovery operations, Adapting OpenFOAM for the simulation of wave structure interactions in launch and recovery operations and Development of Zonal Hybrid model and its application to multi-body dynamics. Speakers were from Plymouth University, Manchester Metropolitan and City, University of London.

The third event of the year (116th Meeting), held at St Peter's College, Oxford on 23 May 2019, saw two presentations. One was made by Prof. Peter Stansby, University of Manchester on *'Slack-moored floaters for wind and wave energy: linear diffraction modelling with mean forces and wave basin experiments'*. The second was given by Prof Paul Taylor, University of Western Australia, discussing *'Boxes in waves - gap resonance, frequency tripling, and tertiary interactions'*.

As in previous years, SUTGEF continues to provide a forum for vigorous debate between members and guests from academia and industry. Meetings are well attended. All the invited speakers were awarded a certificate.



Qingwei Ma

Committee

Chair Prof QW Ma
Secretary AN Moore

Prof T Adcock
R Addelese
Dr R Ahilan
Prof N Barltrop
Dr WJD Bateman
Prof PW Bearman
F Beiboer
Dr M Birkinshaw
Dr E Buldakov
D Carter
Prof DM Causon
Prof JR Chaplin
Dr M Christou
RL Davies

Dr KR Drake
Prof R Eatock Taylor
AJ Fyfe
Dr R Gibson
Prof D Greaves
G Grewal
S Hall

Dr J Hamilton
Dr G Jeans
M Johnson
I Leggett
Dr A Raby
Dr R Sheikh
Dr E Spentza

Dr J Spinneken
R Sproson
Dr R Standing
Prof P Stansby
Prof C Swan
Prof P Taylor
Dr P Tromans

T van den Bremer
A Watson
W Tan
R Webb
Dr G Weymouth
Dr J Zang

Marine Renewable Energies



John Sharp

Committee

Chair Prof J Sharp
Secretary S Hall
Clerk E Boddy

- N Bennett
- S Cheeseman
- J Colby
- P Davies
- P Fraenkel
- J Grant
- J Griffiths
- J Hulm
- D Kerr
- Dr B MacKenzie
- Dr S Merry
- N Morgan
- T Morris
- M Murphy
- Dr R Norman
- J Patten MBE
- G Plant
- R Sykes
- S Wilson
- M Wright

The committee has held its usual four meetings during the past year with presentations from Martin Murphy (chair, Marine Energy Wales), Elva Bannon (Wave Energy Scotland), Henry Jefreys on Super-Gen and also from the Marine Energy Council.

The committee has regularly reviewed recent conferences relating to marine renewable energy, both in the UK and abroad. The committee continues to encourage participation from outside the UK with participants providing either written input to the Committee or participating by telecom; this is important as there are significant international developments in the marine renewables area. During the past year these have included inputs from both the US and Canada. The committee also receives regular briefings from ORE Catapult, Crown Estate Scotland and an update on relevant standards.

The annual plan of action was reviewed and updated at the January meeting. Some topics were highlighted which had not been fully addressed in the past year and the committee agreed to focus on these in the coming year. Following the plan of action the April meeting was held outside London at the National Oceanography Centre in Southampton.

The topic of floating wind is of growing importance with a 30MW farm, Hywind Scotland, already producing electricity off the Aberdeenshire coast and a second project, the Kincardine Offshore Windfarm in development, also off the Scottish coast – the initial turbine in the farm has been generating power since 2018, a further six are planned and the project is due to be fully operational in 2020. The Committee decided in 2018 to include floating wind in its area of interest to complement wave and tidal energy and had a presentation in 2018 from Crown Estate, Scotland. It is now a regular feature for discussion at the committee’s meetings.

The annual All-Energy Conference was held in Glasgow in May; SUT is the Learned Society Patron of this event. The committee assisted with the selection of the proposed contributions to the sessions of the wave and tidal energy programme. Members of the Committee also chaired relevant sessions at the conference.

The 2019 Lennard-Senior award, initiated in 2011, was presented at the All-Energy conference to Andrew Scott (CEO, Orbital Marine Power Ltd). As in previous years candidates were nominated by Committee members for the award and then voted on those put forward. Orbital Marine Power is a leading company in floating tidal stream energy. Their 2MW turbine is the most powerful in the world.



MREC Chair John Sharp with SUT CEO Steve Hall, and past winners at All-Energy in May 2019, presenting Andrew Scott the 2019 Lennard Senior Prize

Offshore Site Investigation and Geotechnics

The past twelve months have been very busy and successful for the OSIG committee which has worked very hard to maintain the momentum of previous years. The key highlights of the past year are summarised below.

Short courses for industry and students

In June 2019, a one-day masters course was held at Imperial College, London, for the ninth successive year. The course was attended by approximately 50 MSc students from Imperial College and other institutions. The committee would like to thank Richard Jardine of Imperial College London and Tim Carrington of Fugro for organising the event. The event has become a regular event for the committee and fulfils one of our key aims of attracting students into industry.

A very successful Geoforum was hosted in Bristol with a very good level of attendance.

Guidance notes and standards

The final version of, 'Guidance notes for Geophysical and Geotechnical Ground Investigations for Offshore Renewable Energy Developments' that was published in 2014 and is now available for download from the SUT website and is becoming an important reference document in the growing offshore renewables market sector. Given the rapid development of the offshore renewables industry the committee is working hard on revised document that we hope to publish in first quarter of 2020.

The final version of, 'The Top Hole Well Engineering Guidelines' is now published and was launched at the 2017 OSIG conference. It is now available for download from the SUT website.

Work on updating the other SUT-OSIG Guidance Notes has also progressed with sub-committees continuing work on the following documents.

- Site Investigations for Marine Pipelines and Subsea Structures

Work has also commenced on the production of a new guidance note on the shallow gas risk in geotechnical drilling.

Members also continue to actively participate in the following international standards:

- ISO Standard 'Marine Soil Investigations'
- ISO Standard 'Geophysical Site Investigation'
- OGP-D 'Guidelines for the Conduct of Offshore Drilling Hazard Site Surveys'



Andy Barwise

Committee

Chair Andy Barwise

Peter Allan
 Ricardo Argiolas
 Jon Arthur
 Paul Baggaley
 Mike Baker
 Andrew Benson
 Emily Boddy
 Michael Brown
 Nigel Carey
 Tim Carrington
 Eric Cauquil
 David Colliard
 William Cleverly
 Mick Cook
 David Coursey
 Michael Cowie
 Karen Dalton

Andrew Deeks
 Justin Dix
 Jim Edmunds
 Ian Finnie
 Scott Gooding
 Chris Golightly
 Steve Hall
 Kevin Hampson
 Aime Harrison
 Majid Hesar

Ray Hobbs
 Dei Huws
 A Ivanovic
 Richard Jardine
 Suzanne Lacasse
 Thomas Langford
 Peter Larkin
 Vincent Latron
 Mark Lawrence
 Dafydd Lloyd-Jones

Tom Lunne
 Alisdair MaConochie
 Rich Metters
 Neil Morgan
 Simon Oakley
 Richard Orren
 Julian Osborne
 Miguel Pacheco-Andrade
 John Powell
 Toby Powell

Oyvind Ruden
 David Rushton
 Rupert Rowland
 Richard Salisbury
 Roi Santos
 Alex Searle
 David White
 Phil Wilson
 Gareth Wood
 Guangquan Xu

Offshore Site Investigation and Geotechnics

contd.

Houston and Perth Branches of the OSIG Committee

The Houston and Perth OSIG Committees continue to develop their programme of events to strengthen their ties between industry and academia. With regular exchanges of meeting minutes, there is a greater alignment and understanding of a global OSIG community

Closing comments

The OSIG committee has continued to work hard on the short courses and guidance notes and will be running a number of short courses and two-day events through 2019 and 2020 and work has commenced on the planning for the 2022 international conference.

Salvage and Decommissioning

The SUT International Salvage & Decommissioning Committee continues to go from strength to strength, led very largely by the commitment and drive of the Decommissioning & Wreck Removal sub-committee, working out of Aberdeen, co-chaired by Don Orr and Karen Seath from its formation. Sincere thanks goes to Don who stepped down in December 2018. His thoughtful, yet purposeful approach has done much for marine science / oil & gas interaction and has helped open, bottom-up debate on the pros and cons of OSPAR Decision 98/3. Karen continues as Marine Science Chair, and following a review, committee membership has strengthened to cover academia, industry and regulatory bodies.

The highlight of the year remains the SUT/MASTS Salvage & Decommissioning Workshop at what is now the UK largest gathering of marine scientists, with industry and regulators. Sensitive issues, such as the use of explosives as efficient cutting tools have been raised within a knowledgeable and multi-disciplinary audience for open and constructive discussion – as befits a learned society – alongside the latest developments in immersive simulation and visualisation, and the challenges of dealing with legacy issues, such as the SS Richard Montgomery.

Looking forward, during this coming SUT year, an updated version of the Committee's founding document, will be updated to Developing a Consistent, Cross-Sector Approach for Assessing the Impact of Man-Made Materials, Objects, Structures and Substances (MOSS) on the Marine Ecosystem, with focus on legacy issues.

There are also plans to expand the series and also take an active part in London Shipping week.

Thanks goes in particular to Karen Seath, who continues to take on new challenges and keep everyone informed and in contact; and also the numerous members whose hard work, practical and financial support for the SUT/MASTS Workshop make this progress possible.



Moya Crawford

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International Underwater Vehicles and Robotics Group



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Ting Zou

The SUT/ECOR Panel on Underwater Robotics had two meetings during the reporting period of July 2018 to June 2019. A meeting was held in November alongside the IEEE OES AUV 2018 Conference in Porto. During this meeting a facilitated workshop was held to determine critical issues and themes in the field of underwater robotics for the next 5 – 20+ years, which were then prioritized based on importance and time horizon. For the next five years, achievable developments in AUV technology include application in deep-water oil and gas operations, autonomy, navigation, under-ice monitoring of oil spills and the use of larger vehicles as “mother ships.” For the 20+ years time frame, we might see developments in artificial intelligence for AUVs, applications in remote environments such as under-ice and on planets, step changes in underwater communications, and energy storage. These issues are summarized in the PUR Porto Statement available on the SUT website. A teleconference system was enabled for the committee and invitees from all over the world met in April 2019 to exchange updates and ideas about AUVs. The meeting was also aimed to discuss further on how the panel can support solutions to the issues identified at the workshop in Porto. In response to the results from the workshop, the panel has proposed to initiate research collaborations on the identified issues and keep the panel active with regular meetings and publications. The panel is to meet again later in 2019.



Panel on underwater robotics committee meeting at university of Porto, November 2018