



Annual Report

2017-2018



Society for Underwater Technology

Annual Report 2017-2018

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President's Foreword



President: Ralph Rayner

It is a great privilege to have been asked to become President of the Society at such an exciting time in its history. Looking back to when I joined the SUT over forty years ago much has changed. Back in the 1970s, the offshore and gas industry was in its infancy, marine renewables were barely on the radar and wild fisheries far outweighed production from aquaculture. Satellite oceanography was just beginning and instruments for measuring the oceans were limited in their capabilities and sparsely deployed.

In the last forty years or so we have seen offshore oil and gas and, more recently, offshore wind, become major industries. Protein production from aquaculture has overtaken that from wild fisheries. Ocean observation satellites circle the Earth, observing everything from sea surface temperature and salinity, to wave heights and currents. A vast array of instrumentation is in use to measure the oceans and, together with observations from satellites, to enable an unprecedented understanding of how the ocean works and the ability to make predictions about its future.

As a leading learned society for ocean professionals, the SUT has made a significant contribution to these achievements. Members' work on technical committees, with branches, organising and running conferences, providing training programmes and delivering educational outreach has facilitated progress in ocean engineering, science and technology, helping to deliver safe, effective and environmentally sound use of the ocean and its resources. Our activities have helped to hone the knowledge and skills of today's ocean professionals and to inspire the young professionals of the future. Looking into that future, the opportunities and challenges have never been greater.

In its recent report on the ocean economy, the Organisation for Economic Cooperation and Development estimates that economic activities associated with the ocean amounts to around US\$ 1.5 trillion, or approximately 2.5% of world gross value added, with direct full-time employment in the ocean economy amounting to around 31 million jobs. The report projects rapid growth in economic activity associated with the ocean, with ocean-based industries having the potential to outperform the growth of the global economy as a whole, both in terms of value added and employment. Their projections suggest that by 2030 the ocean economy could more than double its contribution to global value added, reaching over US\$ 3 trillion per annum.

Delivering this economic potential, at the same time as protecting the ocean environment, poses major engineering, scientific, technological and societal challenges. It is clear that the ocean faces unprecedented environmental threats. Foremost are those related to ocean health; over-exploitation of marine resources, pollution, rising ocean temperatures and sea levels, ocean acidification and loss of biodiversity. Ocean health also plays a vital role in determining the health of the planet upon which we all depend, from the oxygen that we breathe; half of which comes from the ocean, to the water that we drink; almost all of which is ultimately regulated by the ocean; as well as moderating climate and absorbing roughly twenty five percent of anthropogenic carbon dioxide emissions.

The Society and its members have a key role to play in delivering this growth in the ocean economy, at the same time as protecting the ocean environment and its pivotal role in sustaining the health of our planet for generations to come. We 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 work to engage young people to join the ocean science and technology community and play their role in determining our ocean future.

Awards 2017-2018



Awards at the AGM 2017: (L-R): David Saul, Dave Shaw, Ralph Rayner

New Fellows

Paul Benstead
Kim Faulk
Steve Johnson
Tony Laing
David Saul
Shawn Williamson

Hon Fellows

Ralph Rayner



Awarded at All-Energy 2018:
John Sharp presents the Lennard Senior prize to Sue Barr

President's Award

Awarded to John Partridge 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 Dave Shaw, for his outstanding contribution in the field of underwater film making over many years.

Lennard-Senior Memorial Prize

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

Council's Summary of Activity 2017-2018

Membership

The membership of the Society at 30 June 2018 had again decreased since the previous year end, with the decrease in Corporate membership being particularly significant as a result of the continued downturn in the oil and gas industry though Student membership showed a large increase. Again, this was largely expected, but anticipated to be levelling out at these figures.

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 2018 amounted to £209,929 compared with an amount of £194,964 at the end of the previous year, allowing for gains on investments.

Educational Support Fund

A report for the year ending 30 June 2018 from the Educational Support Fund Management, together with a copy of the audited accounts of the Fund, amalgamated as 'restricted funds' within the main account, is included in this Annual Report. This year the expenditure exceeded income to the Fund by £8,019, compared with expenditure exceeding income by £5,984 in 2016–2017. This led to a net change in the capital funds for the Educational Support Fund from £197,444 in 2017 to £189,425 in 2018, when gains on investments are taken into account.

D. Brookes
Honorary Secretary
18 October 2018

Registered Office: 1 Quality Court, London, WC2A 1HR, UK.

Membership Summary

Corporate Members 151

Individual Membership 1017

Category	2018	2017
Hon. Fellows	17	17
Fellows	102	99
Full members	744	847
Students	154	155
Corporate individuals	832	765
Total	1849	1883

Table 1

Financial Summary Unrestricted Fund (£)

Category	2018	2017
Income	646,632	332,045
Expenditure	642,282	469,689
Surplus/ (deficit)	4,350	(137,644)
Transfers to restricted fund	-	-
Gain/(loss) on investments	10,762	18,503
Retained surplus/ (deficit)	15,112	(119,141)

Table 2

Chairman's Report



Peter Metcalf

This last year has been one of consolidation for the Society for Underwater Technology. The Society's new CEO, Steve Hall, has spent the year engaging with members, branches and SUT stakeholders. In parallel Council has been considering the way forward to ensure the Society's long term future.

During the year progress has been made towards returning the Society to surplus. Council set a target to halve the deficit of 2015/16 during 2016/17 and return to a positive result in 2017/18. Having achieved last year's target Council is pleased to announce that this year's target has also been achieved with a modest surplus. This has only been possible due to the highly successful OSIG conference which was held last September, and the continued efforts of the London Secretariat and the Branch Committees to cut costs and to look at new ways of increasing revenue.

Finance

The 2017/18 financial outcome is a small surplus of £7k thanks to the major contributions from OI 2018, SSAC and, most particularly, the excellent attendance and sponsorship that was raised for the OSIG 2017 conference. The figures include £10k for the support of the ESF students which comes from the ESF restricted fund. More specific financial details can be found in the detailed accounts which follow.

It is a well-known fact that the Society has, over the profitable years, accrued sizeable reserves to cover such eventualities as the loss of revenue from courses seen over the last few years. Despite a further depletion of reserves last year, the Society remains in a strong position with comfortable reserves of £399k, of which £189k are the ESF restricted funds.

During the past year much effort has continued to go into further cutting costs. 2017/18 has seen a return on longer term cost saving initiatives including the relocation of the London office to Chancery Lane. New measures continue to be developed by the Finance Sub-Committee working closely with the CEO and his staff to better manage and reduce costs whilst acknowledging the need to maintain the services to the membership as a learned society.

Individual and Corporate membership has shown a further decline. Income from the Journal and other publications has remained essentially static. Council continues to look at Individual membership fees but have no plans at present to increase these further. Corporate membership fees continue to remain unchanged but Council continues to monitor the make-up of Corporate membership to ensure equitable balance is maintained, and a sub-group of Council is exploring how we improve the corporate membership 'offer' to attract and maintain members. There continues to be a turnover of both individual and Corporate members with most of the new members coming through the Branches. It is pleasing to note that the strong interest from student and young engineers in Aberdeen, London, Houston and Perth continues unabated.

Despite the downturn in the market almost all the UK evening meetings and courses have produced a net contribution to Society funds. This is reflection on the rigour imposed on the initial planning of an event and the ongoing monitoring of expected financial outcome. In this way early decisions can be made to cancel an event if necessary without exposing SUT to losses.

Whilst the accounts presented relate to UK and Norway the situation in Perth and Houston demonstrate a similar trend of increasing efficiency and tailoring

Chairman's Report

contd.

expenditure to meet the challenges which the oil and gas industry continues to face. This year has seen a concerted effort by all Branches to diversify their underwater technology activities, thereby reducing the Society's dependence on the oil and gas industry.

Council

Having made significant progress to cut costs last year Council's focus this year turned to realising the longer term cost savings and to look at ways of developing new sustainable revenue streams for the future. A wide spectrum of opportunities is under consideration including embracing new and emerging underwater technologies, seeking possible cooperation with like-minded learned societies and broadening the range of services the Society might offer the members. In addition further thought is being given to the structure and governance of the Society to look at its effectiveness in meeting the expectations of the membership.

These deliberations are in the early stages of development so no further comment can be made at this time but rest assured the CEO will keep the membership informed of developments via his regular newsletter.

Council once again is indebted to those members of Council in faraway places who give of their time beyond the normal call of duty by dint of the diverse time zones between Houston and Perth.

Committees of Council

The Committees of Council continue to support Council in the key areas of Education and Training, Publications and International Development. Council's wish is to see more Branch participation, particularly from overseas, in these Committees. To facilitate this, the Chairs continue to be tasked to seek nominations from the Branches.

On the Education and Training front the Society continues to offer a number of student bursary schemes around the world and it is timely to review the scope of these schemes to develop best practice going forward. There are many examples of good practice of what the SUT should be doing to support schools and career development at a local level and this will be shared for the benefit of all. Whilst the Committee continues to develop educational opportunities there is now more focus on training with on-going discussions with IMarEST and Engineers Australia towards further cooperation.

Council has recommended that a limited number of awards be made from the ESF fund for this financial year together with the honouring of all existing awards. We also welcome the support from Sonardyne that will enable us, for the first time, to jointly-sponsor PhD studentships, with the first two PhDs due to commence in October 2018.

The Publications Committee continue to work to raise the profile of the Society through the continued improvement of citation ratings.

The International Development Committee has been focussing on new opportunities particularly in Atlantic Canada and the Middle East as well looking at the possibility of the Norwegian Branch becoming a standalone entity, and through the Chair of the China Branch we are working hard to raise SUT's profile and membership in the growing subsea sector in China.

Technical Committees

The Technical Committees continue to be the lifeblood of the Society with each Committee growing organically over the life of SUT. The CEO with the support of Council has embarked on a process to review the remits and scopes of each Committee to reflect more closely the needs of the members in today's changing environment. There are many opportunities for the Society to become more prominent in new areas of underwater technology, for example in the support of the offshore wind energy industry.

Where appropriate some committees may elect to set up regional sub committees in association with a local branch and Council would encourage more dialogue between Technical Committees and the Branches.

Of particular note was the highly successful OSIG 2017, a world class conference held every five years. Planning for this event started many years ago and congratulations are in order to the OSIG Committee and all those supporting them for staging such a successful event.

Further details of Technical Committee activities can be found in their detailed reports that follow.

Chairman's Report

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Branches

The worldwide spread of the Society continues to develop with established overseas branches in Houston, Rio de Janeiro, Perth, Melbourne, Kuala Lumpur, Beijing, Bergen, Singapore and most recently the re-emergence of a West Africa branch. Future geographical expansion opportunities continue to be explored as and when opportunities present themselves and funding becomes available. In the UK, Aberdeen continues to go from strength to strength together with the North of England Branch based in Newcastle and the London and South of England Branch based in London but with increasing activity in the West of England particularly in Exeter.

All the Branches have been very active with local events, details of which follow in the Branch reports. The mainstay of Branch activities remains the technical presentations and courses, many of the awareness courses now being tuned to meet local requirements. With the refocussing of awareness courses there has been an encouraging take-up of these events.

SUT Staff

Thanks must be given to the small group of hardworking staff in London and Aberdeen. In addition we need to thank the staff in our Houston and Perth Branches. Between them all, they have kept the daily activities and events of the Society on track during the year. I would also like to thank all the Committees, particularly their Chairs, as well as those of the Branches for all their hard work and the enthusiasm that they bring to the SUT. Without their enthusiasm and dedication the Society would not be what it is today.

In conclusion despite the current financial situation, Council believes the Society remains in a strong place to meet the challenges which lie ahead. SUT is not out of the woods yet but is making steady progress to restoring long term financial stability. SUT has been through difficult times in the past and each time has grown stronger through the resolve of its members and Council looks forward to further successes during 2018/19.

On a final personal note I would like to thank all those individuals who have provided support to the Society, Council and myself during the difficult times past and continue to work tirelessly towards securing a successful future for the Society. It has been my privilege to be Chair of Council for the last five years.

Officers and Council 2017-2018

President

Prof R Rayner

Chairman

P Metcalf

Immediate Past President

Dr D Kirkley

Honorary Secretary

D Brookes

Honorary Treasurer

M Cook

Secretary to Council

Mr S Hall

Members

D Baker

R Binks

C Curran

R Farrier

I Knight

Dr WD Loth

R Luff

J Mann

C Milner

R MacDonald

D Saul

C Saunders

Dr Z Medina-Cetina

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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

Emma Young

Communications Coordinator

Araceli Lopez

Events Coordinator

Patsy Rhymes

Perth Branch & Events Manager

Jennifer Maninin

Finance/Membership Administrator

Fiona Allan

Events & Marketing Coordinator

Patricia Slapp

Aberdeen Branch

www.sut.org/branch/aberdeen



Martin Harley

Committee

2018-19 Chair

Daniele Petrone

2017-18 Chair/Vice-Chair

Martin Harley

Treasurer Tony Laing

Keith Anderson

Paul Benstead

Peter Blake

Andrew Connelly

Gordon Drummond

Patrick Duggan

Campbell Elder

Dr Ibiye Iyalla

Andy MacNamara

Jim Mann

Katrina McWilliam

Chris Milner

Ekaterina Pavlovskaja

Daniele Petrone

Phill Roberts

Malcolm Smith

Paul Williams

2017-2018 was again a tumultuous year for the Aberdeen branch of the Society for Underwater Technology. We weathered the storm intact, though we have a few wrinkles to sort out for when we reconvene in September 2018.

We started out the year welcoming the new Events Manager, Jacqui Adams, to her role in SUT and I would like to thank Jacqui for all of her efforts throughout the year, especially since she arrived at one of the busiest periods of the SUT calendar with the detailed organisation of the OSIG Conference to pick up. We also lost our serving Chair, Paul Williams, due to the pressures of his new office but I hope you will join me in thanking Paul for his service over the past three-years and the energy he brought to the Branch Committee.

Before I look back at our calendar of events, I would like to take this opportunity to remark on our Aberdeen SUT Branch Sponsors, BHGE, KD Marine, OneSubsea, Wood Group and, of course, Apache – we would not have been able to develop the range of activities and events without their generous support and commitment.

The oil and gas industry at large and in the North-East of Scotland in particular, is recognised as the major industrial supporter of the SUT. The industry, its companies, educational institutes, non-governmental organisations and indeed, the individuals that are interested to attend our events, or even provide a helping hand, are fundamental to our success in fulfilling the Society's aims and objectives and we would struggle without them all. The Aberdeen Branch Committee should be proud of the programme it did manage to field in the past 12-months which included:

- Two Subsea Awareness Courses; in November 2017 and May 2018, which hopefully heralds a welcome return of companies putting new and vigorous efforts into training.
- The Christmas Lectures to schools at the end of November 2017, which although not as well attended as in previous years on account of difficult weather conditions, was well received by the 'stars of tomorrow' who came along with their teachers to the AECC.
- Our AGM in December 2017 at the Marcliffe at Pitfodels came in for praise and concern in practically equal measures. Praise for showing that we were able to trim our proposals in line with the industry expectations of the day, but a little concern at the message portrayed by the new Chief Executive of the Society, which we have since addressed in the proper manner.
- The Business Breakfast and Networking morning at the Marcliffe in late January 2018, was popular with three excellent presentations delivered to highlight the recovery steps being experienced in the oil and gas industries.
- We may have managed to deliver only five Evening Meetings in the year, but we were trying to develop something a little different for our audiences. "Question Time" in September 2017 restarted the season with expert views and opinions answering members submitted questions. Then we suffered a programme interruption until February 2018 – although we did have lots of activity in between time – when we had an evening meeting on "Automation, Digitalisation and the Remotely Controlled Future". This was followed by "Changes in the Subsea Landscape" in March 2018 and

Aberdeen Branch

contd.

then *“North Sea Decommissioning – What Does the Future Hold?”*. This last event was very ably arranged and developed by the SUT+ Team. Finally, in June 2018 we had an evening meeting on *“New Ways of Doing Projects”*.

- 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 *“The Leading Edge of Value-Based Subsea Inspection”*.
- In March 2018 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 was held at Peterculter Golf Club where members and colleagues enjoyed a great day out on this challenging course.

Aberdeen Committee

Our committee member numbers have remained stable this year and I would like to thank the individuals that make up our committee but also their parent companies for allowing their participation. Jacqui Adams our new Events Manager has performed superbly under difficult circumstances and, as I write this summary we can now welcome Daniele Petrone of OneSubsea to the position of Chair for the Aberdeen branch for 2018 - 2019.

We can be proud of our record and efforts during the past year and I hope everyone on the Aberdeen Branch Committee was able to enjoy a well-earned break over the summer and I look forward to welcoming everyone back to our first committee meeting of the new SUT calendar year on the 4 September at Sir Ian Wood House in Altens.

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, deserve a special mention for maintaining the high profile and reputation the course enjoys.

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 one and two-day courses.

It is difficult to predict with certainty that the downturn is coming to an end, but we are surely closer to it than we are from its beginning. Though 2019 may well not turn out to be plain sailing, we are seeing increased interest in our events and signs that the market is becoming more buoyant. It's a wave we should be able to catch to reach more people with the Society's messages in the coming year, though like surfers, we need to be ready. We've a good team and some faithful supporters; I think we'll manage.



Australia Perth/Melbourne Branch

www.sut.org/branch/perth



Chris Saunders

Committee

Chair Chris Saunders

Vice Chair Rex Hubbard

Secretary

Norman O'Rourke

Treasurer Sarah Elkhatib

2016 Secretary Ian Wilson

Nick Brown

Mark Casey

Shuhong Chai

Paul Farquharson

Terry Griffiths

Pawan Gupta

James Martin

Nick McNaughton

Matthew Moore

Julie Morgan

Enda O'Sullivan

Paul Upjohn

Hema Wadhwa

Si Huai Yeaw

In line with the last few years, the local subsea market continues to be primarily oil and gas focused, and is operating in a cost conscious and challenging environment. As such, the local committee has worked hard to manage its costs and at the same time provide a quality service to its local membership.

As a result, the Perth Branch, YES! Subcommittee and OSIGp have successfully completed or established a number of new and interesting initiatives for the local membership. For example the SUT have supported APGA and Engineers Australia to complete the development and successful launch of the offshore pipeline competency framework. The Subsea National Engineering Registration sub-committee has continued to work with local industry to establish a set of competency profiles and framework for professional registration assessment as a Subsea Engineer which should be launched in 2019.

We have also established a mentoring program with SPE and SEA to provide mentoring to our membership which pairs mentors with mentees across the industry in Perth. It is early in the initiative but the uptake has been very encouraging and we look forward to take it further in the coming year.

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 2017 and 2018 committee, and in particular wish to express our thanks to retiring committee members who gave very generously of their time, knowledge and support.



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**, James Martin, Matt Moore & Patricia Slapp
- AGM & Annual Dinner: **Sarah Elkhatib**, Mark Casey, Mark Haning, Allaine Lopez, Nick McNaughton, Sarah Murray & Patricia Slapp
- AOG 2018: Nick Brown, Sarah Elkhatib, Terry Griffiths, Ali Mazaheri, Jennifer Maninin, Julie Morgan, Diederick Naude, Chris Saunders & Si Huai Yeaw
- AOG 2019: Terry Griffiths, Ali Mazaheri, Liam Moore, Jennifer Maninin, **Julie Morgan**, Diederick Naude, Chris Saunders & Hema Wadhwa
- AUT 2017 Conference: Shuhong Chai, Ben Hunt, Steve Duffield, Ian Hobbs, Pat Fournier, Nick Lake, Jennifer Maninin, Simon Tanner, Peter Wademan & Phil Wells

Australia Branch

contd.

- Courses: Sarah Elkhatib, Allan Devlin, Jennifer Maninin, Nick McNaughton, Matt Moore, Chris Saunders & Ian Wilson
- Engagement: Graham Bonner, Allan Devlin, **Paul Farquharson**, Pawan Gupta, Jennifer Maninin & Chris Saunders
- Evening Technical Meeting: **Mark Casey**, Sarah Elkhatib, Paul Farquharson, Pawan Gupta, Rex Hubbard, Jatin Lodhia, Jennifer Maninin & Hema Wadhwa
- Finance: Fiona Allan, Sarah Elkhatib, Rex Hubbard, Jennifer Maninin, Norman O'Rourke & Chris Saunders,
- Golf Day: Simon Cornel, Matt Davis, Dave Flannery, James Martin, Matt Moore, Dan Pickering, **Chris Saunders**, Patricia Slapp & Rodney Silberstein
- Grants: Fiona Allan, Graham Bonner, Sarah Elkhatib, **Nick McNaughton**, Chris Saunders & Margo StQuintin
- Membership: Fiona Allan, Allan Devlin, Terry Griffiths, Paul Farquharson, **James Martin** & Ian Wilson
- Mentoring: Mark Casey, **Rex Hubbard** & Jennifer Maninin
- OSIG Perth: See overleaf for full 2017 / 2018 summary.
- Overseas Branch Support (SUT KL/Singapore/Melb): Sarah Elkhatib, Pawan Gupta, Jennifer Mainnin, James Martin & **Paul Upjohn**. Includes liaison with Marin Abelanet (KL), Derek Donaldson (Singapore) & Roger Tan (Melbourne)
- Phoenix: See overleaf for full 2017 / 2018 summary.
- Scholarships: Fiona Allan, Nick Bardsley, Shuhong Chai, Dave Flanery, Matt Moore, **Julie Morgan**, Guy Mcauley, Liam Salter, Carl Segond Von Banchet, Tony Trifunoski & Hema Wadhwa
- 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: Nick Bardsley, Mark Casey, Nick Brown, Afton Galbraith, Rex Hubbard, Chris Merrick, Matt Moore, Norman O'Rourke & **Ian Wilson**
- YES!: See overleaf for full 2017 / 2018 summary.



Australia Branch

contd.

SUT Perth Branch Events

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

This year we also reran the Golden Ticket raffle to raise funds to contribute to SUT Scholarships, special interest groups such as YES! and community events they're involved in. The winner (Warren Lund of Quadrant Energy) won a free year with the SUT Perth Branch which included Individual Membership for 1 year, an SUT gift pack and complimentary attendance to all our 2018 events. We are very thankful to Woodside Energy who very kindly sponsored the initiative.

Annual Dinner & AGM – 17 November 2017

Our 14th AGM was held this year prior to the Annual Dinner at the Pan Pacific Hotel, Perth. The Chair, Treasurer and Secretary's Reports were heard and the new 2018 Committee announced. Sincere thanks were acknowledged for the Members, Sponsors, Presenters, Office Bearers, Committee, Sub-Committees and SUT Staff during the year.

Our Annual Dinner then kicked off, proving yet again to be a very popular event with 248 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.

Sarah Elkhatib and Jennifer Maninin MC'd the night, including announcing the 2018 scholarship winners (Guy McCauley and Liam Salter), Golden Ticket winner and prizes for every table. Chair, Chris Saunders also brought a few laughs to the stage while giving the Chair's thank you speech including the nights sponsors: Shell Australia, Australian Marine Complex, OneSubsea, Subsea Engineering Associates and DORIS Engineering.

Along with the musical entertainment during the evening we also had a late night lounge overlooking the Swan River. An enjoyable evening was had by all.



Conferences

The following conferences were run:

- AUT Conference, 18 October 2017

Over the last 14 years, the Australasian Hydrographic Society (AHS) and the Society for Underwater Technology (SUT) have been organising the Autonomous Underwater Technology (AUT) Conference, an invaluable forum for the Oil and Gas (O&G) industry, military and research professionals to interact and share new ideas, experience and knowledge. The 10th AUT Technical Conference & Exhibition took place on 18 October 2017 at the Pan Pacific Hotel, in Perth (Western Australia) and included an extensive programme of technical presentations and dynamic round-table discussions focusing on the wide range of AUT applications.

Australia Branch

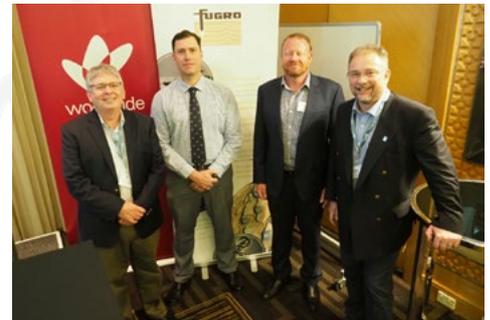
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This year, the AUT conference saw 95 attendees, almost 5% more than at the last AUT conference in 2015, coming from over 35 private companies and government institutions. The delegates and the presenters had a mixed background that included academic, industry and military experts, giving the conference a highly professional profile and significance, attracting Australian, as well as international, representatives.

The Ice Breaker function was held on the at the Reveley Bar which would have overlooked the Swan River if you could see it through the unexpected rain. Still, delegates enjoyed canapés and refreshments while enjoying escaping the weather and were presented with a lovely afternoon the following day at the Subsea Energy Australia Suppliers Forum.

A full post-event report including details of each of the presentations can be found at www.sut.org/event/perth-autonomous-underwater-technology-conference-aut-2017/.

A huge thanks again to the Conference Committee (as noted in the first pages of this report) and the sponsors: Fugro Survey Pty. Ltd, Woodside Energy Ltd, Blue Ocean Monitoring, University of Tasmania (UTAS), Australian Maritime College (AMC) and Kongsberg Maritime for making the conference possible.



- AOG (Australian Oil & Gas) Conference and Exhibition, 14-16 March 2018

This year's Conference was free to attend yet again and was held within the Exhibition area. Partnering with Diversified, SUT, Subsea Energy Australia (SEA) and Subsea UK, the AOG Subsea The conference returned with a renewed focus on exploring issues impacting the oil and gas industry in Australia, sessions included:

- Collaborating to gain knowledge
- Facilitating subsea tie-backs
- Flow assurance
- Monitoring & Inspection
- Pipelines
- Subsea decommissioning
- The ins & outs of flowlines & risers

Nearly 460 subsea professionals attended the Subsea Forum in 2018 and feedback for the new style of conference needed tweaking for next year but was positive.



Australia Branch

contd.

Courses & Site Visits

The following training courses and site visits were run:

- Subsea Awareness Course, 18-22 September 2018
- Introduction to Materials & Corrosion Course, 27-28 March 2018
- Subsea Awareness Course, 21-25 May 2018
- Flexible Risers & Flowlines Course, 26-27 June 2018

Evening Technical Meetings

The following evening technical meetings were held in Perth:

- Light Well Intervention, Flowlines Buckle Management and the Low Motion Floater, 9 August 2017
Presentations by: Bevan Morrison, TechnipFMC; Adrian Lim, Rosen Australia Pty. Ltd.; & Yuriy Drobyshevski, INTECSEA. Chaired by Nick McNaughton, Subsea Engineering Associates
Sponsored by: Advanced Technology Valve; INTECSEA; & Rosen Australia Pty. Ltd.
- Subsea Electrical Technologies and Innovations in Pipeline Construction & Materials, 11 October 2017
Presentations by: Mathieu Beaujon, SERIMAX; Marcos Mockel, Shawcor; Benoit Lamoureux, DORIS Engineering Australia Pty Ltd; & Peter Baker, Senior Subsea Engineer, SPEC Consultancy. Chaired by: Mark Casey, Quadrant Energy
Sponsored by: Advanced Technology Valves; DORIS Engineering Australia; SPEC Consultancy & Shawcor
- Installation/IMR Vessels - Current and Future Trends, 14 February 2018
Presentations by: Ashley Duncan, TechnipFMC; Marcus Hemsted, Fugro Marine Australia; Ray Smith, DOF Subsea Australia; & Simon Wolfe, McDermott Australia. Chaired by: Paul Upjohn, Advanced Technology Valves
Sponsored by: DOF Subsea, Fugro, TechnipFMC
- Researching into the Subsea Future, 11 April 2018
Presentations by: Abdul Fahad Mueed, Curtin University; Lisabeth Wagner, The University of Western Australia; David Szczepanski, Edith Cowan University; & Terry Griffiths, The University of Western Australia. Chaired by: Jatin Lodhia, 2H Offshore
Sponsored by: Curtin University; Woodside Energy; & The University of Western Australia
- Piper Alpha, 30 Years Later, 13 June 2018
Presentations by: Paul Farquharson, Baker Hughes, a GE Company; Brendan Fitzgerald, Vanguard Solutions; Jeremy Dunster, NOPSEMA; & Ian Grant, Quadrant Energy. Chaired by: Paul Farquharson, Baker Hughes, a GE Company
Sponsored by: Baker Hughes, a GE Company & Quadrant Energy Optimised In-Fill Projects, 10th



Australia Branch

contd.

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

The Committee is, as always, grateful to all presenters and chairs for their time and efforts in bringing our Evening Technical Meetings to fruition, and for those generous corporate members who support the evenings with their sponsorship.

Golf Day – 3 November 2017

For our annual golf day this year, the SUT teamed up with the Society for Petroleum Engineers who come together for their first collaborative golf day. Changing it up a little this year we headed to Maylands Peninsula Golf Course where the fresh water lakes and gentle undulations gave the game some challenge, whilst giving our members stunningly picturesque city-scape views on the banks of the Swan River as they networked with colleagues.



23 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: OneSubsea, Subsea Engineering Associates, NOV Completion & Production Solutions, Applus RTD, Aussie Fluid Power, Energy Agencies, A60N, Opus Energy Solutions and Castrol Offshore.

SUT Perth Sub-Committee Updates

Branch Administration

There have been a fair few changes with our part-time staff over the last year. In June 2017 we welcomed Marketa Mesman (Events Assistant) to the team for a short term, 12-month contract before she headed back to the Czech Republic. In April 2018 we said goodbye to Corelle Charles (Events Assistant for the SUT for almost 8 years) as she starts a new chapter with a more outdoors focus, though we're very happy to still see her regularly on a personal basis. As we said goodbye to Corelle, we welcomed Patrica Slapp (Events & Marketing Coordinator) in April. Trish has settled in very nicely and we're happy to have her as part of the busy team.



Jennifer Maninin (Branch Manager) was pleased to visit SUT Headquarters in London twice this year during her annual leave (July 2017 and June 2018) and Perth welcomed Emily Boddy (HQ Publications Officer) to the Perth office for two months in early 2018.

Jennifer, Fiona Allan (Administrator: Finance/Branch/Membership) 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.

Engagement

During the initial half of 2017 it became apparent the focus areas for the remainder of the year should be:

- Strengthen the existing membership base and encourage sponsorship
- Expand the fields of engagement to broader networks
- Review the current sponsorship packages

Australia Branch

contd.

With consideration of the above, the sub-committee and SUT staff put emphasis on 1) the existing network and key supporters to appreciate their main interest areas for 2018, and 2) the diversify group, i.e. Renewable energy's and defense industry.

In Q4 of 2017 the new SUT CEO, Steve Hall, visited the Perth Branch and the engagement sub-committee assisted in making his trip as fruitful and knowledge gaining as possible. This was achieved by arranging meetings and forums with Shell, Department of commerce, AUT, Defense Sector, AIDN and direct links to SEA and Woodside.

Going into 2018, the key points from 2017 remained very relevant, but the committee discussed some specifics needed to be applied, and the following was agreed;

- Increased Operator attendance at ETMs (and as a stretch other SUT events)
- Review non-subsea related industry's links to "underwater" and canvass the benefits of SUT
- Stretch to grow our regular sponsorship base by 10%
- Assist in strategy development regarding the diversification of SUT Perth branch

As part of the Perth Branches diversity drive, the engagement committee have pursued many companies from various sectors, i.e. Department of Commerce, NERA, Nopsema, WA Museum, Maritime Museum and further tertiary organisations.

Additionally, a huge plus for the SUT Perth Branch is our engagement with the Western Australia Defense Force and the Australian Royal Navy, who have now become corporate members and are pro-actively pursuing further involvement with SUT.

Finally, we've continued our SUT Casual Catch ups – free to attend events which encourage SUT members to get together for a casual catch up twice a year.

The Engagement sub-committee looks forward to the second half of 2018 and beyond as well as closer synergies with ETM and Membership Sub-committees.



Finance

SUT Perth Branch ran at a deficit this financial year of approximately \$AUD 76,000. This was mainly due to:

- fewer attendees at our courses due to the turndown in the current economic climate;
- having to recognize deposits for events in the year they are paid; and
- increase in staff time and costs.

There has been a continuance of cost cutting where possible.

An audited Income and Expenditure Statement for the year will be forwarded to Council following the finalization of the audit in September 2018.

Next year's Budget Forecast is of a deficit of \$AUD 11,000.

Grants

SUT Perth applied for a "Women in STEM and Entrepreneurship" Grant in November 2017. We had included video streaming; lunchtime events; school events and a mentoring programme in our remit.

Sadly we were unsuccessful. The Grant has now closed.

Australia Branch

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Marketing

After some time putting together a marketing strategy we're pleased to say that access to updating the SUT website has been very successful as has our move to mailchimp emails, monitoring google analytics and regular social media campaigns. We still have a fair way to go to complete our marketing strategy but we're happy to be on track with our desired timescale (due to be finalized June 2019).

Membership (Perth and Melbourne-based) as at 30 June 2018:

Students: 103 Individual: 154 Corporate: 51

Including Academic / Not for Profit: 4

Global: 14 (with representations in Perth)

Membership continues at a stable level. 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.

Mentoring Programme (SUT-SPE-SUT)

In early 2017 the SUT committee developed its 2017 Strategy. One of the three areas considered a strategic priority for the SUT was to establish an SUT mentoring programme which was seen as:

- having a very strong match to the principles of the SUT
- being strategically important in linking student membership, through to YES! engineers through to NER training and development
- being a significant draw card to new members and a reason for current members to maintain their relationships with the SUT

The Society of Petroleum Engineers, WA Branch (SPE-WA) and Subsea Energy Australia (SEA) both have successful mentoring programmes, and following discussions between them and SUT-Perth it was decided that a joint mentoring programme should be developed. This concept had the active support of Engineers Australia (Oil and Gas Group).

In February 2018 a Memorandum of Understanding was signed between the 3 parties with the MOU being for "...the purpose of:

1. Setting up a Joint Mentoring Program targeting the Oil and Gas industry in WA;
2. Participating and running the program on a voluntary basis through a joint committee;
3. Contributing with volunteers, staff and resources equally going forward".

Through March and April 2018 applications for the programme were sought and at the end of April there were over 100 applicants in total, of which more than 30 were SUT members.

On 3 May 2018 the joint programme was launched in Engineers Australia's West Perth function room with approximately 60 attendees on the night. At this function the respective roles of Mentees and Mentors were outlined and the individual Mentees were introduced to their Mentors, after which the individuals made their own arrangements to meet regularly.

A word from the committee:

"Our mission is to provide visionary women and men with the education, empowerment, and energy they need to become wildly successful. At the heart of this mission stands a tradition of valuable engagement and mentorship by industry/business experts and professionals. These industry experts and professionals instil accountability and increase motivation within Mentees to continue working toward overcoming challenges and reaching goals.

Access to a Mentor can be the difference between a stagnant career, and one that is connected, strategic, and growing. The lack of access to a mentor, however, remains one of the top five barriers to men and women who want to be a success in our industry. For that reason, we are thrilled by the response each year by the Mentoring community to our call for Mentors and Mentees."

In its first year the joint mentoring programme has been a great success and we look forward to expanding the programme in its 2nd year and ongoing into the future.

Australia Branch

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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 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 819 Continuous Professional Development (CPD) training hours including:

- **8th OSIG International Conference:** a three-day conference held at the Royal Geographical Society in London under the theme of "Smarter Solutions for Future Offshore Developments" including 149 technical papers and significant contributions from various Perth based authors.
- **Movie Night:** an evening seminar at the Indian Ocean Marine Research Centre (IOMRC) Auditorium at UWA with the presentation of six short movies under the theme of "From Assess to Operate". Movies were accompanied with presenters who provided narratives concurrently with each movie.
- **OSIGp Selections of London Conference:** an evening seminar at Rigby's Bar with presentations by five Perth-based authors of papers previously presented at the London Conference.

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.
- **Autonomous Underwater Technology Conference 2017** organised by the Australasian Hydrographic Society and SUT, with OSIG representation on the organising committee.

Several changes have occurred to the OSIGp committee over the year and thanks goes to all OSIGp committee members past and present (listed below) for their enthusiasm and hard work. 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 | • Sarah Madrigal (<i>Secretary 2018</i>) |
| • Antonio Borges Rodriguez | • Chris Meecham |
| • Paul Choate | • Robert Mueller |
| • Fiona Chow (<i>Chair 2017</i>) | • Tim Pugh |
| • Michael Cocjin | • Sam Stanier |
| • Kevin Day | • Damon Sunderland (<i>Vice Chair 2017 & Chair 2018</i>) |
| • Gareth Edwards | • Asrar Talukder |
| • Emma Eltringham | • Laith Tapper |
| • Ailreza Gholilou | • Simon Tanner |
| • Chris Haykin (<i>Secretary 2017 & Vice Chair 2018</i>) | • Joe Tom |

Overseas Branch Support

The Perth Branch formed a sub-committee specifically to assist other more local branches when/if necessary. From this the sub-committee has been somewhat involved and can report:

Kuala Lumpur Branch – The Kuala Lumpur SUT Branch has held a couple of lunch time technical meetings whereby two technical presentations were given and lunch was served. In addition to this in May this year a one-day conference was held by the KL branch on the topic of subsea processing which was well attended. In addition

Australia Branch

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to this the monthly social networking event within the city centre has been a great success with a mix of regular and new faces attending each month and continues to be a good social gathering for the subsea community within KL.

Singapore Branch – The Singapore branch have looked to reintroduce their Evening Technical Meetings along with looking to revamp the committee. It is hoped the central venue for the ETM's will attract new members and is hoped that the SUT are able to grow within Singapore.

Phoenix Overview

The Phoenix Special Interest Group was formed in 2016 as a collective of subsea professionals who possess extensive subsea experience in engineering, science or academia. The group provides a focal point where members meet monthly to apply their experience, knowledge, skills, leadership and wisdom to current and future challenges in the underwater industries.

Strategy Sessions were held in 2018 to refresh the Objectives of the Phoenix SIG as follows:

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

Additional Objectives were re-directed to other SUT Schemes or Sub-Committees as follows:

- Mentoring – interested Phoenix members to pursue through SUT/SEA/SPE Mentoring Scheme
- Assist with SUT courses – interested Phoenix members to pursue through new SUT Course Sub-Committee

Sub-Committee as at 30 June 2018:

- Carl Celedin (*Secretary*)
- Paul Choate
- Peter Clarke (*Vice Chair*)
- Allan Devlin (*Chair*)
- Lalit Dogra
- Tim Hart
- Andrew Kilburn
- Charles Ludovico
- Abdul Mueed
- Julie Morgan
- Rodney Silberstein (*Under Secretary*)
- Paul Sutton
- Ian Wilson

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.

This year we awarded two scholarships and are pleased at the continued and positive uptake of scholarships by the student fraternity. Both scholarship recipients this year were from the University of Western Australia. The most worthy recipient was awarded the “Chris Lawlor” Scholarship.



Australia Branch

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Subsea Engineering Competency Program

The sub-committee has had a very productive year and completed drafting of the 49 competency profiles. We have reached out to industry for support with the expert peer review of the competency profiles, which is ongoing. Our target is to complete and present this body of work to Engineers Australia by the end of 2018. Planning has started for a roll-out of the subsea engineering competency program and formal recognition by the National Engineering Register in 2019.

2017-2018 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. In early 2018 the new SUT YES! Committee organized a strategy workshop, to brainstorm new ideas and create a plan for 2018.

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 and meet goals. So far this year there have been three successful events, with two selling out. All events are listed below. Full post-event reports on all YES! 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.

One of the biggest changes this year is that YES! has given the responsibility of budgeting, reducing the work for SUT staff, and promoting transparency and accountability within YES!. This has been a huge success, reducing the cost of YES! events, and allowing YES! to be financially stable. YES! currently has two annual sponsors, Woodside (since 2014) and Quadrant (new in 2018). Additionally, YES! have brought in two new companies to SUT (Siem Offshore and ISH Energy) to sponsor individual events.

The service provided by the YES! sub-committee members has been immense and their time and effort volunteered throughout the past year has allowed YES! to continue to thrive in the subsea community. These committee members are:

- Nicholas Bardsley (*2018 Chair*)
- Victoria Hann (*YES! Secretary*)
- Mark Haning (*YES! Programme & Marketing Leader*)
- Ruby Yang
- Liam Moore
- Guy McCauley
- Allaine Lopez
- Naomi Naveh
- Oliver Trifunoski
- Saxena Shubham
- Liam Salter (*UWA Student Liaison Officer 2018*)
- Carl Segond Von Banchet (*ECU Student Liaison Officer 2018*)
- Tony Trifunoski (*Curtin Student Liaison Officer 2018*)
- James Martin
- Nick McNaughton
- Matt Moore

The YES! Sub-Committee is excited about the year ahead in the subsea industry and looking forward to celebrating their five-year anniversary in 2018.

Australia Branch

contd.



YES! events

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

- 2017 Site Visit TMT ROVs, Carnegie and CIVMEC – 24 August 2017
- 2017 Quiz Night – 7 September 2017
- Industry Update & Barefoot Bowls – 22 February 2018
- Leadership Night Mike Utsler Inspirational Talk – 15 May 2018

Year Ahead

The focus for 2018 / 2019 continues to target medium to long-term initiatives which will support the growth of the society:

- A Courses subcommittee has been established to look at existing and potential training materials with the target of developing new expanded courses that cover some subjects in greater detail. We are also, where possible, trying to align our training with the competency framework required by the NER areas of pipelines and subsea engineering.
- We also continue to reach out to non oil and gas subsea organisations such as the Australian Navy and expanding the membership base of the local SUT branch. This also covers the areas such as alternative energy and marine science.

The year 2018/2019 will continue to test the SUT but, that being said, local companies are becoming increasingly optimistic and starting to consider sponsorship and training options for 2019. This of course should enable the SUT to manage our finances responsibly yet continue to provide a wide range of events and training options for the year ahead.





Brazil Branch

www.sut.org/branch/brazil



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

The SUT Rio Branch has promoted two seminars and supported the Brazil-Japan joint courses in Ocean Engineering.

Offshore Wind Power Seminar: Prospective Scenarios & Main Drivers and Barriers

Held at Petrobras Research Center on 22 March 2018. Jointly organised by SUT Rio Branch, Petrobras and COPPE - Federal University of Rio de Janeiro with an audience of 400 people.

- Offshore wind Industry overview – UK market & worldwide
Atkins Global
- Installation and maintenance of offshore wind turbines – Evolution performance
Royal Boskalis Westminster
- Offshore wind power – Technology achievements: state-of-the-art and beyond
Prof. Feargal Brennan – Cranfield University
- Petrobras Initiatives on offshore wind power
Petrobras Research Center

Renewable Ocean Energy

Held at COPPE – Federal University of Rio de Janeiro on 7 June 2018. Organised by SUT – Rio Branch with an audience of 60 people.

Present Stage of Ocean Renewable Energy in the World and Activities in Brazil

Presenter: Dr. Milad Shadman

Brazil-Japan Academic Cooperation in Ocean Engineering

The SUT Rio Branch has provided support for courses involving Brazil and Japan Universities to promote joint distance learning courses (45 hours each) in the following subjects: Risers and Pipelines, Ocean Renewable Energy, Fluid-Structure Dynamics, Economics of Marine Natural Resources, and Systems and Control Technology.

China Branch

www.sut.org/branch/china



The year of 2017-2018 has seen another active programme of SUT branch activities in China. Our successful programme of meetings, seminars and reports continues.

SUT Technical Conference 2017

The Underwater Technology Technical Conference (SUTTC 2017) is the major symposium in China for scientists, engineers and practitioners all around the world to present their latest researches, results, ideas and applications in subsea areas, especially in the developments of subsea production system as well as exchange minds on the deepwater oil and gas industry in the South China Sea. This Conference was held in Haikou, China, November 23-24, 2017. It was hosted by SUT China and China University of Petroleum, Beijing, and also endorsed by the International Ship and Offshore Structure Congress, Chinese Society of Theoretical and Applied Mechanics, and Chinese Ocean Engineering Society, etc. The subjective of the conference is "Deepwater Development under the Backdrop of Low Oil Price: Advanced Technologies and Equipment". There were 128 attendees, and 35 papers presented at the conference.

Seminars and Reports

- Report focused on Overview of offshore plant engineering, organized by SUT China and China University of Petroleum, 28 November 2017, 1402 Meeting Room, Main building Block A, China University of Petroleum. Audience: 30 people.
- Academic report emphasized on ICE (Instrument, Control&Electricity), organized by SUT China and China University of Petroleum, 21 November 2017, 1402 Meeting Room, Main building Block A, China University of Petroleum. Audience: 30 people.
- Report focused on New Adhesive Strength Evaluation Method Based on Intensity of Singular Stress Field, organized by SUT China and China University of Petroleum, 9 January 2018, 1402 Meeting Room, Main building Block A, China University of Petroleum. Audience: 40 people.
- Discussions about the plan of conference SUT China 2018 – organized by SUT China, 10 April 2018, No. 511, Main building Block A, China University of Petroleum, Beijing. Audience: 15 people.
- Academic report emphasized on Surrogate modeling, data analytics and prior knowledge, organized by SUT China and China University of Petroleum, 12 March 2018, 1402 Meeting Room, Main building Block A, China University of Petroleum. Audience: 40 people.



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)

LIANG Xu (Zhejiang)

WANG Chunsheng

(Daqing)

XIE Peng (Guangzhou)

YAN Jun (Dalian)

ZHANG Dagang

(Qingdao)

ZHANG Changzhi

(Shenzhen)

ZHENG Hao (Changsha)



Kuala Lumpur Branch

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



Ajan Das

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

The 2017-2018 year has been definitely a very active and successful year for our Kuala Lumpur branch, marked by the holding of the 2nd Subsea Processing International Conference in April 2018.

Thanks to our enthusiast committee members, we managed to maintain our monthly networking evenings at a regular pace during the year.

These have regularly attended by a core group of individuals, and are actually quite a good gathering points for passing by fellows from other regional SUT branches. However, as the years pass by, we are continuing to look for more local subsea engineers to participate, and the committee need to continue its effort to market and promote the networking events.

This reporting year we have managed to organise one lunch and learn session housed in the prestigious Petroleum Club located on the 42nd floor of the Petronas Towers. It was held on 29 March 2018 with the topic 'Flexible Lines Technology Update'. The speakers were Mr Michael Buhl from NOV Completion & Production Solutions who gave us an update of the latest development on flexible flowline and riser products and technology, and Mr Wouter Spruijt from Airborne Oil & Gas B.V. who presented the latest progress on the Thermoplastic Composite Pipes design and fabrication, including a presentation of the first installed application in Malaysia. The session was well received by the subsea community and well attended.

The highlight of the year was without doubt our Subsea Processing Conference. Organised for the second time in Kuala Lumpur, on 19 April 2018, at the same location as the first edition, the Park Royal Hotel.

The Conference was split into four sessions that covered the operators and consultants expectations, gave the suppliers update, introduced the Niche Technology enablers, and highlighted the installation contractors view points.

The full day event was well attended, and all present agreed that the 12 speakers that gave their time to prepare and present did a very good job. Presentations were followed by very animated and interesting discussion on all relevant topics.

A special thanks from the committee to Mr Salvatore Micali from Aker Solutions who has put his heart and soul to get this conference off the ground.

With a rebound of the industry around the corner, we would like to see a more active branch, with renewed committee members for the 18-19 season.

We hope also to see more and more local and regional initiative and collaboration for the years to come with possibly the restart of training sessions for the younger generation.

London & South of England Branch

www.sut.org/branch/london



LSE had a good year, producing a respectable surplus. All events were in profit. We ran eight evening events, one City Subsea Awareness course, and four Lunch and Learns. We ended the year with an enjoyable summer BBQ on the HQS Wellington with a live band. In November we held our annual quiz night.

Seven evening events were held at Imperial College in London and one event in Woking.

Within the region we have two core interest groups. Firstly, what was the Subsea Engineering SIG. There is still considerable subsea engineering effort, headquartered in London and other hubs on the outskirts such as Woking. Generally, events with subsea engineering themes are better attended. The other core group is the City Insurance industry. This group is globally unique in the size and scope of what it insures. There is also a hunger from them to learn more about the products they are insuring so they can evaluate the risks. Dissemination of knowledge between these core areas is the fundamental of SUT LSE activity.

Throughout this year we have had had a much better understanding of our day-to-day accounts and this has enable us to present evening events on a wider range of topics away from core areas, even if these are more likely to be marginal financially.

This year saw the start of a South West Chapter lead by Brian Green. Currently a subchapter underneath SUT LSE, the SW chapter start-up has been helped by support of new corporate members, the Met Office in Exeter. There is a mix of subsea technologies in SW UK, though spread over a wide area from Falmouth to Bristol.

SUT+ have run a number of events and from January 2018 have an allocation of £1000 from LSE to help run their events and keep them free of charge.

Committee

The Executive committee is comprised of:

Richard Binks	<i>Chair</i>
Keith Broughton	<i>Deputy Chair</i>
Iain Knight	<i>Hon Treasurer</i>
Arabella Walker	<i>Hon Secretary SUT+</i>
Jacqui Adams	<i>SUT Events Manager</i>
Brian Green	<i>Hon Secretary SW Chapter</i>
Graham Taylor	<i>Hon Secretary</i>

We are indebted to the regular help from other committee members notably Brian Jones, Joe Hulm, Geoff Lyons and SUT CEO Steve Hall. We have also had other welcome guests, Caroline Acton from Met Office and Rebecca Sykes from Lloyds Register, both will broaden the knowledge base of the committee.

Accounts

Included in this publication are the year-end event accounts for SUT. LSE evening events are generally sponsored at £300-500 per event. We need 40 attendees to break even at Imperial College. These numbers are only achieved once or twice a year, so event sponsorship is mandatory to run a profitable event. We do have to be careful, as companies may be reluctant to sponsor if attendee numbers are low.



Richard Binks

Committee

Chair Richard Binks

Caroline Acton
Alex Argyros
Chris Ashcroft
Dave Baker
Keith Broughton
Duncan Brown
Mark Calverley
Andrew Chamberlain
Brian Green
Brian Jones
Peter Hayward
Simon Hems
Joe Hulm
Iain Knight
Geoff Lyons
Peter Metcalf
Dr Kevin Monaghan
Ursula O'Donnell
Alexander Phillips
Dr Mark Pickering
Dr Edward Steele
Rebecca Sykes
Graham Taylor
Alex Vincent
Tom Walters

London & South of England Branch

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Clearly SSACs rapidly add to income. The LSE accounts are slightly weighted as we had two summer BBQs in the financial year. Lunch and Learn events are currently non-revenue earning.

Evening Events

September 2017 **Innovation for Subsea Fields of the Future** (Woking)

October 2017 **Offshore Floating Wind Evolution or Revolution**

November 2017 **Subsea Boosting Systems**

January 2018 **Global Offshore Prospects**

February 2018 **Seiche and BMT Global**

March 2018 **Subsea Flowline Lateral Buckling Design**

May 2018 **Bouri (Libya) FSO Replacement**

June 2018 **Castrol Keeping the Subsea World Moving**

The 28 June evening event was our last meeting at Imperial College as their rooms will only be available in holiday periods. Ideally, we want to keep the events in the West End and in a formal lecture theatre. Cheryl Ince has conducted a survey of potential rooms but most are expensive and or grubby. Best option would be to use the Charles Taylor's, (Loss Adjusters) conference room, but have yet got any confirmation of viability. Ideally it would be best to be independent of hospitality of a single corporate member. IMarEST/ImechE has rooms in Bird Cage Walk. This has been discussed with David Loosely CEO Imarest. There is a 40-person attendee room FOC and other larger rooms available for a charge. We maybe able to get a discount on larger room hire through IMarEST.

We are looking at options, wine and cheese at the venue could be replaced by pie and beer at a nearby pub.

The Woking Christchurch venue would still be used for at least one event/year though our venue has increased prices to £12.50/ head so Woking events also require sponsorship.

Profits are not mandatory, but LSE has to cover loss making events and fund SUT+. Improving the rolling forecast helps to see the overall picture

We have been holding back on evening events for the autumn of 2018. Our first evening event of the financial year will be the Westwood Global Energy Prospects in January 2019. As numbers attending this event are high it will be cost effective to use one of the conference facilities at IMechE.

SUT+

Our SUT+ is an active group, running social and learning events to encourage younger interest in SUT LSE. Where possible events are free.

LSE gives SUT+ £1000 annual allocation. This was partly used (£293) to fund bar snacks at the SUT+ speed networking event.

Events

March 18 **Women in Industry Panel session at Oceanology**

May 18 **Speed Networking event at Ye Olde Watling Pub**. Only 13 from 28 booked attended but still a successful event. SUT+ used LSE budget to supply bar snacks.

May 18 **East Anglia 1 Windfarm Geotechnics**

We need to limit the amount of "no shows" at free events. A refundable deposit would cause too much admin. Better to have a nominal £5 cost that would be refunded against a free drink on arrival (or taken by SUT as an admin fee)

An SUT+ LinkedIn account has been set up.

I have concerns on how to differentiate LSE events from SUT+ events given that the latter are free to attend and that anyone can attend (not just SUT+). A possible answer is to integrate two FOC SUT+ events per year within the

London & South of England Branch

contd.

calendar of normal evening events. The aim is for an LSE committee member to sit in on SUT+ meeting to provide guidance, if needed!

Lunch and Learn Events

Lunch and learn events are free to attend and normally held at the sponsors' premises. The sponsors are city insurance companies but does not have to be so. As with SUT+ free events there seems to be a high level of no-shows. Sometimes this is inevitable if there is a crisis in the insurance world. However, having a nominal fee going to SUT would stop some no-shows and would provide income to SUT. At the moment events get full on the booking system so we are turning away people, but the actual event can be only 2/3 full.

Events run:

September 2017 **Underwater Explosive Ordnance Risk Mitigation and Logistics**

October 2017 **Latest Developments in Electrical ROV Design**

November 2017 **Floating Tidal: Ahead of the Curve**

January 2018 **Global Offshore Prospect**

April 2018 **Decommissioning**

City Subsea Awareness Course and Unexploded Ordnance courses

A successful CSSAC was run in November. This was a one-day course presented by paid lecturer Bob Summers. Although well-received, it was felt that the course was too focussed on drilling techniques and that there were other topics not covered such as weather and windfarms. Weather factors have a major influence on claims. To try and focus on what the target audience wanted, a meeting was hosted by Keith Broughton on 12 June with three city loss adjusters. It makes sense to run the course in a modular way, similar to the SSAC courses in Aberdeen, with each module having different presenters. The presenters could/should come from SUT membership. Eight modules have been identified and could be run over a series of afternoons. This major revamp of the course will take time, but we are focussing on this rather than running another course with the current format.

The last SSAC benefited from cooperation with Lloyds U35, encouraging younger members in the City to attend and SUT+ members. We want to see this continuing, Lloyds U35 endorse the course and are mentioned on the flyer but make no financial contribution.

HQS Wellington is still seen as the ideal venue for these events.

It is still planned to run a longer (4 x ½ days) in 2019. This would be targeted at senior loss adjusters.

Unexploded Ordnance courses are a work in progress again for the City Insurance market, we are currently in conversation with lecturer Richard Batterick regarding these. We hope to run a UXO course in 2019.

Like elsewhere we are restricted by available effort to set up and run another course, though we have set up a working group to assist.

Greenwich Forum and Parliamentary Groups

SUT needs to promote itself better in other forums like Greenwich and UK Parliamentary groups and needs to have a permanent presence on Greenwich Forum. POST (Parliamentary Office for Science and Technology) is a civil service group that is worth interfacing with as POST briefs both Houses of Parliament. This is on-going; ideally an LSE representative would sit on both forums, and an LSE subgroup could be formed to coordinate parliamentary interface.

Summer BBQ 21 June Wellington

Financial year end BBQ was again held on the *HQS Wellington* this time with addition of "Risky Business", a twelve-piece band from Insurance company Beazleys. Sonardyne again sponsored the event for £1500. As seen on the accounts, despite greater numbers attending, margins were lower than last year. Wellington had increased costs the costs of hiring their ship, but we could not increase ticket cost above the £87.50 that we charged last year. Its basically a BBQ on a great venue. Even after Jacqui Adams negotiated the *Wellington* rates down, we were still

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at breakeven, and relied on Sponsorship, to cover additional costs.

The ticket price was too expensive for most SUT+ members so we used sponsor money to offer 10 tickets to SUT+ members at £50 per head, to encourage younger members to attend. Only a couple of these were taken up.

The event was a great success, but where there are low margins, it adds stress, and takes up more time from Jacqui and LSE committee. Our preferred option is to run the event on the Wellington next year but will need confirmation of costs from Wellington, agreed sponsorship and some guaranteed corporate bookings, for the LSE committee to be comfortable. As a contingency, other venues are being considered.

SW Chapter Update

The chapter was stimulated by the enthusiasm of Brian Green, and the desire to hold events in SW England from companies involved in Subsea Technology. We were also helped by the Met Office. They have an outreach program as a result of their more independent status. They are prepared to host events, but these are under their terms ie they do not want to charge for events. They have other laudable desires to see more women in the industry, which we all do, but the current demographics will only show present gender balance at events.

Events

March 2018 **Networking lunch at OI sponsored by Met Office**

April 2018 **Exeter Autonomous integrated technology lowering the cost of IRM**

June 2018 **Exeter SW Offshore Floating Wind design and Installation**

The SW chapter has attracted other interest from industry and scientific community giving potential for joint events with other parties such as Plymouth Marine Learning Alliance.

Brian, now the Branch Honorary Secretary is keen to directly market corporates in the South West. We have had some issues with GDPR rules on use of the SUT database by non SUT staff (ie all volunteer committee members) but hopefully these will be resolved. It is essential both in the SW and elsewhere in the LSE region that we market ourselves better to our corporate members.

Subsea UK Partnership

This is a technical partnership between SUT and Subsea UK. The latter have full financial responsibility for running events, SUT endorses and helps with papers and technical content.

A one event took place Bristol on 10 July on "Life of Field" and another is scheduled in Woking for 22 November 2018. These are one-day seminars with costs £95 per head. SUT members will get a £10 discount.

The Woking Event is planned be held in the HG Wells centre. Woking's theme, appropriate to the venue is "Back to the Future".

Conclusion

2017-18 was a successful year for LSE. We have developed and structured SUT LSE better. We understand our support infrastructure from SUT HQ and have integrated the help from events manager Jacqui Adams in Aberdeen. We have expanded the SW group to a Chapter. We have successfully run our events and only cancelled one when it looked too marginal. We are starting to use the model of Perth branch, to use sub-committees or working groups. We have set up two, one for membership and one for the City SSAC. At the moment we are dividing the six active members into working groups of four. We do need to encourage more active committee members.

The issues that face us:

We need to reach a conclusion on the evening event venue in London. Without a venue, we are not performing our primary role of knowledge dissemination. The city has got ruthlessly expensive, even as a learned society and charity, the good deals are few and far between. With costs high, events have to be sponsored and our relationship with corporate members strengthened.

SUT LSE needs a defined list of the corporate members under its remit. We must look at all ways that companies support SUT either corporate membership or "support in kind". Some City corporates will sponsor a "Lunch and

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Learn” but are not corporate members.

We need to target SUT-friendly people within companies that can help get buy-in to corporate membership. These people are not likely to be CEO level. All companies need a regular update of SUT activities and benefits. At the moment we are not consistently connected and engaged with all our corporate members.

The City SSAC and UXO courses should eventually have a good revenue stream. The restructuring of the City SSAC and launching of the UXO just takes time but our working group will try and accelerate this.

As elsewhere in SUT we are aware that not all attendees of Special Interest Groups members of SUT. We need better control and encouragement to be SUT members

With lower margins on events we need to change what we are providing as far a hospitality maybe just food and no free alcohol.

We need to share events with other similar groups such as Hydrographic Society, IMCA, AMSI, Imarest etc. The joint seminars with HySoc in Aberdeen are good events and revenue earners.



North of England Branch

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



Michael Williams

Committee

Chair Michael Williams
 Vice Chair M Bingham
 Honorary Secretary
 Dr S Benson
 Treasurer Dr I Frazer

Dr P Allen
 Dr S Benson
 J Greenwood
 Dr A Pople
 A Roberts
 E Waterman
 M van Zwanenberg
 Dr G Varelis

The North of England Branch meets on a bi-monthly basis, and has organised four technical sessions, one field trip, 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.

Committee

The committee of the North of England Branch has had nett growth over the last year, though we were sad to see the retirement of SUT Fellow and Branch Founder, Dr Jerry Baker in November 2017.



It was fitting that we commemorated Jerry in the lecture hall of the Marine Department of Newcastle University, as he is an alumni of the School of Marine Technology MSc (though we'll not mention which year!) - Jerry went on to undertake his PhD up in Strathclyde on the Hydrodynamics of ROVs. Jerry subsequently worked for Shell, Boreas and Atkins before setting up his own consultancy.

Outside of his valued professional contribution to the Subsea industry, Jerry has been a staunch supporter of the SUT for the last 20 years including two spells on the SUT council. Initially Jerry spent that time with the committee based in Aberdeen, he then set up the North of England branch back in 2008.

Over the last nine years Jerry fulfilled the role of Chair and Honorary Secretary and has contributed a huge amount of time and energy to the Society and the success of our branch.

During the period the branch has organised at least 49 evening events, attended by nearly two thousand people, alongside daytime seminars and at least one boat trip up the Tyne. However, 15 November 2017 was his last meeting as a committee member – as he rightly pointed out 'he's due a break!'

We were joined on the evening by SUT CEO Steve Hall, who kindly presented Jerry with a bottle of Scottish Whiskey and a commemorative glass to sip from.

Activities

Evening Meetings

In September 2017, 19 people attended an evening meeting hosted by the School

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of Marine Science at Newcastle University. The theme of the meeting was 'Subsea Infrastructure; introduction & virtualisation' and the technical talks were partly delivered and ably chaired by Dr Jerry Baker from Baker Marine Technology Ltd.;

- 'Introduction to Subsea Infrastructure' delivered by Jerry Baker, Baker Marine Technology Ltd. Dr Baker's presentation described typical subsea infrastructure and its function, and explained 'why it is the way it is', by looking briefly at its history. It then looked at the range of operational support and intervention required on subsea infrastructure at different stages in the lifecycle.
- The topic 'SENTIO – Synthetic Environment and Virtualisation Platform' was delivered by Dr Mahesh Menon, Digital Services Manager, Soil Machine Dynamics (SMD). Sentio is a true physics-based platform that enables the user to create physical offshore operations in a virtual space.

A detailed meeting report for the evening can be found on the SUT website, courtesy of James Young and Tom Arnold, Engineers from PDL Solutions (Europe) Ltd.

In **November 2017**, Michael Williams, in his official capacity as Chair for the North of England branch outlined the financial position of the branch during our AGM. As noted earlier, SUT CEO Steve Hall presented a gift to Dr Jerry Baker on the occasion of his retirement from an active role in the committee, the evening then proceeded through the following technical topic;

- The technical talk of the evening was kindly provided by Paris Mangriotis, a Naval Architect and Engineering Director at London Offshore Consultants Ltd (LOC)
- Paris identified the 'Technical challenges encountered during the Costa Concordia wreck removal'
- The presentation mirrored LOC's extensive involvement with the project over a five-year period. It followed each phase, from initial response immediately after the sinking, through to selection of the removal method and contractor, parbuckling, re-floating, recycling and eventually restoration of the environmentally sensitive wreck site.
- The evening, again hosted by Newcastle University, was attended by 53 people.



In **January 2018**, Dr George Varelis, Senior Engineer from PDL Solutions (Europe) Ltd chaired a meeting at Newcastle University titled "Tubulars in Subsea Applications", which was attended by 45 people. We had talks from two experienced and interesting speakers as follows:

- Spyros A. Karamanos, Professor and Chair of Structural Engineering, School of Engineering, The University of Edinburgh provided an insight into the 'Effect of JCO-E pipe manufacturing process on deep-offshore pipeline structural performance'.

In the presentation, Professor Karamanos discussed the finite element modelling of the JCO-E pipe manufacturing process, a commonly adopted process for producing large-diameter thick offshore pipes. He outlined the effect of JCO-E line pipe manufacturing process on the external pressure resistance of the pipes - candidates for deep-water applications. Ultimately the large-diameter, thick-walled steel pipes are subjected

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to external pressure during their installation in deep-water, which may trigger structural instability due to excessive pipe ovalization, with catastrophic effects.



- Steven Frazer, Product Design Manager, Technip Umbilical Ltd then provided an insight into 'Key aspects of umbilical design and manufacturing'

The umbilical product comes in multiple forms and has key considerations which steer the design of the product to ensure it is fit-for-purpose throughout the product lifecycle. The talk outlined the different umbilical products, their function, manufacturing techniques and the key drivers and challenges faced during the design and engineering phases, with focus placed on the Steel Tube Umbilicals.

A meeting report for the evening can be found on the SUT website, courtesy of John Cowper, Engineer from PDL Solutions (Europe) Ltd.

In **March 2018** we were educated on the topics of 'Well Intervention & MMO Marine Licensing'

Michael van Zwanenberg, Principal Engineer from Curvetech chaired the evening where we heard from;

- Craig Loughlin & Chris Turner, Strategic Licensing Team, Marine Maritime Organisation (MMO).
- Martin Jolliffe & Jon Greenwood, engineers from Osbit Ltd.



Craig and Chris explained that the MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food and Rural Affairs. They licence, regulate and plan marine activities in the seas around England so that they're carried out in a sustainable way.

As part of their role, the marine licensing function helps to boost the UK economy whilst also ensuring that important species and habitats are protected against environmentally damaging activity.

Martin and Jon from Osbit are experienced members of the North East based community of engineers active in the design and development of bespoke, and often industry changing, equipment to support client's real and operational needs. They explained that well intervention is undertaken for many reasons during the life of an oil well. The talk outlined some of the key reasons for undertaking well intervention, along with the techniques and equipment involved. This context provided the backdrop for the growing range of industry leading Well Intervention equipment designed and delivered into service by Osbit, in support of its client's objectives. Ultimately, the talk offered an insight into some of that Osbit equipment and the experiences in its genesis.

55 people were packed into the Newcastle University lecture hall and made good use of the opportunity to pose probing questions to the speakers. A meeting report for the evening can be found on the SUT website, courtesy of

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James Young, Engineer from PDL Solutions (Europe) Ltd.

Our **May 2018** afternoon/evening meeting comprised an 'away day' site visit to the Port of Blyth, attended by 38 people. The format of the event incorporated four short tours centred around the Newcastle University Marine Station and a networking 'fish and chips', kindly hosted by Andy Williamson from Port of Blyth.



We were fortunate enough to;

- Tour the Newcastle University marine technology lab; The centrepiece of the facility was the Emerson Cavitation Tunnel – a propeller testing device originally housed on the university campus and now enhanced with upgraded capability for future R&D. We learned about the phenomena of hydrodynamic cavitation experiments, the historical connection to the North East (starting with Charles Parsons), and the future opportunities for research of novel marine propulsors, turbines, coatings and subsea devices.
- See the workshops, boat yard and a tall ship at the Blyth Tall Ship project. This enterprise is setting out to recapture the spirit of adventure and global entrepreneurship that was employed in Blyth to discover the Antarctic land mass 200 years ago, in a sailing ship called the *Williams*. The project is aiming to recreate the original voyage and conduct an expedition to celebrate the discovery of Antarctica. The opportunity to go onboard the ship was particularly insightful and gave us a new understanding into the space available for the crew.
- Tour inside the Royal IHC facility in the Port of Blyth. The tour acted as a "show and tell" for some of the innovative subsea products currently in production, we were able to see large subsea ploughs, their Hi-Traq vehicle and trials of a drilling rig.



- Take a trip on a boat to tour the river frontage on a fine, albeit chilly, evening! Our groups headed out on the Newcastle University research vessel, the *Princess Royal*, and sailed up to the top of the river and then back down to the breakwater. This gave an opportunity to see moored lay vessels, drill ships and jack-ups from the waterline, and really gain an appreciation of the scale of engineering undertaken in Port of Blyth.

SUT+

Our SUT+ committee continues to go from strength to strength, under the watchful eyes of Eugenie Warden, Thomas Pallister, Elizabeth Waterman, Denis Vasiljev, Thai Truong and James Brierley. The SUT+ team successfully delivered the second Schools Event on 19 October 2017 which was held at the Northumbria University. The event

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was titled "Engineering under the waves" and gave local school and college students from Dame Allen's, the Royal Grammar School, KEVI Morpeth and St Thomas Moore Catholic School, along with eighteen individual attendees, the opportunity to engage with our subsea community. The event would not have been viable without the help of five local companies for their sponsorship (Baker Hughes a GE Company, TechnipFMC, SMD, PDL Solutions (Europe) Ltd and Royal IHC) – their sponsorship was gratefully received and shown to be worthwhile when you get student feedback like: "The event was really insightful and helpful. It opened up my mind to how I could approach getting into engineering".

After the success of last year, the group will be repeating the event on the 18 October 2018, again at Northumbria University. We are again indebted to six local companies for their sponsorship (Baker Hughes a GE Company, OSBIT, TechnipFMC, BEL Valves, SMD and Royal IHC) as well as the support provided by our branch sponsors.



Outside of the Schools Event, our branch SUT+ committee have had a busy year; they have continued their knowledge transfer site visits by holding a very well attended company visit to TechnipFMC. In addition, they have had social activities including breaking the record for the Newcastle Escape Room and meeting for drinks in Newcastle. They are always looking for new members, so please get in touch if you would be interested to sutplus. noe@sut.org.

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 sponsorship received from speakers and local companies throughout the year.

Recognising the effect of the current economic climate on a number of the companies and individuals involved in our local subsea community, we have continued the initiatives implemented in 2016/17 to reduce costs whilst still meeting the objectives of the branch.

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.

Future Plans

We will continue to have technical meetings bi-monthly over the next year with a recess over the summer, when we will have a committee planning meeting but no evening event. The focus of the committee in the coming months will be to continue to attract additional members to the committee – we have a fantastic pool of exciting companies and personnel in the North of England and wish to gain maximum benefit for the Society from that pool.

In the short term, our October 2018 meeting will delve into the innovative technology used for subsea survey and the subject of the November meeting will be the use of DeepOcean's ADUS laser system.

Our October Schools Event is sure to build upon the good work initiated by our SUT+ committee in 2016 and 2017, we also look forward to seeing the SUT+ develop their group in the North of England over the coming year.

Norway Branch

www.sut.org/branch/norway



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 SAC course with an excellent program. We have reduced participation fee, we have reduced the duration of the course, but we had still too few attendees, and unfortunately, we had to cancel course again.

In earlier years the courses were extremely popular, and we are confident with the upturn of the industry that we can get the course up-and-running again in May 2019.

SUT Norway also attended Underwater Technology Conference in Bergen in the middle of June. During the UTC Conference we had meetings with Steve Hall and Emily Boddy. The meetings were important to improve and update the information on the SUT website for the Bergen Branch.

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.



Nils Vågen

Committee

Chair Nils Vagen

Manager Tom Erikson

V Fondevik

O Hagesaether

GA Johansen

RD Skre

I Westervik



Singapore Branch

www.sut.org/branch/singapore



Anthony Gleeson

The Singapore Branch has emerged intact from the downturn of recent years, continues to attract new members and to hold daytime and evening events. The Branch held three evening technical meetings during the year, usually with three speakers plus networking time after the presentations and Q&A session. These events were quite successful, with a typical attendance of around 50-60 people, most recently in October.

The branch welcomed Anthony Gleeson of Sonardyne as the new chair and elected a new committee in August 2018 after the previous Chair resigned. We plan to hold a social event at the end of the year.

Singapore members also take part in the wider activities of the Society, including taking part in the technical sessions of Oceanology China and providing input to our committees and special interest groups. Members have a good relationship with our Perth Branch, and are well placed to help SUT grow in China. We also enjoy a good working relationship with our friends in IMarEST in Singapore.

Our next regular AGM will be held in January 2019.

Committee

Chair

Anthony S. Gleeson

Vice Chair

Colin Campbell

Treasurer Che Keong Lee

Secretary

Jose Manuel Puig

William Lee

Mark Colbridge

Wendy Lee

Andy Ching

Sampaul Singh

Derek Donaldson

Xiang Liu

Maxime Even

Andrew Blears

US Branch

www.sut.org/branch/houston



SUT-US is comprised by an Executive Committee and five technical committees; Offshore Site Investigation and Geotechnics (OSIG), Subsea Engineering and Operations (SEO), Group on Environmental Forces (GEFUS), and the newly established Robotics & Automation (R&A) officially launched in March 2018, and Offshore Renewables (OR) that is to be inaugurated in the following months; 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:

- Reed Exhibitions has suggested the Houston Branch of SUT be the lead Learned Society of Oceanology International USA 2019 San Diego. There was overall support to do this, should the opportunity materialize. The OSIG is committed to assisting with the conference.
- Dr. Medina-Cetina, SUT-US Chair, and Kimberly Faulk, OSIG Chair, introduced a formal statement on behalf of the Society to promote diverse and safe environments for all professionals. The Executive Board accepted this proposal and it is now published and available through the Branch website: <http://sut-us.org/About-Us/Statement-on-Discrimination-and-Sexual-Harassment>
- The Executive Board approved changes in the SUT-US constitutions, proposed by Dr. Medina-Cetina, that require its committees including the Education Committee, Young Professionals and Student Chapters to establish their own committee's constitutions. Other notable changes in the constitution include:
 - Presidents of the SUT-US Student Chapters become official members of the SUT-US Board to represent their corresponding Chapters in all meetings throughout the year, but are not be eligible to vote.
 - Chairs of the SUT-US technical committees become official members of the SUT-US Board



Zenon Medina-Cetina

Committee

Branch Hon Chair & President
Zenon Medina-Cetina
Hon Treasurer and Training Officer
Don Schlater
Hon Secretary
Jan Van Smirren
Education Committee Chair
John Allen
Subsea Engineering and Operations Chair
Maria Ancheril

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. Natalie Zielinski decided to take on a job at Sea-Bird Scientific in Seattle early January 2018 and is no longer working for the SUT-US. While Mrs. Rachel Kokel received a job offer as training instructor for a company in the oil and gas sector.

Overleaf is a summary of the key activities held at the SUT-US branch for the period of 1 July 2017 – 30 June 2018.

Roger Osborne *Member at Large Special Events*
Kim Faulk *Member at Large*
Christopher Curran *Member at Large*
Andrew Haigh *School Touring Chair*
Matt Kirk *Member at Large*
Earl Doyle *Member at Large - OSIG Secretary*

Logan Brant *Member at Large*
Aimee Thurlow *Member at Large*
Fathi Ghorbel *Robotics & Automation Chair*
Mark Siegmund *Member at Large*
Patricia Varela *Young Professionals Chair*

US Branch

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Networking Meetings

Attendance

- | | |
|-------------------------|---|
| 1. July 13 2017 - 31 | 8. February 1 2018 - 18 |
| 2. August 3 2017 - 23 | 9. March 1 2018 - 11 |
| 3. September 7 2017 - 0 | 10. April 5 2018 - 32 |
| 4. October 5 2017 - 20 | 11. Pre-OTC Kick-Off Party April 26 2018 - 38 |
| 5. November 2 2017 - 13 | 12. June 7 2018 - 22 |
| 6. December 7 2017 - 13 | 13. June 14 2018 - 36 |
| 7. January 11 2018 - 33 | (First SUT-US Women's Networking Event) |

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 13, 2018. Presenters included: Brian Skeels, Senior Technical Advisor, TechnipFMC, Don Schlater, BP Retired, Charles Horn, NanoRidge Materials, Inc, and Karl Schnakenburg, Subsea Engineering Advisor, BHP. Attendance: 24

Scholarship fundraisers

SUT-US organized a whisky-tasting event "The Art of Whisky Tasting" on March 30, 2018. Chopard Boutique Houston sponsored this event.

A clay shoot event was scheduled for August 31st, 2018. 50% of this event's proceeds will help special needs children from the Be An Angel Fund as our official sponsor.

AGM

SUT US' Annual General Meeting was held on December 7 2017. During this meeting, the executive committee introduced the new elected board members:

- Aimee Thurlow, Integral Consulting Inc.
- Roger Osborne, Ocean Flow International (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 2017/2018-year have included learning luncheons, courses, and school touring programs.

Learning Luncheons & Webinars

- **July 11 2017 25 - Reliability-Based Design of Offshore Geostuctures**
Dr. Farrokh Nadim, Technical Director, NGI
Webinar attendees: 25
- **September 8 2017 - Experience in pipe-soil interaction: physical testing and modeling, and design analysis**
Dr. Vishal Dantal, NGI Houston
Webinar attendees: 7
- **September 26 2017 - MASW for Offshore Wind Turbine Site Characterization**
Dr. Choon Park, Lead Author, MASW Technique, Chevron
Seminar attendees: 11 Webinar attendees: 12

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- **April 5 2018 - The Fourth McClelland Lecture**
Dr. Alan Young, The Fourth ISSMGE McClelland Lecturer
Seminar attendees: 32 Webinar attendees: 6

Workshops & Courses

- **August 21 2017 - Design and Reliability of Offshore Geo-Structures**
Attendees: 16
- **April 16-18 2018 - Introduction to Integrated Marine Site Characterization**
Seminar attendees: 22 Webinar attendees: 5

OSIG is helping to design and support a new women's networking initiative, although it requires support from the other subcommittees. The first networking event was held on June 14 featuring Geeta Thakorlal, President of INTECSEA as keynote speaker. The event was considered a success and the participants showed interest in participating in future women networking events.

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 over 1,500 students from K-12th in the 2017/2018 year.

- **June-August 2017 – 10 Week Program Arch 101 and Extreme Machines**
Houston Museum of Natural Science (HMNS)
Students reached: 400
- **Dec 2017 – 6th Grade Geology Rocks**
CFISD Opal Hamilton Middle School
Students reached: 450
- **March 08 2018 – 12th Grade Seeing with Sound & Opportunities**
CFISD Cy-Creek High School
Students reached: 200
- **April 23 2018 – 4th Grade Seeing with Sound**
Humble ISD Science Center
Students reached: 40
- **April 29 2018 – 6th Grade Geology Rocks**
FBISD Sartartia Middle School
Students reached: 450

The School Touring program has faced difficult times revamping its activities and picking up its pool of volunteers after the hurricane disaster in September 2017. Unfortunately, Andrew Haigh, Chair of the School Touring Program, and his family were affected themselves by this disaster.

The primary goal for the next nine months is to rebuild the program to near where it was in July 2017. It is actively re-engaging with CFISD at their middle school teachers' event and with SUT-US student chapters. Also, there is interest and involvement from the Young Professionals Committee (YP) and the Group on Environmental Forces (GEFUS).

Among its efforts to rebuild, the committee is evaluating possible collaboration with other educational programs and will participate at the International Archaeology Day on October 20 2018.

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Upcoming events for OSIG 2018:

- **September 28 2018** – Workshop: Integrity and risk assessment of pipelines and SCRs
- **November 16-18 2018** – Marine Archaeology Course

SEO Committee

SEO is comprised of nine members. SEO's activities for the 2017/ 2018 year have included learning luncheons, webinars and its flagship subsea course:

Learning Luncheons & Webinars

- **September 15 2017 - Next Generation of Subsea Vehicles**
Todd Newell, VP of Technology, Oceaneering
Seminar attendees: 24 Webinar attendees: 4
- **November 30 2017 - Optimization vs Standardization**
Amedeo Marcotulli, E&C Offshore - Engineering Manager, SAIPEM America Inc.
Seminar attendees: 19 Webinar attendees: 9
- **February 22 2018 - Subsea Chemical Storage and Injection**
Daniel Krohn
Seminar attendees: 11 Webinar attendees: 6
- **April 19 2018 - Application of LiDAR Technology for Subsea Inspections and Metrology**
Michael Meehan, Lead Surveyor, TechnipFMC North America
Seminar attendees: 16
- **May 24 2018 - Westwood Global Energy Deepwater Outlook for 2018-2022**
Andrew Meyers, Associate Director at Westwood Global Energy Group
Seminar attendees: 36 Webinar attendees: 3

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, the Jukes Group and Oceaneering.

The staff has been conducting surveys after every course to learn more about the participants' experience and to receive feedback in order to improve the course in future editions in terms of logistics and presentations material. Some of the feedback suggested re-arranging the order of the presentations to improve the flow of the course; other suggestions included a reduced version of the course. The SEO intends to establish a new marketing strategy to target operators directly aiming to increase the participation numbers.

On October 2-5 2017 the SAC had a high participation level due to an agreement that Dr. Medina-Cetina's closed successfully worth 15 seats with the Instituto Tecnológico del Petróleo y Energía (ITPE). This group in particular, participated in an extra visit to Texas A&M University to visit research labs and attend risk assessment presentations.

Six learners participated in the February 26 – March 1 2018 SAC, and seven more are confirmed to participate in the September 10-13 2018 training.

Upcoming events for SEO 2018:

- **September 10-13 2018** - Subsea Awareness Course
- **December 3-6 2018** - Subsea Awareness Course
- **Drilling 101** – Course

US Branch

contd.

GEF Committee

The Group on Environmental Forces (GEFUS) was officially launched on August 10th, 2017. Jan Van Smirren was elected Chair and Rob Smith, Vice Chair. Currently, 19 volunteers form part of this committee.

GEF will be dedicated to advancing the understanding of meteorological-oceanographic investigations and improving the assessment of the corresponding environmental forces required for the proper design of offshore structures.

As part of GEFUS' first efforts to take the group forward, the committee organized a two-day workshop by Mexico's Research Consortium for the Gulf of Mexico (CIGoM): "Emerging Data and Models from the Gulf of Mexico. Mexico's Integrated Baseline Development of Atmospheric, Oceanographic, Geological, and Ecological Processes, for Future Natural and Anthropogenic Threats." The Workshop took place on January 11-12 2018 and counted with 25 participants.

The College of Geosciences, the Departments of Ocean and Civil Engineering, the Center for Geospatial Sciences, Applications, and Technology (GEOSAT) and the Stochastic Geomechanics Laboratory (SGL) from TAMU co-sponsored this event.

Learning Luncheons & Webinars

- **November 9 2017 - Thrown for a Loop**

Chris Riffe, Chief Technology Director at Horizon Marine, Inc.

Seminar attendees: 21 Webinar attendees: 10

Upcoming events for OSIG 2018

- **September 20 2018** – Marine Assurance
- **October 11 2018** - Overview of Vortex-Induced Vibrations and Its Suppression Devices
- Metocean Awareness Course

Robotics and Automation Committee

The Robotics and Automation Committee (R&A) was officially launched on March 29 2018 at Rice University. The elected Chair is Dr. Fathi Ghorbel, Professor at Rice University, and Director of the Robotics & Intelligent Systems Lab.

The program of activities for the inauguration of this Committee included a seminar by Steve Hall, CEO of SUT, entitled: "Deep Eyes in the Ocean," student poster presentations from the SUT-US student chapters, and a follow-up meeting on Rice University's 2017 AUV Workshop sponsored by the Subsea Systems Institute (SSI, a joint Rice-US-NASA institute).

Individuals from the following organizations committed membership: Schlumberger, SAAB, inRobotics, Kongsberg, Chevron, CANRIG, RBR Group, TAM, UHCL, and Rice. The first R&A Committee meeting is scheduled to occur early Fall 2018.

Offshore Renewables Committee

Roger Osborne, Deepwater Projects at Ocean Flow International will lead this Committee. Current efforts are focused on defining membership.

A first learning program "Offshore Renewable Energy" has been organized jointly with the Offshore Site Investigation and Geotechnics Committee (OSIG), taking place on August 30 2018 and presented by William Stewart, Founder of Stewart Technology Associates.

Education Committee

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

US Branch

contd.

The 2017 scholarship recipients were recognized during the Scholarship Awards Ceremony on November 3, 2017. The selected students by the Scholarships Subcommittee were:

- Grace Tsai, Nautical Archaeology, Texas A&M University
- Devvrat Rathore, Subsea Engineering, University of Houston
- Luz Zarate, Physical Oceanography, Texas A&M University
- Marissa Malinoski, Marine Engineering Technology, Texas A&M University at Galveston
- Natalie Oswalt, Mechanical Engineering, Texas A&M University
- Rachel Holzhauser, Ocean Engineering, Texas A&M University

This year's scholarship recipients will be awarded during the Scholarship Awards Ceremony on November 1 2018. Steve Hall, CEO of SUT, is expected to be the invited keynote speaker for the evening.

On September 26 2017 the Education Committee launched the SUT-US Rice University Student Chapter. Dr. Fathi Ghorbel, Rice professor from the Department of Mechanical and Bioengineering and Director of Robotics and Intelligent Systems (RiSYS) serves as the faculty advisor for the new student chapter. Dr. Ghorbel's research closely aligns within SUT's areas of expertise, studying nanorobotics and nanomanipulation, robotic rehabilitation, in-pipe robotics sensing and inspections.

The Rice chapter has selected the following engineering student leaders, Issam Ben Moallemas for president, Clark Zha for vice president, and Hankun Deng for treasurer.

Young Professionals Committee

Five young volunteers who have committed to re-launch this group comprise the Young Professionals Committee of SUT-US (SUT-YP). The SUT-YP promotes a multi-faceted approach to personal and professional development by providing access to educational forums, mentoring programs, networking events, and outreach opportunities. Their inaugural event is scheduled for August 23, 2018 where Dr. Medina-Cetina has been invited as the keynote speaker. The SUT-US will sponsor this event, but the goal for this group is to become self-sustained through the organization of learning programs and networking events.

Student Chapters

SUT-US gave its student chapters their annual sponsorship checks on September 2017 during Rice University's student chapter inauguration. The annual contribution serves as an affirmation of SUT-US' support to the university student chapters. The chapters of the University of Houston, Texas A&M at College Station, and Texas A&M at Galveston were awarded a check of \$4,000 for the 2017-2018 academic year; and the new Rice University student chapter was awarded a check of \$5,000. The SUT-US has officially launched the first Mexico student chapter at Instituto Tecnológico del Petróleo y Energía (SUT-US-ITPE). The inaugural event took place on May 18 2018 where three of the SUT-US Branch volunteers including Jan van Smirren, Dr. Zenon Medina-Cetina & Steven Johnson, traveled to Yucatan located in the Southeast of Mexico, in representation of the Branch and presented lectures on Environmental Forces, Site Characterization and Subsea Engineering and Operations respectively. The SUT-US ITPE was awarded a \$1,000 check to support their 2018/2019 activities. The funds go towards chapter student activities such as professional seminars, one-day workshops, industry visits, poster competitions, and most recently ROV competitions.

The SUT-TAMUG is currently on transition of a new leadership as Marissa Malinoski has graduated and stepped down as Chair.

US Branch

contd.

SUT-TAMUG Spring Events for 2018 included:

January

- 18 – Organizations Night
- 24 – General Meeting

February

- 6-8 – Topsides Platforms and Hulls Conference (Galveston, TX)
- 7 – General Meeting
- 28 – ARTCO Presentation

March

- 13-15 – Subsea Tieback Forum & Exhibition (Galveston, TX)
- 18 – Cardboard Boat Race
- 30 - May 3 – Offshore Technology Conference (Houston, TX)

Similarly to Galveston, the SUT-TAMU student chapter organized a series of activities and events including an ROV competition on March sponsored by the Subsea Tieback Foundation, and a tailgate event where students had the opportunity to spend time with current members and learn more about the Texas A&M SUT chapter.

SUT-TAMU Activities & Seminars

- June 19 2017 - SUT-TAMU Student Board Meeting
- September 3 2017 - MSC Open House: Recruiting new SUT-TAMU student members
- September 4 2017 - Informational Social
- September 5 2017 - SUT-TAMU Student Board Meeting
- September 12 2017 - SUT-TAMU Student Board Meeting
- October 11 2017 – “Innovation during the Oil Downturn” by Eric Sears, TAMU Ocean Engineering Alum and Manager at TechnipFMC
- November 9 2017 – SUT-TAMU board members visit Stress Engineering Services facilities
- November 16 2017 – “Marine Archaeology” by Kimberly Faulk, Senior Marine Archaeologist for Geoscience Earth and Marine Services and Member of the SUT-US Board
- January 21 2017 - MSC Open House: Recruited approximately 60 new members
- March 24 2018 – ROV Competition

Program of activities 2018/2019

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

For more information about SUT-TAMU student chapter visit: www.sut-tamu.org

SUT-SES-UH student chapter also had an active year. They sponsored two students to attend the Deepwater Intervention Forum (DIF) on August 2017 and held a SUT-SES Technical Paper Contest. The topics for the Technical

US Branch

contd.

Paper Contest included:

- Novel subsea technologies for oil and gas
- Numerical modeling in the subsea engineering field
- Experimental testing of subsea oil and gas environment
- Renewable energy in the subsea industry

SUT-SES Activities & Seminars

- September 25 2017 – “Intervention and Completion Operations through a Horizontal Production Tree Using Subsea Test Trees (SSTT’s), Intervention and Work Over Control Systems (IWOCS), and Remote Operated Vehicles (ROV’s)” -

Speaker: Mauricio Baez, Global Senior Subsea Well Intervention Engineer, Chevron

- October 6 2017 – Pipeline Coating Plant Tour to SHAWCOR in Channelview
- October 13 2017 – “Subsea Survey, Testing & Design” by Alan Johnson, Formerly Principal, TechnipFMC
- October 19 2017 – Soils Testing Lab Tour at Fugro by Kerry Campbell, Principal Geoscientist
- November 17 2017 – “Future of the Subsea Industry (SUT-SES & Leviticus)”

Speakers:

- Matt Kirk, VP Subsea & Export Systems, Americas at Wood
- Carlos Moreira, VP of Projects at Genesis Oil & Gas
- Brian McShane, Executive Vice President at Intecsea

- March 2 2018 – “Electrical Power for Subsea Systems” by SIEMENS Corporation

For more information about SUT-SES-UH student chapter visit: www.subseaeng.org

The SUT-RICE is in the process of recruiting new student members and forming their executive board as most of the past members of the student branch graduated last May. SUT-RICE held a student poster session on March 29 2018 during the inauguration of the SUT-US Robotics and Automation Committee. Their plans for the fall include recruiting events, seminars by industry professionals about automatizing the inspection of oil storage and transport structures using underwater robots, and conducting a workshop about the ROV/AUV and related technologies such as inspection devices.

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.

Program of activities 2018/2019

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

West Africa Branch

www.sut.org/branch/west-africa



The West Africa Branch of the Society for Underwater Technology was established in May 2018. New organisations have signed up for the SUT cooperate membership, while some of the old members have retained their membership. The branch has been very busy pursuing outstanding membership subscription fees owed by the majority of the old members, but the overall plan is to commence its signature events and regular meetings in 2019.

The local branch has been working very closely with the National Centre for Technology Management of the Federal Ministry of Science & Technology, the energy industry and some Universities in Nigeria, Ghana, UK and Australia to develop postgraduate curriculum in offshore and energy related programmes, hopefully the local universities will commence the academic activities for the programmes next year. Apart from the SUT subsea awareness courses that have been running for over a decade now, the branch have also developed additional offshore and pipeline short courses due to popular industry demands

The West Africa Branch of the Society for Underwater Technology has worked out plans to establish its student's chapters in the University of Lagos, African University of Science & Technology Abuja, Federal University of Technology in Akure & Owerri, University of Port Harcourt, Obafemi Awolowo University Ile Ife, University of Ghana, and Nkwame Nkrumah University of Science & Technology Ghana.



David Agazuma

Committee

Branch President

David R. E. Agazuma

Chair Professor Francis Ifeayin Anyasi

Vice Chair Professor

Kehinde Abiola John

Vice Chair Nwogu

Chukwuemeka Nnamdi

Vice Chair

Dr Anietie Umofia

Vice Chair

Prof. B. I. Imasogie

Honorary Secretary

Dr Oloruntoba

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 Ikhuoria

Prof. G. I. Nwandikom

Prof K.D.H Bob-Manuel

Prof. Sunny Iyuke

Prof Joseph Fuwape

Onuoha Okechukwu

Ogbebor Anthony Osagie

Celestine Imhanbibi Okonokhua

Professor 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

Education and Training



Sue John

Committee

Chair Sue John

John Allen
 Emily Boddy
 Fiona Crouch
 Liz Davis-Smith
 Caroline George
 Jim Grant
 Steve Hall
 Shan Huang
 Glenys Jackson
 Eileen Kinghan
 Dr. Bev MacKenzie
 Roger Palmer
 Jonathan Potts
 Diane Prosser
 Duncan Purdie
 Laila Sadler
 Tim Slingsby

The SUT Education & Training Committee has 19 members from a mix of industry, Charity Sector and academia. I became Chair in 2017 and come from a classroom and university background but I have enjoyed a varied career working in and with science centres, museums, school career companies and the British Council, including the running STEM Ambassador schemes in Wales and Somerset. The committee meets twice a year - Spring and Autumn, where we review SUTs education and careers material online, plan events and review actions.

Membership includes representatives of UK, Houston & Perth branches and we are working with them to ensure that the SUT across the world is active in schools activities.

In future we'll engage with all branches to grow SUT's education and training footprint, especially during the United Nations forthcoming international decade of ocean science.

Our members are actively engaged in the work of the European Marine Science Educators Association (EMSEA) and Emily Boddy & Steve Hall represented SUT at their annual meeting in October 2017, where our '*Can a lobster be an archaeologist?*' book was a hit.

During British Science Week 2018, the Society held a primary school event at Lloyds Registry for year 4 & 5 pupils who enjoyed the talks from Garry Momber, of the Maritime Archeology Society and SUT CEO Steve Hall. The talks were inspired by our 'lobster' book, and were thoroughly enjoyed by the pupils and teachers. One teacher's feedback stated:

"We loved everything about the talks! It might be an idea to send over some questions or some thought provoking pictures or statements as a pre-learning before the children attend so they get even more from the talks, but other than that I don't have any suggestions as I thought it was fantastic."

This event is now providing a template for National Science Week 2019 where we'll continue to liaise with LR and colleagues in the education sector.

CPD Training

Negotiations for are on-going through Council and Steve Hall regarding CPD accreditation for the courses, in tandem with the discussions taking place concerning the possibility of SUT offering access to professional accreditation in future via a Professional Body partner.

National Maritime Museum Cornwall

Most of my year has been taken up with research and developing ideas for the museum's next year-long exhibition starting in March 2020. SUT are providing ideas and material on the exploration of the ocean theme, especially the contribution made by technology developments in the 20th & 21st centuries.

STEM Ambassadors and Christmas Lectures

STEM Ambassadors is a scheme that offers free working safely with children Disclosures for volunteers. They also provide training and support to industry and groups who provide school-based activities. One of their roles is to recruit schools for STEM-based activities. I have been working with my local centre and I am making progress to gain recognition for the Society in working with pupils inside and outside the classroom.

The Christmas lectures to schools remain successful in Scotland, but have seen a decline in attendance figures in London in recent years. It is clear there is still interest in providing these events to young people, but to control costs and raise numbers we'll work in centres outside the capital, for example working along the south and south west coasts, to increase numbers, and seek sponsorship. I am working with my local STEM Learning centre to hopefully grow numbers.

Educational Support Fund Management

The Society for Underwater Technology has supported 272 students since 1990 through scholarships awarded to high quality undergraduate and postgraduate students reading degrees relevant to underwater science, technology and engineering at well-regarded universities. Candidates are able to apply from all over the world, and in 2018 we received applications from Slovakia, Sweden, Italy, UK, Australia and Nigeria at undergraduate level and Mexico, Nigeria, France, India, Egypt and UK at postgraduate.

Unfortunately our funds are not sufficient to be able to award scholarships to more than a handful of students, so we carefully assess them, with a panel comprising experienced SUT members, against criteria where we look at the academic achievement of each student, their requirement for help with funding, their aspirations to work within our sector and with a weighting of courses where the most points are deliberately awarded to those such as subsea engineering at highly rated universities, and fewer points to courses such as environmental studies or marine geography. Even with this pro-engineering weighting, some candidates studying subjects such as marine biology can be so outstanding that they still come out as the top-rated students, so it can come as a surprise to learn that we regularly see students from institutions such as the Scottish Association for Marine Science or Bangor University, alongside those from places like Imperial College London or Robert Gordon University, at the top – many marine biologists do indeed go on to successful careers in marine industry, advising on environmental impact assessments, pollution response, and in future they will be key members of the teams who undertake deep ocean mining and bio-prospecting to meet the demands of the rising ‘blue economy’.

To date almost all of our students have secured a 1st Class or Upper 2nd Class honours degree, with many moving on to Masters or Doctorate training.

For the 2018-2019 Academic year the continuing students are studying Marine Technology at Plymouth, Marine Biology with Oceanography at Liverpool, Oceanography at Southampton and Marine Science at the University of Highlands and Islands. The two new students (Swedish and Italian nationals) are studying at James Cook University in Australia and the Scottish Association for Marine Science.

Looking to the future, in the coming year we plan to enter into a new project with the Sonardyne Foundation to support two students studying for PhDs at the University of Southampton. This is in addition to the students already supported by the SUT's Education Support Fund and is possible due to the new funding being supplied directly by the Sonardyne Foundation, who we thank very much.

Summary of Undergraduates graduating in 2018		
Bristol	<i>Meng Mechanical Engineering</i>	2:1
Summary of Undergraduates continuing in 2018-2019		
Southampton	Oceanography	
Liverpool	Maring Biology with Oceanography	
Plymouth	Meng Marine Technology	
SAMS	Marine Science	

International



Dr David Kirkley

Committee

Chair Dr David Kirkley
Secretary Stephen Hall

Laurie Ayling
Dr Zenon Medina-Cetina
(Houston)
Brian Green
Peter Metcalf
Ian Wilson (Perth)
Geoff Lyons
Richard Binks

The SUT International Committee met in May 2018 with participants from UK, USA & Australia taking part. It was the first meeting since June 2016, and recognised that after a hiatus for several years, the Society is once more actively growing around the world. We have reviewed our membership, are encouraging more input from the overseas branches, and are working towards ensuring that there is a single set of high-level regulations that cover all SUT Branches (allowing for a degree of local autonomy), with the expectation of a very high standard of ethical behaviour and for a professional approach to be seen as the pattern that will be adhered to throughout the Society's network of Branches. Due to the financial constraints, it is a while since a meeting of all of our international Chairs took place but the committee will work with Council and headquarters staff to seek ways to make this possible again.

Branches are looking to broaden their membership to encompass a wider range of interests such as offshore renewables, university research and sectors that have hitherto not featured strongly in our non-UK membership such as defence, policy, and education.

The largest non-UK branches remain Houston in the US and Perth in Australia, both based in locations that have suffered during the oil & gas industry downturn but both are recovering and are gaining new members. They are looking beyond the traditional core membership sectors to encourage newcomers from the wider underwater technology family. Houston Branch changed their name to SUT-US during the year and are working hard to spread activities and interactions across the whole of the USA, with a daughter branch under development in Merida, Mexico. Headquarters sent Publications Officer Emily Boddy to Australia for a seven-week placement in February and March 2018 with the Perth branch to share experience, learn from their best practice and build a closer relationship between Perth and the London head office,

At the April 2018 meeting of SUT Council, the decision was made to launch a new SUT West Africa branch to cover the needs of the underwater technology and subsea engineering community who are based in Nigeria, Angola, Ghana and other countries in the region who are developing their offshore capability. The International Committee will be monitoring development of the Branch to help them grow and learn from best practice in the rest of SUT. As a Learned Society, SUT has a responsibility to help deliver the United Nations Sustainable Development Goals, in particular SDG 14 pertaining to human interaction with the global ocean, and activities encouraging capacity development and knowledge exchange (particularly technical know-how as outlined in the UN Convention on the Law of the Sea). Activity in the branch in Bergen, Norway declined sharply during the oil & gas downturn. The Chief Executive will work with the Committee there to seek registration as a not-for-profit entity in Norway. It is the only current SUT non-UK Branch that it still technically part of the UK legal entity for accounting purposes.

Efforts led by Adrian Phillips to establish a SUT presence in the Middle East are being supported and SUT has been offered a slot at the ADIPEC conference Abu Dhabi in November to host an event in order to gauge interest in launching SUT in the region. Plans to launch an Atlantic Canada branch in April/May 2019 are advanced based on two centres: St John's Newfoundland and Halifax, Nova Scotia. St John's has a cohort of offshore energy companies and university interest led by Memorial University. Halifax offers an exciting cluster of organisations including COVE Ocean, Bedford Oceanographic Institute and the Ocean Frontiers

International

Institute, plus Dalhousie University, and defence-sector activity, making it an attractive location for SUT to grow. We also have members of the Engineering Committee for Ocean Research (ECOR) in the region, who will help form the core membership.

Interest has also recently been received from Portugal, and from Egypt, so the future growth of SUT looks promising as we seek to attract new members from across the world.

SUT Chief Executive Steve Hall will visit Beijing in October to meet Professor Frank Lim, Chair of the SUT China Branch, together with students and representatives of China's substantial marine university sector. We are working with Professor Lim to help develop membership, income streams and legal status within China for assured long-term growth there. Singapore branch elected Anthony Gleeson from Sonardyne as their new Chair in July 2018, Colin Campbell as Vice chair and Jose Puig as secretary. The branch will resume a programme of events and outreach activities and are seeking to grow their numbers. Meanwhile Kuala Lumpur maintains a steady programme of activity.

More information about the activities of SUT non-UK branches will be found in the reports from Branch Chairs elsewhere in the Annual Report.

Policy Advisory



Steve Hall

Committee

Chair S Hall

R Barrett
 DA Brookes
 ST Culshaw
 Dr R Gatliff
 Dr DW Kirkley
 Dr WD Loth
 Lt Cdr RJ Rogers

The SUT's Policy Advisory Committee meets on an 'as-required' basis to ensure that SUT is able to respond to requests from governments, industry or international bodies for professional, unbiased advice on a broad range of underwater technology issues. These range from responding to new developments in marine policy, law and planning through to science and technology foresight, answering specific questions that arise from government departments through to formulating input as to how SUT will rise to the challenges of addressing the United Nations Sustainable Development Goals. For example, SDG14 on Oceans asks developed states such as those where most SUT Branches are located, to undertake technology transfer and knowledge exchange with countries that are at a less-advanced state of economic and technological development - a task well suited to Learned Societies such as SUT. We will want to take part in the activities of the forthcoming UN Decade on Ocean Science and as the start date approaches will meet to look through areas where SUT can play a role.

The PAC did not meet during this annual report year, but UK-based members keep up-to-date by attending meetings of the Parliamentary Science and Technology Committee, taking part in activities of UNESCO's Intergovernmental Oceanographic Commission and through regular contact with civil & public servants.

As new issues arise, or where Council or PAC members become aware of questions that require expert input from SUT, the Committee will be reconvened to address the matters at hand.

Publications

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 although this year saw the change to a single volume per year, so a volume now consists of three issues rather than four. 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).

As part of revising some elements of the journal for its ESCI assessment, there has also been a reassessment of the structure of its Editorial Board. This has been enlarged to incorporate representation of a broader representation of the disciplines published by the Journal in recent years.

In 2018, the 2017 Offshore Site Investigation and Geotechnics (OSIG) proceedings were published online and with open access on the SUT's Ingenta Connect site (www.ingentaconnect.com/content/sut/1hzvzd). This will ensure a much wider readership but will also generate DOI numbers for each paper; this affords academic value to these publications. Past SUT conference proceedings continue to be published online at www.onepetro.org.

The SUT magazine *UT2*, which is a joint venture between the SUT and Dr John Howes, was published six times in 2017-18. 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 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.



Martin Sayer

Committee

Chair Martin Sayer

Secretary Elaine Azzopardi

Emily Boddy

Michaelagh Broadbent

Prof Gwyn Griffiths

Steve Hall

Dr Ralph Rayner

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
- Mike Seares
- Don Shires
- Judith Tetlow
- Graham Wilson

Our committee met three times, on 9 November 2017, 22 March 2018 and 11 July 2018. Two meetings were held on HQS *Wellington* and one at The Union Jack Club in London.

The diving industry continues to hold its own on all fronts, though there was sad news with the closure of the National Facility for Scientific Diving in Oban Scotland. One of the highlights of the year was a visit to the eminently successful Underwater Stage at Pinewood Studios on 30 November 2017, courtesy of David Shaw.

Offshore diving contractors have reviewed hyperbaric evacuation, diving safety audits and improving cooperation between operators and contractors. Media diving continues to be a very busy sector. There are concerns that an NHS survey of hyperbaric treatment chambers in the UK will lead to the loss of one or more chambers.

Scientific and archaeological diving interests have been preparing a review of their ACoP. Recreational diving organisations have been busy dealing with the onerous demands of the new British Standard 18119 concerning cylinder testing.

We welcomed Judith Tetlow on to the committee as the HSE Chief Inspector of Diving. Our Media Diving representative Mike Seares has handed over to Neil Brock – many thanks to Mike for his enthusiastic and knowledgeable support over many years.

Environmental Forces

The SUT Group on Environmental Forces (SUTGEF) held three events during the year to Sept 2018. The first event (111th Meeting), held in Imperial College, London, on 4 Oct 2017 has two presentations made by Dr. Eugeny Buldakov, University College London, on 'A note on a Practical Application of NewWave Theory to Modelling of Extreme Wave Events', and by Peter Kingsland, Longitude Engineering, on Analysis and Prediction of Monopile Oscillation during Installation. This event continues the feature of forum attended by both academia and engineers from industry.

The second event (112nd) held at City, University of London during Jan 2018, 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 multiphase modelling with an overset mesh, hydrodynamic interactions of multiple vessels in a known wave field and on experimental work. Speakers were from Plymouth University, Manchester Metropolitan and City, University of London.

The third event of the year (113rd Meeting), held at St Peter's College, Oxford during May, saw two presentations. One was made by Dr. Sébastien Bourban from HR Wallingford on 'The Earth by TELEMAC', talking about modelling of tsunami, large storms, waves, ocean currents and internal tides. The second was given by Dr Raphael Stuhlmeier from the University of Plymouth, discussing models of weakly nonlinear waves.

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 and give young graduate and under-graduate scientists and engineers a valuable introduction to the work of SUT.

During this year, our previous secretary, Mr Andy Moore, was retired. He made great contribution to the development of SUTGEF during his long term (more than 20 years) service as the secretary. His role was taken over from 112nd meeting by Tom Adcock, Associate Professor, Department of Engineering Science, University of Oxford. The new team thank Mr. Moore for his help on the transition.

Mr Andy Moore also wrote a brief on the history of SUTGEF, which is now online and can be seen at www.sut.org/specialist-interest-group/environmental-forces-sutgef.



Qingwei Ma

Committee

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Marine Renewable Energies



John Sharp

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- N Murphy
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- 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 John Griffiths, (EMEC), Michael Bullock (insurance risks), HRS Wallingford, (as part of the committee’s visit to the site) and Sian Wilson (Floating wind).

The committee has regularly reviewed recent conferences relating to marine renewable energy, both in the UK and abroad. The committee encourages 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.

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. It was also decided to include floating wind in the Committee’s area of interest.

The annual All-Energy Conference was held in Glasgow in May; SUT is the learned Society which is formally linked to 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 2018 Lennard-Senior award, initiated in 2011, was presented at the All Energy conference to Sue Barr (Chair of the Marine Energy Council and Environment and External Affairs Manager at Open-Hydro). Committee members nominated candidates for the award and then voted on those put forward.

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.

OSIG 2017 Conference

In September 2017 the OSIG committee hosted the 8th International Conference entitled 'Smarter Solutions for Future Offshore Developments' at the Royal Geographical Society in London. Over 380 delegates attended the three-day conference which covered all aspects of the offshore site investigation, geophysical survey and geotechnical survey engineering within the offshore energy sectors. This also included hosting of the conference dinner at the Natural History Museum.

Within the technical programme over 140 conference papers were presented, five key note speakers and we took great pleasure in hosting the ISSMGE 4th Bramlette McClelland Lecture as well as a special session by the Near Surface Geophysics group of the European Association of Geoscientists and Engineers.

The event was deemed a huge success by all and we look forward to the next conference in 2022.

Short courses for industry and students

In June 2018, a one-day masters course was held at Imperial College, London, for the eighth 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.

Very successful Geoforum's were hosted in Aberdeen and Bristol with a very good level of attendance. A third event was also held in Norwich with a focus on Nearshore Site Investigation.

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



Andy Barwise

Committee

Chair Andy Barwise

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 Emily Boddy
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 Miguel Pacheco-Andrade
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 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.

working hard on revised document that we hope to publish in 2019.

The final version of, 'The Top Hole Well Engineering Guidelines' is now published in was launched at the OSIG conference and 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

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'

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 work has already commenced on the planning for the 2022 conference.

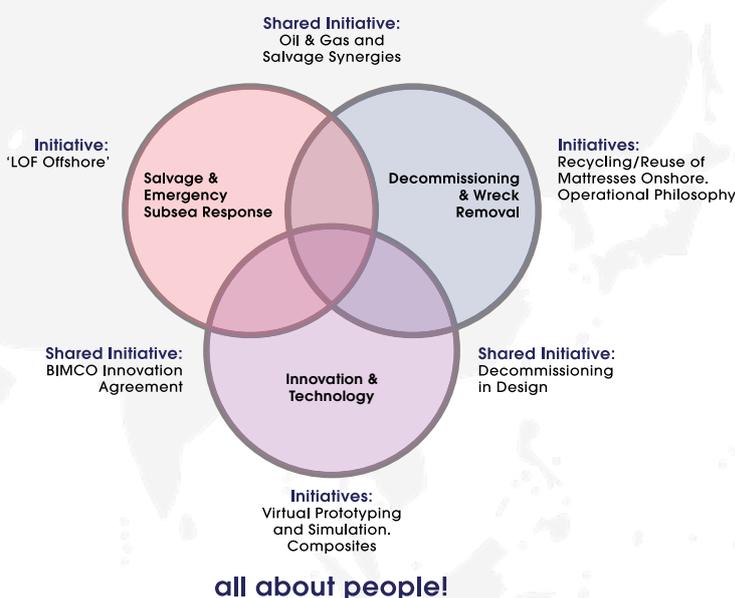
Salvage and Decommissioning

The restructuring of the Salvage & Decommissioning Committee, last year, into three sub-committees, focusing on Decommissioning and Wreck Removal (Aberdeen), Salvage & Emergency Subsea Response (London) and Innovation and Technology (St Andrews), respectively, has already begun to effect a changed dynamic, with Simulation-Led activity becoming the 'glue' between the broad range of committee members.

The Annual SUT/MASTS Decommissioning and Wreck Removal Workshop goes from strength to strength under the co-organisation of Don Orr and Karen Seath, with a great mix of participants from academia, industry and regulators. In 2017, 'Rigs to Reefs' was discussed in a lively and open forum and OSPAR decision 98/3 considered, taking a holistic, lifetime approach; the SUT thereby continuing its proud tradition of stimulating constructive and informed debate on man-made objects, materials and substances (MOMS) in the marine ecosystem.

The specific and shared initiatives of the three committees continue to be taken forward, with active engagement from members in both Norway and The Netherlands, as well as the UK and the US. Shared work streams have focused on:

- developing the Assurance Case approach for the certification of deployment and recovery systems, as a means of enabling innovative solutions for subsea decommissioning;
- building on the engagement of the marine science community to take recommendations for 'healthy and productive seas and oceans' into the design process, this will include the evaluation of the pros and cons of new materials, such as high performance plastics and composites;
- using the conduit of the salvage industry to insurers and underwriters to address risk and liability issues;
- making the work of the Salvage & Decommissioning Committee in particular, and the SUT in general, applicable to discussion at Board level for oil & gas operators.



Moya Crawford

Committee

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Chair Moya Crawford

- Vidar Åhjem
- David Blackwood
- Simon Burney
- Kevin Campbell
- Nick Donnelly
- Arnstein Eknes
- Mike Elliot
- Jim Elliott
- Simon Frisby
- Nigel James
- Kate Gormley
- Susan Gouvernec
- Jason Harris
- Steve Hall
- Mark Hoddinott
- Nigel James
- Tony Laing
- Mark Lawrence
- Marcel van der Molen
- Keith Millican
- Joel Mills

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Julia Roope
David Paterson
Bill Ritchie

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Murray Roberts
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Hugh Shaw
Mike Stockwell

Simon Swallow
Kilian Talop
Phill Thompson
Win Thornton
Tom Walters

Martin Watts
Ben Wilson
Peter Wilson
Ed Wollaston
Stewart Wordsworth

International Underwater Vehicles and Robotics Group



Neil Bose

Committee

Chair Neil Bose

Vice-Chair Mario Brito

Secretary Ron Lewis

Vice-Secretary

Richard Mills

Keith Birch

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Damien Guihen

Steve Hall

Alex Forrest

Jim Jamieson

Chris Kaminski

Gerrit Meinecke

Alex Phillips

Rolly Rogers

Blair Thorton

Anna Wählin

Bungy Williams

Jingjing Xu

The SUT/ECOR Panel on Underwater Robotics has an upcoming meeting alongside the AUV 2018 Conference in Porto, Portugal, in early November. The last meeting was spring 2017 during the Ocean Business in Southampton.

Although the Panel has not met during the reporting period of July 2017 to June 2018, there has been activity. The Panel has published a journal article entitled, "Adaptive Autonomous Underwater Vehicles: An Assessment of Their Effectiveness for Oceanographic Applications" in IEEE Transactions in Engineering Management. This article is a continuation of an effort by the panel to better understand the role and operational usage of advanced mission planning and higher autonomy in autonomous underwater vehicle technology. In the article, Brito *et al.* survey experts from across the global underwater vehicle community to determine the key factors inhibiting the uptake of advanced autonomy in AUVs.

At the upcoming meeting in Porto, the Panel will hold a workshop session to determine strategic directions for the upcoming year and review some changes to its membership. Following the Porto meeting, Ocean Business in Southampton in April is being targeted as the venue and date for the next Panel meeting.