

# **Annual Report**

## **2019-2020**



A special thank you from SUT to our  
inaugural group of  
Ocean Patrons

Mick Cook  
Tony Globe  
Gwyn Griffiths  
Ralph Rayner

The SUT Ocean Patrons scheme is for members who are able to offer an enhanced level of contribution to support our charitable objectives. Ocean Patrons receive exclusive benefits including:

- SUT Membership
- Invitation to an annual Patron’s Event
- Certification
- Prominent listing on annual report & website
- Patrons Logo for exclusive use
- ...and more,

If you’re interested in becoming an **SUT Ocean Patron** get in touch with our London office to learn more [info@sut.org](mailto:info@sut.org)

Society for Underwater Technology  
Annual Report 2019-2020



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[www.sut.org](http://www.sut.org)

# President's Foreword



President: Ralph Rayner

2020 will undoubtedly be remembered as the year of the Coronavirus pandemic. Although warnings of the potential for pandemics were being made long before COVID-19 appeared, few fully anticipated the health, economic and business impacts of such a global emergency.

Like all organisations, the SUT has had to deal with a new normal; as travel, face-to-face meetings, events and training courses have been progressively curtailed by efforts to control the transmission of the virus. It has been good to see how well the Society has adapted; quickly transitioning to the virtual world of video conferenced meetings, podcasts and webinars, allowing the Society to continue to serve its members. The Society has also further developed its growing relationship with the Marine Technology Society to include reciprocal sharing and promotion of virtual events.

COVID-19 is teaching us the importance of being adaptable in the face of unexpected challenges. It must also teach us the importance of preparing for the future. While a viral pandemic was always a possibility, the threats associated with anthropogenic climate change and the rapid degradation of the natural environment are a rapidly dawning and known reality. Left unaddressed, these threats will have far wider ranging impacts than the present pandemic. The Society must play its part in supporting a transition to a lower carbon future and the sustainable use of the ocean and its resources.

Much is already being done, including the development of training material and courses related to offshore wind and the formation of new technical committees. There is much more to do; supporting an effective transition in offshore energy production, exploring the role of the ocean in carbon capture and storage and ensuring protection of the vital ecosystem services provided by the ocean through sustainable use of ocean resources. These are some of the critical scientific, engineering and technological challenges that the SUT must help to address while continuing to deliver our existing portfolio of learned society activities.

I would encourage you all to participate in ensuring that your learned society can deliver its critical mission of sharing knowledge, skills and experience now and into the future. You all have a part to play. It may be in serving on a Society technical 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 our community and play their part in working together to determine our ocean future.

# Awards 2019-2020



Awards at the AGM December 2019: (L-R): Prof N. Penny Holliday, Dr Philomène Verlaan, Dr Phil Bryson

### New Fellows

- Kerry Campbell
- Sarah Elkhatab
- Tricia Hill
- Martin Harley
- Dr Philomène Verlaan

### President's Award

Awarded to Ian Wilson in recognition of the extensive contribution he has made to the underwater engineering industry over the past five years, culminating in the establishment of subsea engineering as a chartered area of practice within Engineers Australia's Chartered Professional Engineer (CPEng) accreditation.

### Houlder Cup for the Best Contribution to Underwater Operations

Awarded to Dr Phil Bryson, for his outstanding contribution in the field of diving medicine and in the emergency treatment of both recreational and commercial divers.

Philip has contributed significantly to education and training in diving medicine and to the development of standards for fitness to dive. He continues to sit on the Diving Medical Advisory Committee, the European Diving Technology Committee, and the committee of the European Underwater and Baromedical Society.

He has published extensively on subjects related to diving medicine in specialist academic journals as well as books on responding to underwater accidents.

### SUT Oceanography Award

Awarded to Prof N. Penny Holliday for her outstanding contribution to the field of oceanography. Professor Holliday is not only a world class research scientist with 54 peer-reviewed papers, she is noted within the community as a strong advocate for encouraging women to thrive in science, technology, engineering and mathematics disciplines and is active in outreach and encouraging the next generation.



# Council's Summary of Activity 2019-2020

## Membership

Overall membership of SUT still shows a gradual decline in line with the experience of similar Learned Societies as our core industry membership cohort continues to contract in response to changing market and staffing needs. We have seen increases in membership coming from sectors such as offshore wind, defence, marine robotics and sensors and found that despite the coronavirus crisis that we still saw a steady trickle of new individual members joining throughout the peak months of lockdown. We thank everyone who has renewed their membership, the new members, and the efforts of all who have worked so hard to keep SUT going in this most unusual of years.

The Business Development Group met regularly throughout the year to work with SUT staff and Officers of Council to work on growing the Society. One of the most successful initiatives agreed by the BD group was to establish the weekly podcasts (hosted at <https://sut.buzzsprout.com>) that have turned out to be extremely popular with our members, at the time of writing the podcast has been downloaded over 6000 times plus streamed content. Other initiatives included fortnightly webinars, online training webinars during the summer months, and a much expanded SUT Media YouTube Channel that includes a 'gadgets and widgets' section and the archive of webinars. We're also introducing a Member's Forum for discussion and sharing of ideas.

We launched our Patrons scheme during 2019-20 and saw the first group of individuals join, contributing enhanced payments to SUT that enabled us to continue our public outreach and education activities. We also received a generous donation from past-president Professor Gwyn Griffiths that will be used to support the creation of a new award for technologists in the field of Marine Robotics.

Corporate Membership remains at a similar level to previous years, with some changes as companies merge or leave the sector, on the positive side we welcomed our first large offshore wind sector member Ørsted, and saw the return of some of the academic institutions and SMEs who had left in recent years. The continued efforts by the Society to attract new sectors will likely take a little while longer to bear the fruit that we hope for, but we are seeing new individuals joining from well-known companies and hope that these will be followed in due course by corporate memberships as well.

## 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 2020 amounted to £268,076 compared with an amount of £310,758 at the end of the previous year, allowing for gains on investments.

## Educational Support Fund

A report for the year ending 30 June 2020 from the Educational Support Fund Management is included in this Annual Report. There has been a restatement of the comparatives following a review of the value of the fund which concluded that the only funds remaining were from transfers out of the general fund which meant that the Educational Support Fund was no-longer restricted. It was reclassified as designated as at 30 June 2018 and transferred back into General Funds.

## Membership Summary

Corporate Members 147  
Individual Membership 1666

Category	2020	2019
Hon. Fellows	15	17
Fellows	106	105
Full members	679	724
Students	122	120
Corporate individuals	744	801
Total	1666	1767

Table 1

## Financial Summary Unrestricted Fund (£)

Category	2020	2019
Income	391,023	317,127
Expenditure	440,651	402,768
Surplus/(deficit)	(49,628)	(85,641)
Transfers to restricted fund	-	-
Gain/(loss) on investments	6,946	17,014
Retained surplus/(deficit)	(42,682)	(68,627)

Table 2

# Chair's Report

COVID-19 has driven a very different year for the Society than we all expected. However, before I talk about how this has affected SUT, I would like to remember John Bevan who passed away in February this year. John had been a member of the SUT since 1969 serving for many years as chair of the Diving and Manned Submersibles committee, where he made a major contribution to diving safety. John also served as Honorary Secretary and Member of Council and was a recipient of the prestigious Houlder Cup for services to diving in 2002. The full text of John's obituary can read on the [SUT website](#).

Another high-profile member who died this year was Sir Anthony Laughton FRS, who served as SUT President 1996-7. Sir Anthony was one of the world's foremost post-war oceanographers and led the prestigious Institute of Oceanographic Sciences for many years. SUT can count itself fortunate to have had the support of people of the calibre of John and Tony, who directly contributed to our global role and success.

Prior to the impacts of COVID-19 the Society had been on target to break even this year. This would have been an important milestone and while COVID-19 has significantly impacted the Society's finances, we have, through strong financial management, avoided a significant loss for the year. Unfortunately, this has meant losing staff in the UK and abroad. In this I would particularly like to mention Cheryl Ince for her dedicated service to the SUT over 16 years. With the ongoing restrictions on gatherings we have not been able to properly thank Cheryl but will do so when conditions permit.

While COVID-19 has forced almost all face-to-face events to be suspended across the SUT, the Society has responded by moving online with a number of new initiatives to keep in touch with members including regular webinars and a highly popular podcast hosted by Steve Hall our CEO. These are provided free to members and the wider public.

Recognising that a number of members were likely to be impacted by industry down turns during the year, Council agreed to offer free membership for the 2020/2021 year to any member made redundant in the year. This has been very positively received within and external to the Society.

It is usual at this point to thank the SUT staff for their support and continued hard work and, given the ongoing challenges, it is particularly important to do this year. Steve and staff in the UK, Perth and Houston have all responded to the challenges flexibly against significant pressures.

Looking forward, we have taken measures to ensure the financial stability of the society in the short-term, but we do need to find ways to better monetise our online activities with a view to replace at least in part the loss of revenue from Subsea Awareness Courses. We are also continuing looking at ways to build the Society's presence in areas such as Marine Renewables.

## Finance

The 2019/20 financial outcome is a deficit of £42,682. As previously highlighted, we had been on course to present a small profit this year. This would have been significant as we would have achieved it without the support of a significant conference for the first time since 2015.

To achieve the limited deficit figure for the year has taken a number of difficult decisions and while we were initially able to take advantage of the furlough scheme in the UK, the reality that the Society would not be in a position to run face-to-face training & events for the foreseeable future has driven the difficult decision to reduce events staff until better times return.

We have maintained our commitment to supporting undergraduate students. This year, grants totalling £10,000 were made to them and £842 of other awards were presented (see note 8 to the accounts).

There has been a decline in both individual membership and corporate memberships over the year, but not to the extent feared given the wide industry downturn, more positively we are seeing new memberships coming from areas away from oil & gas. Council continues to monitor both individual and corporate fees but at the time of writing there are no plans to increase membership cost in the coming year.



David Saul



John Bevan



# Chair's Report

## contd.

While we were able to run a number of successful Subsea Awareness Courses prior to COVID-19 impacting activities, the ongoing uncertainty means we do need to look for ways to mitigate this loss of face-to-face training revenue. One way is to develop paid-for online training and associated web events. The Houston US branch have demonstrated this is possible, and we need to build on this. To further reduce overheads, Council have also taken the decision to move out of both the London and Aberdeen offices when the current leases finish in 2021, moving to a permanent working from home model. The HQ staff are all supportive of this change. We will retain a mailing address in the City of London for Headquarters, and the custodians of HQS Wellington, site of many SUT meetings over the years, have offered the permanently-moored ship as our registered address from 1<sup>st</sup> July 2021.

### Council

With several Council members living abroad we have offered the facility to attend Council meetings remotely for a number of years. This meant that the need to move to fully online meetings this year has had limited impact to the running of Council. To ensure we are able to quickly respond to changes impacting the Society, the Executive committee has been meeting on a fortnightly basis since March.

The Business Development (BD) committee has continued to meet, but taking a much shorter-term view focused on ensuring we stayed connected and relevant to the membership. New initiatives coming from the BD committee this year include:

- Weekly podcast
- Bi-weekly webinars
- Gadgets & Widget sessions (an opportunity for member companies to present their technology via the SUT YouTube channel)
- Online course development
- A Members' Only Forum

A preliminary report on the SUT business review was presented to Council. While it was agreed to put the detailed work associated with the review on hold because of COVID-19 some recommendations - for instance moving out of HQ offices - are being implemented.

### Training

Towards the start of the year a number of successful training courses were run including a company-based course for BP staff in Baku. With the loss of face-to-face training the focus has moved to developing paid-for either fully on-line or hybrid models. In a move away from traditional training areas, the London branch has developed an offshore renewable wind course which it is hoped to present online before the end of the year. The training committee is also working to develop a common set of SUT-owned subsea awareness materials for branches to use as a building block when creating awareness courses specific to their markets. This should largely mitigate problems of sharing content we currently see between branches and provide for a more consistent 'brand' offering.

### External relationships

We have continued to develop our relationship with the Marine Technology Society (MTS) albeit at a slower pace because of the impacts of COVID-19 on people's time. In line with existing agreements, Council have set up a joint working group with MTS including our Chairman, Treasurer and Hon Secretary to explore further potential areas we can work together.

SUT agreed with MTS to jointly license the ability to offer Professional Accreditation of Chartered Marine Technologists from the Institute of Marine Engineering, Science & Technology (IMarEST). The first trial group of SUT members to participate in the pilot process should be complete by the end of the year.

### Branches

As in previous years the Society has benefited from a well-developed UK and International Branch network. As with the UK, Houston and Perth have both made difficult decisions to cut back activities but are now taking tentative steps to restart courses and other activities. In the UK, the South West England group continues to develop strongly as part of the London and South Branch, while abroad we have seen expressions of interest for setting up branches in Baku and the Southern Med based in Cyprus.

### Steve Hall moving on

As you will be aware from his regular newsletter our CEO Steve Hall resigned in September to take a position as CEO of the Pembrokeshire Coastal Forum in South Wales. While this news technically came in after the cut-off for this report, it did not seem right to wait a year to thank him for all his hard work over the last four years. While we are very sad to see Steve move on, this is, as he says, an opportunity that may only come once in a lifetime. Steve took over at a difficult time with the Society still working to adjust to the loss of training income following the oil price drop in 2014. From day one Steve has worked hard to build the Society's work in ocean science, renewables and defence putting us in a much better position to manage the difficulties of 2020. During the various lockdowns Steve has worked tirelessly to facilitate online committee meetings, record podcasts and webinars from his house in Wales. Looking forward Steve intends to stay as an active Member & Fellow of SUT, and David Kirkley has asked if Steve will succeed him as Chair of the International Committee in 2021 so it will not be goodbye.

## The SUT & Social Media in Numbers



**12 Branches**  
across **11 countries**



**YouTube**  
**56 Videos**  
**165 Subscribers**  
**23,439 Video Views**



**Members are from**  
**35 different countries**



**Twitter**  
**1772 Followers**



**Instagram**  
**230 Followers**



**LinkedIn**  
**3471 Group Members**



**Facebook**  
**1266 Followers**



**Podcast**  
**36 Episodes**  
**6401 Downloads**  
(since April 2020)

### Corporate Members

**147**

### Individuals

**1666**

**15 Hon. Fellows**

**106 Fellows**

**679 Full members**

**122 Students**

**744 Corporate Individuals**



## Officers and Council 2019-2020

### President

*Prof Ralph Rayner*

### Chair

*David Saul*

### Immediate Past President

*Dr David Kirkley*

### Honorary Secretary

*David Brookes*

### Honorary Treasurer

*Mick Cook*

### Secretary to Council/CEO

*Steve Hall*

### Members

*Andy Barwise*

*Richard Binks*

*Andrew Connelly*

*Chris Curran*

*Ray Farrier*

*Terry Griffiths*

*Martin Harley*

*Rex Hubbard*

*Sue John*

*Steve Johnson*

*Iain Knight*

*Frank Lim*

*Richard Luff*

*Bob MacDonald*

*Zenon*

*Medina-Cetina*

*Julie Morgan*

## SUT Staff

*(as at 30 June 2020)*

### London Office

2 John Street, London  
WC1N 2ES  
t +44 (0) 20 3405 9035  
e info@sut.org

### Chief Executive

*Steve Hall*

### Membership & Finance Officer

*Jane Hinton*

### Publications Officer

*Emily Boddy*

### Journal Officer

*Elaine Azzopardi*

### Administrative Secretary

*Cheryl Ince (until September 2020)*

### Events Manager

*Jacqui Adams*

### Administration & Events Assistant

*Lisa Clubb (until October 2020)*

### Aberdeen Office

Enterprise Centre, Exploration Drive  
Bridge of Don  
Aberdeen AB23 8GX UK  
t +44 (0) 1224 823 637  
e events@sut.org

### Houston Office

e communications@southouston.com

### Perth Office

Office Unit 28, 17 Prowse Street  
West Perth  
Western Australia 6005  
t +61 (0) 8 9481 0999  
e perth@sut.org

### Communications Coordinator

*Araceli Lopez*

### Events Coordinator

*Patsy Rhymes*

### Perth Branch Manager

*Jennifer Bennett (until June 2020)*

### Finance/Membership Administrator

*Fiona Allan*

### Events & Marketing Coordinator

*Patricia Slapp*

# Aberdeen Branch

[www.sut.org/branch/aberdeen](http://www.sut.org/branch/aberdeen)



Like all branches, we reached the end of the financial year in the most difficult of times. A year ago there were clear indications the industry was climbing out of the oil price downturn that had started as long ago as October 2014 but then the imposition of COVID-19 restrictions prevented the public assemblies on which much of our mission depends.

My predecessor as Aberdeen branch chair, Daniele Petrone, relinquished the chair in December 2019 having steered the Aberdeen section through one of its more difficult times and I owe him thanks.

My gratitude also extends to Jacqui Adams the SUT Events Manager who has coordinated SUT events not only in Aberdeen but across the UK very effectively, the Aberdeen committee would be lost without her.

I would need to take this opportunity to say a huge "Thank You" to our Aberdeen SUT Branch Sponsors, KD Marine, OneSubsea and BHGE. Our branch sponsors make possible a great many of the activities we support and without them our range of events would be greatly reduced.

### 2019-2020 Branch Activities

If the oil and gas activity remained fragile in 2019, it was in an even more parlous state after March 2020 as lockdown restrictions meant the cancellation and postponement of almost all our activities. Those events we were able to mount were:

- Two Subsea Awareness Courses; November 2019 and March 2020, demonstrating that companies still see value in training their people. The feedback received from the delegates was excellent and we had intended to run two more courses in 2020 before lockdown intervened.
- The Schools Christmas Lecture at the end of November 2019 saw over 800 pupils attend lectures on marine life, the underwater environment, diver and diverless technology. Now in its 10th year the lectures have proven one of our most popular events and is one of the larger demonstrations of the society's charitable obligations.
- Our AGM black-tie dinner in December 2019 at the Marcliffe Hotel suffered low numbers; an indication of the still low levels of confidence in the offshore sector.
- The Business Breakfast and Networking morning also at the Marcliffe in January 2020 saw three excellent presentations on the market situation, forecasts of energy demand and subsea opportunities in the wider blue economy.
- In October 2019, in conjunction with The Hydrographic Society of Scotland and the International Marine Contractors Association, we delivered 'The Subsea Digital Toolbox' one-day seminar, covering robotics, communications, integrity management and tried to discern future trends. For the first time we live-streamed the proceedings and though virtual attendees were low in number, we intend to build on the experience.
- We managed to deliver only five evening meetings on Gadgets & Widgets, Salvage and UXO, Energy Harvesting, Seabed Site Investigation and technologies for the Low Carbon Future, before the lockdown intervened putting an end to the rest of the season's events and courses.



**Martin Harley**

### Committee

Chair Martin Harley  
Vice-Chair Patrick Duggan  
Treasurer  
Gordon Drummond

Jacqui Adams  
Keith Anderson  
Paul Benstead  
Peter Blake  
Andrew Connelly  
Gordon Drummond  
Katherine Ferguson  
Dr Ibiye Iyalla  
Campbell Elder  
Tony Laing  
Andy MacNamara  
Jim Mann  
Katrina McWilliam  
Prof. Ekaterina Pavlovskaja  
Daniele Petrone  
Killian Palop  
David Warren  
Graham Whitehead  
Jamie Wilson



# Aberdeen Branch

*contd.*

## Aberdeen Committee

For the first time in several years we held elections for places on the Aberdeen Committee. We have voting and non-voting (co-opted) seats and we submitted a third of our voting seats to vote by the membership. I would like to welcome new committee members Graham Whitehead and David Warren to the committee who joined as a result. We will continue elections each year, thus having a mechanism for gradual turnover of the committee personnel. We also welcomed Co-Opted members Katherine Ferguson of Rever and Jamie Wilson of Oceaneering and finally I would also like to express my personal thanks to Patrick Duggan of Apache who has stepped up to the role of Vice Chair.

Not only are a huge thanks due to the individuals that make up our committee but also their parent companies for allowing their participation. It's not lost on us that the burden of SUT business is a few hours a month away from their day-jobs; it's time that we fully appreciate, and we could not do our business without that assistance.

## 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 include site visits, technical seminars and social events.

## 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. Our presenters, busy oil and gas individuals who give their time freely, deserve a special mention for maintaining the high profile and reputation this course enjoys.

As mentioned earlier we saw increasing uptake in the course this past year, before COVID-19 restrictions. As soon as possible we intend to return to our educational objectives, which will include re-activating one or two of our short 1- and 2-day courses.

Given that as I write this, there is no end in sight to the government-imposed restrictions on travel and distancing, it is impossible for us to predict when some kind of normality will return. What I can say, however, is that we will be ready to resume where we left off as one of the most energetic branches of the SUT. We have the educational, networking and charitable events and two committees full of ideas and energy.

# Australia Perth/Melbourne Branch

[www.sut.org/branch/perth](http://www.sut.org/branch/perth)



SUT Perth had a productive eight months to February 2020 before COVID-19 measures stopped remaining events in Q1 & Q2 of 2020. Office staff made the transition to working from home in March at reduced hours and casual staff were stood-down, while local industry and members navigated the same changes. The events calendar from March 2020 onwards was cancelled or deferred to the second half of the year, while a limited program of online presentations was assembled. The financial year concluded with the departure of the Perth Branch Manager Jennifer Bennett through redundancy, an unfortunate change that was needed to better position the local branch to navigate the uncertain period ahead.

With the impacts of COVID-19 on broader industry leading to a general downturn, in addition to restrictions on the delivery of in-person courses and events, the SUT Perth branch staff, committee and volunteers ended the financial year with a plan to slowly transition back to a full events calendar through 2020/21 as circumstances permit.



**Rex Hubbard**

## 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 2019 and 2020 committee groups, and in particular we wish to express our thanks to retiring committee members (noted with an \*) who gave very generously their time, knowledge and support.

We give special thanks to Sarah Elkhatib (2017 - 2019 Treasurer) for all of her efforts and a very warm and official welcome to Hema Wadhwa (2020 Treasurer).

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 our overall vision.

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

- **Advertising:** Steve Duffield, Rex Hubbard, Patricia Slapp
- **Annual Dinner:** Mark Casey, Nick McNaughton, Kairullah Sastradinata, Pieter Swart, Patricia Slapp
- **AOG 2020:** Pawan Gupta, Rex Hubbard, Terry Griffiths, Eric Jas, Jatin Lodhia, Ali Mazaheri, Julie Morgan, Jaepeel Oh, Chris Saunders, Liz Tellier, **Hema Wadhwa**, Barry Walsh, Si Huia Yeaw, Jennifer Bennett
- **AUT 2019 Conference:** Shuhong Chai, Steve Duffield, Ian Hobbs, Pat Fournier, Nick Lake, Jennifer Bennett, Graeme Moya, Brendan Reid, Anuag Saxena, Chris Saunders, Peter Wademan, Phil Wells and **Stuart Higgins**
- **Courses:** Allan Devlin, Nick McNaughton, Matt Moore, Bukkie Orugun, Khairullah Sastradinata, Ian Wilson, **James Shorthouse**, Jennifer Bennett
- **Engagement:** Allan Devlin, Steve Duffield, **Leanne Geneve**, Hema Wadhwa, Jennifer Bennett
- **Evening Technical Meeting/AGM:** Ben Stangoni, Paul Farquharson, Brett Phillips, Pieter Swart, Si Huai Yeaw, Hema Wadhwa, Jennifer Bennett, Patricia Slapp
- **Finance:** Fiona Allan, Hema Wadhwa, **Rex Hubbard**, Jennifer Bennett, Mark Casey and Nick McNaughton

## Committee

*Chair* Rex Hubbard  
*Vice Chair* Mark Casey  
*Secretary* Nick McNaughton  
*Treasurer* Hema Wadhwa

*Allen Devlin (new in 2020)*  
*Ben Stangoni*  
*Brett Phillips (new in 2020)*  
*Brian Wardlaw\**  
*Bukkie Orugun*  
*James Shorthouse (new in 2020)*  
*Julie Morgan\**  
*Leanne Geneve*  
*Matthew Moore*  
*Paul Farquharson*  
*Pawan Gupta\**  
*Phil Griffin (new in 2020)*  
*Pieter Swart (new in 2020)*  
*Sarah Elkhatib\**  
*Steve Duffield (new in 2020)*  
*Stuart Higgins*  
*Terry Griffiths\**



# Australia Branch

contd.

- **Golf Day:** Allan Devlin, Brett Phillips, Ben Stangoni, Si Huai Yeaw, Hema Wadhwa, Patricia Slapp
- **Membership:** Fiona Allan, Steve Duffield, Phil Griffin, Helen Anderson
- **Mentoring:** Matthew Moore, Mark Casey, Leanne Geneve, Phil Griffin, Ai-Kim Wong, Jennifer Bennett
- **OSIG Perth:** See later in the report for full 2019/2020 summary
- **Branch Support (SUT KL/Singapore/Melbourne):** Brett Phillips, James Shorthouse, Ai-Kim Wong, Si Huai Yeaw. Includes liaison with Ajan Das (KL), Anthony Gleeson (Singapore) ; Frank Lim (China) & Roger Tan (Melbourne)
- **Phoenix:** See later in the report for full 2019/2020 summary
- **Scholarships:** Fiona Allan, Stuart Higgins, Phil Griffin, Nick McNaughton, Matthew Moore, Julie Morgan, Liam Salter, Hema Wadhwa, Shannon Dee, Alana Pols, Jessica Kolbusz, Irina Sankoff
- **Subsea Controls Down Under 2020 Conference:** Patricia Slapp, Jennifer Bennett, Mark Casey, Ned Chapman, Stuart Higgins, Ross Hendricks, Julien Levadoux, Harry Mackay, Norman O'Rourke, Harvey Smith, Derek Thomson, Paul Upjohn, Minh Vo
- **Subsea Engineering Competency Framework:** Mark Casey, Jennifer Bennett, Rex Hubbard, Chris Merrick, Matthew Moore, Norman O'Rourke, Ian Wilson
- **YES!:** See later in the report for full 2019/2020 summary

## SUT Perth Branch Events

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

Our AGM was held this year at the Parmelia Hilton. The Chairperson, Treasurer and Secretary's Reports were presented and the new 2020 Committee announced, along with a ballot to elect some committee member nominations from the floor. Sincere thanks were given to the Members, Sponsors, Presenters, Office Bearers, Committee, Sub-Committees and SUT Staff during the year.

Our 2019 Annual Dinner was two weeks later, proving yet again to be a very popular event with 233 guests in attendance, with MC from local radio personality Dean Clairs. There were spot prizes for one person on every table, including door prizes from Keiko Uno and Institchu. Annual Dinner sponsors were thanked: INTECSEA, Worley, Wood, Subsea Engineering Associates and Xodus Group.



# Australia Branch

contd.

## Conferences

The following conferences were run:

- **Autonomous Underwater Technology Conference, 23rd October 2019**

The AHS/SUT Autonomous Underwater Technology (AUT) Conference celebrated its eleventh occurrence. The conference has brought to the industry actionable information on the advances in AU technology and applications along with gaining an insight to where the technology is developing. Technological advancements have translated to increases in AUT utilisation, reliability and function across the oil and gas, hydrographic, renewable energy, environmental, research and defence industries, to name a few.



The Australasian region has experienced a significant increase in underwater oil and gas infrastructure associated with LNG field development. This increase in subsea infrastructure, coupled with autonomous technology becoming more mainstream, has created downstream applications in addition to the more traditional upstream applications; such as exploration surveying and export pipeline route development. These include environmental monitoring, pipeline and infrastructure inspections and data harvesting. The Navy are also actively investigating the implementation of AUT across their current operations.

This year the AHS/SUT conference organising committee aimed to demonstrate these new applications and different technologies along with supporting the ongoing experiences of the traditional acquisition of underwater data. After 10 prior events, this conference continues to be one of the most important gold standard networking opportunities in this field, allowing contact between pipeline engineers, subsea asset managers, geophysicists, environmental scientists, hydrographic surveyors, defence organisations, oil & gas field development specialists, government bodies, equipment manufacturers, academic & research bodies, oceanographers, survey companies and port & security operators. A full post-event report can be found by [clicking here](#).

A huge thanks again to the Conference Committee (as noted in the first pages of this report) and the sponsors: Major Sponsors: Fugro Survey Pty Ltd and Woodside Energy Pty Ltd, along with Subsea Technology & Rentals, Western Advance, Unique Group, Seafloor and Seismic Asia Pacific Pty Ltd for making the conference possible.

- **AOG (Australian Oil & Gas) Conference and Exhibition, 11th – 13th March 2020**

Diversified continued the partnership with SUT, Subsea Energy Australia (SEA) and Subsea UK, and to offer the free to attend format for the AOG Conference in 2020. While a full conference program was delivered, attendance was somewhat impacted by rising concerns about COVID-19 as the event occurred only a week before many businesses switched to working remotely.





# Australia Branch

*contd.*

## Courses:

The following training courses were run in the 2019/20 year:

- Subsea Productions Systems, 21st August 2019
- Materials & Corrosion, 28-29th August 2019

A Flexible Risers and Flowlines course and the Subsea Awareness Course were planned for May and June respectively, however both were postponed due to COVID-19.



## Evening Technical Meetings

The following evening technical meetings were held in Perth:

- Innovations in IMR, 14th August 2019  
Presentations by: Greg Smith, C-Kore; Stefan Haliczenko, Fugro; Stephan Freychet, Halfwave; Brett Phillips, Oceaneering.  
Sponsored by: C-Kore and Fugro

# Australia Branch

*contd.*

- Offshore Renewable Energy: Facing the challenges, 12th September 2019  
Presentations by: Tim Sawyer, Flotation Energy; Britta Bienen, UWA; Chris Meecham, Fugro; Laith Tapper, NGI.  
Sponsored by: Norwegian Geotechnical Institute
- Technology and Strategy Enablers for Subsea Oil and Gas Tie-backs, 9th October 2019  
Presentations by: Mariano Iannuzzi, Curtin University Corrosion Centre; Christopher Merrick, DORIS; Luca Letizia, OneSubsea; Tim Nallipogu, Woodside.  
Sponsored by: OneSubsea, Doris and Woodside
- Decommissioning – Planning for the end, 12th February 2020  
Presentations by: Matt Allen, SubCon; Mark Bourne/Stephen D'Sourza, NOPSEMA; Matthijs Groenewegen, Allseas.  
Sponsored by: Subcon and Woodside

An additional two ETMs were planned for April and June but were cancelled due to COVID-19 restrictions. Full post-event reports on all Evening Technical Meetings can be found by [clicking here](#).

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



## Golf Day – 20th September 2019

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

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

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





# Australia Branch

*contd.*

## SUT Perth Sub-Committee Updates

### Branch Administration

The 2019-2020 year ended with the departure of the Perth Branch Manager Jennifer Bennett through redundancy, an unfortunate change that was needed to better position the local branch to navigate the uncertain period ahead. Fiona and Trish remain a capable administration and events team, with additional support from casual employees, volunteers to address many of the tasks previously addressed by Jennifer.

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

### Branch Support

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

- Guidance given to SUT Singapore on the typical sponsorship packages offered by SUT Perth for their events
- Support to SUT Melbourne in their aim to organize a networking event via LinkedIn

### Engagement

The strategy for Engagement for 2019 / 2020 was -

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

We have been somewhat successful with increasing Operator attendance with both Woodside and Shell presenting this past year at Technical Meetings. There was good attendance at SUT events and courses and we exceeded our sponsorship targets at the end of 2019. The COVID pandemic impacted our engagement from mid March 2020. Thereafter, the Evening Technical Meetings, the launch of the Subsea Engineering Competency Framework and Mentoring events were cancelled. However, the ETM committee managed to arrange a series of virtual Lunchtime Technical Meetings which were offered to members free of charge.



### Finance

SUT Perth Branch ran at a deficit in the 2019/2020 financial year of approximately \$AUD 32,000.

This was mainly due to:

- loss of income through cancellation of events due to COVID-19
- deferral of Subsea Awareness Course
- expenses and settlement payments associated with the Branch Manager redundancy in June 2019

# Australia Branch

*contd.*

Offsetting this was stronger than expected performance in the second half of 2019, with increased attendance at events and continued generous sponsorship from many of our members and clients

An audited Income and Expenditure Statement for the year will be forwarded to Council following the finalization of the audit in September 2020.

### Marketing

Our marketing strategy has remained focused on digital engagement with our members, particularly during 2020. Weekly digital communications have been sent to members encouraging engagement in our online events during the challenges of not being able to run face-to-face events. There has also been a significant focus from the committee to assist with engagement on social platforms Twitter and LinkedIn.

### Membership (Perth and Melbourne) as at 30 June 2020:

- Students: 62 (82)
- Individual: 144 (146)
- Corporate: 52 (52)
- Including -Academic / Not for Profit: 4 (4)
- - Global: 15 (14) (with a presence in Perth)

Membership has remained stable, with a modest reduction in the number of student members. There has been no increase in Membership pricing.

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



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

In 2020, SUT teamed up with the Society of Petroleum Engineers WA (SPE), Subsea Energy Australia (SEA), Petroleum Exploration Society of Australia (PESA), Petroleum Club of WA (PCWA), Australian Society of Exploration Geophysicists (ASEG), and Women in Subsea Engineering (WISE), with the co-operation of Engineers Australia (EA) to offer the industry a mentoring program offering the opportunity to enhance the development of individuals both professionally and personally, as well as the opportunity to broaden their professional network.

The programme in its third year in 2020 has been coordinated by SUT, along with a steering committee made up of delegates from the participating societies. Prior to the launch, the decision was made to suspend the mentoring program due to the risks associated with COVID19. Applications for the program are planned to re-open in September, and the 2020 mentoring program will run on a revised schedule concluding in June 2021, with the launch event to be held in late October 2020.

The program will be a mix of in person events and online education to assist both mentors and mentees on their journey.





# Australia Branch

contd.

## OSIG Perth Overview – including OSIGp events

OSIGp stands for “Offshore Site Investigation and Geotechnics Perth”, which is a special-interest group of the SUT with interests covering the area of the so-called 4G’s: Geology, Geophysics, Geomatics and Geotechnical Engineering.

Established in 2012, the OSIGp Committee currently comprises 15 members from various backgrounds (primarily operators, consultants and academics).

As part of its remit, the committee actively pursues and organises technical and also non-technical activities that are of interest to its network including training courses, seminars, and themed movie nights to name a few. Some of the committee’s events in 2019-2020 include:

- “Movie Night / HMAS Sydney” showing various snippets of 4G-themed projects, including behind-the-scenes footages of high school students participating in a remote operating vehicles (ROVs) building competition;
- “Renewables Evening GeoForum” featuring selected topics on offshore renewables;
- “Lunch Technical Meeting” on the topic of offshore monopile foundations.

The committee has also contributed in the past, and will continue to do so to the following industry-relevant conferences/courses:

- 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.

The Committee is also actively collaborating with other OSIG groups based in the UK and Houston, for example in establishing technical guidance notes on various 4G-related topics.

Thanks goes to all OSIGp committee members past and present (listed below) for their time, enthusiasm and hard work.

- |  |  |   |
|--|--|---|
| • Bryan Bergkamp                       | • Kevin Day                            | • Reza Gholilou                           |
| • Cathal Colreavy                      | • Laith Tapper ( <i>Chair</i> )        | • Steve Duffield                          |
| • Chris Meecham                        | • Matthew Kuo                          | • Wensong Zhang ( <i>Joined in 2019</i> ) |
| • Damon Sunderland                     | • Michael Cocjin ( <i>Vice Chair</i> ) | • Shioahuey Chow                          |
| • Emma Eltringham ( <i>Secretary</i> ) | • Myra Keep ( <i>Joined in 2019</i> )  | • ( <i>Joined and left in 2019</i> )      |
| • Haiwen Li ( <i>Joined in 2019</i> )  | • Raffaele Ragni                       | • Joe Tom ( <i>Left in 2019</i> )         |



# Australia Branch

contd.

## Phoenix Overview

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

Phoenix has been very successful with its objectives over the past few years

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

The Phoenix SIG has served its purpose in keeping members engaged and involved in the underwater community through SUT, with most members having returned to full-time work as of October 2019. It was proposed that the Phoenix SIG be suspended by keeping the constitution in place but leaving the committee positions vacant, so that it may be re-formed and re-activated if needed at some future point. The SUT Perth Committee voted to adopt the proposal in October 2019, effectively suspending the operations of the Phoenix SIG.

## Scholarship Awards

SUT Perth branch has continued with our policy of supporting students studying relevant courses in Australia and displaying a strong interest in continuing into a career or further studies in underwater disciplines. We have now awarded 64 scholarships since 2007.

This year we awarded two scholarships and are pleased at the continued and positive uptake of scholarships by the student fraternity. One scholarship recipients were from the Curtin University this year and the other from Australian Maritime College in Tasmania. The most worthy recipient was awarded the “Chris Lawlor” Scholarship. Congratulations Shannon Dee and Alana Pols.

Sponsorship has also been secured from local member company Aurora, to recognize the applicant with the greatest potential to contribute to the development of marine renewable energy, to be considered for award for the first time late in 2020.

## Subsea Engineering Competency Framework Project

The sub-committee has completed the framework for subsea engineering competency and agreed a MOU with Engineers Australia (EA) for award of Chartered Professional Engineer in Subsea Engineering [CPEng(Subsea)] and registration on the National Engineering Register (NER) as a Subsea Engineer. The assessment process is led by EA and supported by SUT-nominated SME’s who are CPEng accredited.





# Australia Branch

contd.

An information session about the program was planned for March 2020, however was delayed by the impact of COVID-19 so information was distributed to members via email and website published material. A number of applications have been received and successfully accredited since January 2020, and the information session has been rescheduled to run in July 2020.

Further information is available by [clicking here](#).

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

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

The Purpose of SUT YES! Is to:

- 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 fields

The new 2020 YES! committee began the year with a challenge, having only one in-person committee meeting before COVID-19 prompted a transition to virtual meetings. The committee responded well, working together effectively to deliver a virtual event during the lockdown period, and to improve YES!'s virtual presence on social media. One valuable initiative to come from this has been interviews with experienced engineers, which will be posted as articles and/or videos on our social media channels (with the first to come very soon). YES! primarily uses events (virtual and in-person) to engage with members; students and non members. During the year there were three successful events (listed below). Full post-event reports on all events can be found by [clicking here](#). In addition to events, YES! Committee members have promoted SUT membership and events at universities, supported SUT Mentoring and have a large involvement in the SUT Scholarship program.

YES! currently has one annual sponsor, Woodside (since 2014). Additionally, TechnipFMC and Santos kindly sponsored individual events. Many thanks to these generous sponsors.

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

### 2019 Committee:

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

### 2020 Committee:

- |   |   |  |
|---|---|--|
| • Nathan Atkinson                           | • Liang Ming Lee ( <i>2020 Programme &amp; Marketing Lead</i> ) | • Jessica Kolbusz ( <i>UWA Student Liaison Officer</i> )   |
| • Sotiri Battalis                           | • Brendon McAlpine  | • Alana Pols ( <i>AMC Student Liaison Officer</i> )        |
| • Jia Xin (Flora) Chiew                     | • Nitin Repalle   | • Irina Sankoff ( <i>Murdoch Student Liaison Officer</i> ) |
| • Elena Gerginov ( <i>2020 Vice Chair</i> ) | • Thomas Russell  |  |
| • Joseph Graville                           | • Liam Salter ( <i>2020 Chair</i> )                             |  |
| • Sam Hyes                                  | • Shannon Dee ( <i>Curtin Student Liaison Officer</i> )         |  |
| • Tom Hitchmough ( <i>2020 Secretary</i> )  |   |  |

# Australia Branch

contd.

The YES! Sub-Committee is excited about the year ahead, and is looking forward to returning to a 'normal' program of events over the coming year.


## YES! events in 2019/2020:

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

- 2019 Quiz Night – 3 October 2019
- 2019 Technical Evening – Age of Disruption: Innovation, Adaptation and Artificial Intelligence – 28 November 2019
- 2020 Virtual Event – Lunch n Learn: Better Decisions: The impact of Automated Engineering – 4 June 2020

## Year Ahead

Perth branch will be doing a couple of new things in the 2020 – 2021 period including:

	<p>We expect to expand the terms of our agreement between Society for Underwater Technology - Perth Branch Inc. and Engineers Australia. Under the current agreement Perth Branch members assist EA to assess the competence of engineers for the EA credential of 'Chartered Professional Engineer', in the EA area of practice Subsea Engineering, "CPEng(Subsea)".</p> <p>We anticipate that the terms of the agreement will soon be expanded to include assessment of Engineering Technologists, CEngT(Subsea), and Engineering Associates, CEngA(Subsea). We would like to thank Perth Branch member Ian Wilson for all of his excellent work in growing the terms of this arrangement.</p>
	<p>Following SUT's participation in a joint mentoring program in 2018 and 2019 (administered for the first two years by SPE-WA Section), SUT Perth Branch will administer the program (and its associated events) in 2020. This joint mentoring program continues to grow in popularity, growing from the three founding bodies (SPE, SEA and SUT) to six organisations with the addition of PESA, PCWA and ASEG.</p>

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

Based on the depressed business conditions seen in 2019-2020 due to COVID, the budget for 2020/21 has been approved by the Finance Committee with both reduced revenues (due to COVID) and reduced staff overhead costs (due to redundancy) resulting in an overall AUD\$34k target surplus. The budget assumes that the current COVID situation in Perth continues for the next year (i.e. live events can be run, albeit with reduced capacity due to social distancing requirements). The Perth Branch committee are cautiously optimistic about a general market improvement over the year ahead.





# Brazil Branch

[www.sut.org/branch/brazil](http://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 planned two events for the first semester of 2020 that were postponed due to the COVID-19 pandemic. Brazil-China Conference on Offshore Engineering, and the 2nd Workshop on Offshore Wind and Renewable Ocean Energy

## Seminar: Ocean Renewable Energy

22 October 2019, COPPE – Federal University of Rio de Janeiro. Audience: 70 persons. Presenter: Dr. Milad Shadman

## Strategy for the Post-Pandemic Activities

Due to the successful experience with online seminars and courses, the SUT- Rio Branch is planning to use the same technology to promote most of its activities in 2021.

## Some general consideration for the SUT-Rio Branch

### How is your Branch looking at the future direction of underwater technology?

Underwater technology continues to have great importance in the developments of deepwater offshore fields for oil & gas in Brazil. A technical discussion about the subsea factory / subsea-to-shore concept needs to be addressed in view of the new technologies associated with subsea separators, and "All-Electric" and "Hybrid Electric-Hydraulic" subsea devices.

### Are you impacted by the journey towards energy transition that many companies are making?

The Branch is already promoting activities in Ocean Renewable Energy. The transition from oil & gas to renewables can have a substantial contribution from offshore wind power, including the offshore platforms' electrification.

### How will the work of the committee progress and benefit the SUT/ the Industry?

The main subjects treated in the SUT-Rio Branch are of direct interest in the industry, as commented in the previous questions. The committee should propose a common agenda to be explored by the branches, with the possibility of joint events, including two or three branches per subject.

### How will the committee contribute to the diverse international membership of the SUT?

In Brazil's particular case, the inclusion of new members depends on the access they could have to the international activities. The new normal post-pandemic, with spread online activities, can help in this sense.

With the UN Decade of Ocean Science for Sustainable Development due to start in 2021, does your committee/SIG have thoughts on how the SUT can play a role in encouraging innovative, high-technology sustainable development in areas such as offshore energy, aquaculture, seabed resources, robotics, education & training, etc.?

One topic of general interest is the Ocean Observing Systems. It can be treated under different perspectives for the ocean economic sectors to provide more information to foster the Blue Economy. The technology associated with autonomous underwater vehicles and the integration of different observing systems should be considered for offshore energy and aquaculture.

# China Branch

[www.sut.org/branch/china](http://www.sut.org/branch/china)



Frank Lim

## Committee

Chair Frank LIM  
Chair Emeritus DUAN Menglan  
Sponsor ZHANG Laibin  
Technical Advisors  
ZHOU Shouwei  
ZENG Hengyi  
CUI Weicheng  
Secretary SUN Ting  
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)

This year the SUT China branch has undergone a time full of opportunities and challenges.

We organised the 8<sup>th</sup> International SUT (China) Technical Conference, in conjunction with Zhejiang Ocean University, successfully in Zhoushan, Zhejiang Province, during 19-21 September 2019.

The conference was very well attended with the first day devoted to keynote presentations by eminent speakers from both the industry and academia. SUT CEO Steve Hall delivered his welcome address to the conference in a pre-recorded video from his home in Wales, a precursor to the way things would become in the future.



We held an AGM on 20 September during the conference. The committee decided to maintain the current membership, with the exception of the replacement of LIU Jun Peng by SUN Ting as secretary and addition of CUI Weicheng as a technical advisor.

The committee also agreed that the next annual conference would be held in Changsha, Hunan province, to be hosted by the Changsha Research Institute of Mining and Metallurgy.

Due to the COVID-19 pandemic, our work has made very little progress in 2020. The 9<sup>th</sup> SUT (China) Technical Conference has been delayed to 6-8 January 2021 to enable more participants to attend in person. Online live broadcast will be adopted to facilitate those, especially foreign guests, who are not able to travel.

The registration of SUT China branch as a legal charitable entity has encountered some difficulties. The Chinese authority has put the application on hold pending review.







# Kuala Lumpur Branch

[www.sut.org/branch/malaysia-kuala-lumpur](http://www.sut.org/branch/malaysia-kuala-lumpur)



**Ajan Das**

## Committee

*Chair* TBA

*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 KL Branch has been in hiatus during this reporting year, as the Chair needed to stand down due to work commitments, and as arrangements were being made to find a successor the coronavirus pandemic led to a suspension of Branch activities. We thank former Chair Ajan Das for his service and look forward to resuming Branch activities with a refreshed programme of event when it is safe to do so.

# London & South of England Branch

[www.sut.org/branch/london](http://www.sut.org/branch/london)



**Richard Binks**

The endless support of the Executive is the fuel that runs the branch and as always, their efforts are valued and appreciated. We are also indebted to the regular help from all committee members, the branch is built on collective volunteer effort. We are always endeavouring to reduce admin and with this in mind, we decided to jointly absorb the Honorary Secretary role and at the same time we have simplified minute taking and reporting. As ever we would not be able to work without the admin and organisation support of Jacqui Adams, SUT Events Manager.

## Executive

Richard Binks	Chairman
Keith Broughton	Deputy Chairman
Iain Knight	Hon Treasurer
Claire Cardy	Hon Secretary SUT+
Jacqui Adams	SUT Events Manager
Phil Johnston	Hon Secretary SW Chapter

## Summary

We are looking forward to a return to better more social times without presence of COVID-19! In the meantime, we are learning about webinars, video conferencing, podcasts and online training. These new skills will help us with our core aim of disseminating knowledge of subsea technology. We will benefit from a future mix of both traditional and online events.

At the moment our evening and lunchtime events have merged into mid-day online presentations. Numbers attending these are steadily growing, the last two events 90 and 140 people registered. Generally, about a half of these "turn up" but still more than double the average attendees at in-person evening events. So clearly a growing demand. The online events are run live, with Q&A sessions at the end. These events have been all free of charge, so it remains to be seen whether attendee numbers would fall if we were to charge a nominal amount to cover SUT chairing and administration costs. We are indebted to Steve Hall, SUT CEO for being the anchor man for these events.

When we get back to traditional events, we are still searching for a benefactor with a free lecture room in central London! However, the model of using a pub for more "social" learning events and the Institute of Physics plus corporate member venues for more earnest presentations does work. Our last evening event, way back in February, was our annual excursion to the offshore industry cluster around Woking, west of London. This was a well-attended event and shows the need of hosting events in places that are easy for interested parties to travel to.

Before COVID-19 hit, we were reviewing our social calendar. Our quiz night in November is always well attended and it would be great to duplicate this style of event in the Summer. A beer and a bap in the good company of SUT members are the key ingredients and we should not dilute these with prohibitively high event ticket costs.

Online events are now running regularly with help from SUT HQ and are usually recorded so check our website if you missed any.

## Committee

*Chair* Richard Binks

*Deputy Chair*

Keith Broughton

*Hon Treasurer* Iain Knight

*Hon Secretary*

Graham Taylor

*Hon Sec SW* Phil Johnston

*Hon Secretary SUT+*

Claire Cardy

Jacqui Adams

Alex Argyros

Chris Ashcroft

Duncan Brown

Peter Hayward

Simon Hems

Joe Hulm

Brian Jones

Mazin Eltayeb

Mark Pickering

Mark Murawiecki

George Varelis

Nigel Underwood



# London & South of England Branch

## contd.

### Evening Events

- Sep 2019: Philomena Verlaan: Deep-Sea Mining in the Clarion-Clipperton Zone: Update
- Nov 2019: Annual Pub Quiz :Ye Olde Watling, London
- Dec 2020: John Englander: Rising Seas – The Case for Moving to Higher Ground
- Feb 2020: Peritus International/Petrofac: Pipeline Stories: A Pipeline to India and the Curious Case of the Shifting Sands

### Lunch and Learns

- Oct 2019: NATO Submarine Rescue System: Has anyone seen Nemo?
- Nov 2019: Red Penguin: Subsea Power Cables – Lessons Learned
- Feb 2020: Westwood Energy: Global Offshore Prospects 2020-25

### SUT+

SUT+ aims have been to widen awareness of the branch and to encourage membership within younger age groups. This started in November, with SUT (along with other marine societies) giving a presentation following the Marine Autonomous Technology Showcase, targeting students and young professionals. An SUT+ Intro to the Society online meeting was held in early July and this was followed up with an “Ambassador” recruitment online session later in the month. Ambassadors within companies are important as they can act as SUT catalysts, posting meeting notices and encouraging event attendance etc.

Links between the London and South Coast SUT+ members have also been developed encouraging cross fertilisation of ideas between member groups.

Until COVID-19 runs its course, future online webinars are planned with hopefully a return to an agenda of social interaction in the new year.

### City Subsea Awareness Course (SAC) and Unexploded Ordnance courses

COVID-19 has meant a change in strategy to run courses online rather than in person. The modular City SAC is ready to go. Finding suitable presentation material and ensuring that the intellectual property of the course is owned by SUT, has entailed a great deal of effort from course presenter Mark Murawiecki. Switching the course to online requires shorter presentations so the original modular plan can be used. Getting the right software package for booking, presenting and interacting with the online course is *the* pending issue before an inaugural course can be run.

The one-day course is adaptable to different target markets such as for Investors in subsea technology. Longer 4-5 day SACs are still planned with the potential of sharing content from the Aberdeen branch.

The unexploded ordnance course is work in progress, like the City SAC it is targeted at the City Insurance market.

### Conclusion

The big event this year has been dealing with the social distancing consequences of COVID-19. There is a valued and essential social networking side of SUT that we all miss, so we look forward to running in-person events again. COVID-19 has had benefits in that we have accelerated our learning on hosting online courses, podcasts and webinars.

Engaging with existing, and recruiting new Corporate members is key to our future. COVID-19 has brought tough times for many of our corporate and individual members. We really appreciate that nearly all are continuing with their membership subscriptions and still enjoying the great value of the SUT.

Try and miss it, but if you do catch Covid, I wish you a speedy recovery.

# Middle East Branch

## www.sut.org/branch/middle-east



Leading up to the seismic events of 2020 we ran a seminar in Sep 2019 on “Opportunities and Challenges to Improve the Economics of Cable, Flexible and Umbilical Lay” hosted by Khalifa University. Then focusing on the specific challenges in the Middle East we used ADIPEC in November 2019 to run Subsea X-Talks showcasing technology from UTEC, Prysmian, Drass, Vallourec, NOV and Ashtead. ADNOC and ADIPEC organisers DMG have created a specific focus on the Offshore, Marine and Commercial Dive Zone in Hall 15 which gave SUT the opportunity to run a stand and host the X-Talks event. Our next and as it turned out last event in March 2020 on Trenching & Excavation was the most successful so far in terms of attendance and subject matter interest, and then lockdown.

We’ve always known the Middle East to be a challenging domain for SUT type activity, not least of which being some incorrect perspectives on the region as a subsea domain and highly transient nature of the expatriate engineering community. We lose the summer every year as many find a way to escape the heat, and there are two major religious holidays either side. The pandemic has not helped. Never-the-less, the momentum has been building and we now have over a thousand subsea professionals with an interest in what we are doing.

The committee is drawn from some of the major players in the industry who have all been affected by the pandemic. About a third of the committee either changed jobs or moved out of the region which highlights the regional challenges we face. We continue to be well represented by TechnipFMC, Boskalis, DCN BV, Ashtead, Mermaid, Lloyd Warwick, NPCC, Kenz-Figee, Connector Subsea, Dolphin Energy, Flowline Specialists, Pelagian, Prysmian, Baker Hughes, McDermott, Gulf Marine, Oceaneering, Unique, Subsea 7, Pipeshield and the Tekmar Group. These companies represent a broad spectrum across the supply chain who are all focused on Aramco, ADNOC and QG (QatarGas) offshore activity in Saudi, UAE and Qatar.

We had a full program of events mapped out for 2020 under our traditional “face-to-face” model, so lost a fantastic opportunity to run an EPRS (Emergency Pipeline Repair Systems) event hosted by ADNOC in April 2020. We had all hoped things would return to normal way before ADIPEC but the world’s largest oil and gas show will be run virtually this year. Like all SUT committees with limited resources, we have now accepted that we need to evolve to stay relevant and have turned our minds toward an online program of events. These are designed to be short and sharp lunch-time events focused on the dynamics of the local market and subsea challenges in the region.

We have signed a collaborative agreement with Oceanology International to support their first event in September 2021 and with that hope to expand our horizons from offshore energy toward aquaculture, seabed resources, robotics and potentially defense.

Given the COVID-19 hiatus, it is fair to say we continue to be at an early stage of our development, but we mark our second anniversary with a potential virtual presence at ADIPEC in 2020. Our decision to delay establishment of a local entity proved to be the right one given the interruption of our program and ability to generate revenue. We have however developed the outline for a Middle East “Subsea Awareness Course” which is on hold until the effects of the double whammy of COVID-19 and low oil prices plays its way through the local industry.



Adrian Phillips

### Committee

*Chair* Adrian Phillips

### Abu Dhabi

Tarek Al Marzouqi  
Andrej Blazevic  
John Charalambides  
Spencer Clark  
Russell Harper  
Bill Hickie  
Brad Kirkland  
Kevin Murray  
Richard Richards  
Mark Thomer  
Jules Verlinden

### Dubai

Milind Abhyankar  
Ed Bevan  
Graeme Chalmers  
Farnaz Ghasemi  
Steve Goddard  
Lesya Kramarenko  
(*admin*)  
Bedros Mardikian  
Anand Menon  
Bob Morgan  
Ashish Rawal  
Iain Selkirk  
Nawin Singh





# North of England Branch

[www.sut.org/branch/north-of-england](http://www.sut.org/branch/north-of-england)



**Martin Bingham**

## Committee

*Vice Chair & Acting Chair*  
Martin Bingham

*Honorary Secretary*

Dr Simon Benson

*Treasurer* Dr Ian Frazer

Jacqui Adams

Andrew Burton

Marguerite Forde

John Greenwood

Andy Roberts

Michael van Zwanenberg

Denis Vasiljev

Vahid Walker

Elizabeth Waterman

Michael Williams

Nick Wright

The North of England Branch meets on a bi-monthly basis and has organised a student event and three evening technical sessions over the period. Unfortunately, two planned technical sessions have been postponed. The technical sessions have been well-supported with average attendance being 40 knowledgeable students and subsea practitioners. The sessions have been engaging with audience leading to enthusiastic discussion during the question and answer section of the meetings – 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. Being based within the University, we continue to be well-supported with student attendance.

## Activities

### Evening Meetings

Mindful of supporting attendance by students, our usual September meeting was arranged within the university term time, so in **October 2019**, we were delighted to host an evening meeting with a series of presentations focusing on 'Plastics in the Ocean'. The presentations provided a great insight covering:

- Polymers for Subsea Operations - Donald Faulds, shared over 20 years' experience to cover the use of polymers subsea, along with advantages and limitations of the various types used. He talked through the various advantages that polymers can have over steel when used subsea, including reduction in weight, less susceptible to corrosion, self-lubricating, easier to recycle and require less CO<sub>2</sub> to make.
- The Capture of Ocean Plastic - Lizzie Fowler, a marine engineering student who had just entered her fourth year at Newcastle university shared with us the findings of her dissertation project which focused on systems to remove surface plastic from the ocean. Lizzie investigated floating boom systems, drone-based and vessel-based plastic removal techniques. She shared with us the design of a floating boom system and tested it in a large water tank at the university, including videos and modifications to improve plastic capture.
- Modelling Ocean Plastic Distribution - Alethea Mountford, a PhD student at Newcastle University shared her findings of computational models to analyze the distribution of plastic in the global ocean. Using a modelling framework called NEMO, Alethea can determine likely hotspots for where different plastics could accumulate. Current research focuses on surface plastic, but Alethea explained how her models detail the dispersion of three main plastics groups, positively buoyant, neutrally buoyant and negatively buoyant.

A detailed meeting report for the evening can be found on the SUT website, courtesy Matthew Dent from PDL Solutions (Europe) Ltd.

In **November 2019**, we were pleased to welcome



# North of England Branch

*contd.*

Jonathan Lindsay from The European Marine Energy Centre (EMEC), based in Orkney to deliver a presentation on "A path to a globally successful marine energy industry". EMEC is a marine renewable energy test centre and research organisation, and Jonathan was able to share with us his breath of knowledge about their projects to date. The presentation covered:

- some of the historic testing at EMEC who have a full scale, grid-connected, marine energy converter test site so have witnessed numerous prototype testing for wave and tidal energy within the Orkney cluster,
- some of the current projects on trial incorporating global collaboration, and
- a look to the future where the UK are well placed for renewable tidal and wave resources. Including a look at the wider wave & tidal industry and opportunities for the supply chain that may come about.

In **January 2020**, the branch were delighted to welcome Bas Hesselink from AkzoNobel, who gave an insight into the "High performance coatings for corrosion protection in subsea underwater and offshore environments". During the presentation Bas gave:

- An insight into the site in Felling in the North East, where paint is produced and where their state-of-the-art global R&D facility is located after a recent €12.6 million investment. Protective coatings are Bas' specialism and have been used across various industries from upstream and downstream Oil and Gas applications, nuclear and coal power plants and high-volume infrastructure. Including two local projects the Sage and Millennium bridge on the Newcastle/Gateshead quayside.
- A brief history of the development of coatings from 15,000 BC when blood, egg & animal fat were used to buildings and assets. The reduced need for solvents in 1970s due to liquid epoxy and in more recent times the development of coatings has been H&S driven both in terms of harmful ingredients and the safety of personnel on an asset to ensure they can safely evacuate from the asset in the event of a fire or cryogenic spill.
- An explanation of the importance of understanding the lifecycle of the asset, from the temperature and humidity of where it will be manufactured, how it is transported and the environment of the end application.
- Further detail on the challenges of developing coatings for the underwater and offshore environments. Coatings designed for use with subsea production facilities in Oil & Gas installations, face the additional challenge of operating in a high temperature and pressure environment, with water depths of up to 3000m and temperatures of 90°C and beyond. Where the specifications often include contradictions such as protection during thermal loading but requiring flexibility from the coating during transportation and the requirement to be as lightweight as possible to keep the total asset weight down.





# North of England Branch

## contd.

A detailed meeting report for the evening can be found on the SUT website, courtesy Elizabeth Waterman from PDL Solutions (Europe) Ltd.

In **March 2020**, our planned inaugural meeting in collaboration with North East Coast Joint Branch of IMarEST and RINA entitled "Engineering on, in and under the sea" was unfortunately postponed due to the Coronavirus outbreak. We hope to move this event online later in the year.

### SUT+

Our SUT+ committee continues to go from strength to strength, under the watchful eyes of Eugenie Warden and Denis Vasiljev. The SUT+ team have had another successful year, hosting their fifth 'Engineering under the Waves' on 18<sup>th</sup> October 2019. A collaboration with NUSTEM (Northumbria University STEM team) and held at the Northumbria University, the event aims to inspire 16-18 yr olds from the local area into considering options for carers in the subsea sector, giving them the opportunity to get face-to-face and talk with real engineers alongside taking part in practical sessions run by the events sponsors. The tours of the university laboratories highlighted the academic opportunities within the subsea sector and proved highly popular with the attending students. Thank you to the six local sponsoring companies without whom this event would not be viable (SMD, PDL, OSBIT, BEL Valves, TechnipFMC, Baker Hughes (a GE Company) and Royal IHC).



In addition, the group organised a site visit to SMD as part of their knowledge transfer series.

### Finances

The North of England Branch finances are reported through the Aberdeen Branch P&L account. Our activities have been funded by our established network of local branch sponsors who we would like to extend our gratitude; 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

It is our intention to increase our collaboration with local groups such as IEEE, IMarEST and RINA. This will aid knowledge transfer across the region, improve the breadth and depth of information we are able to share with our members and attract a wider audience to engage with our activities.

As we look to the future, we see

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

In these challenging times for the industry and for those who work within it, the branch will exist to enthuse and support those already in the industry, inspire others to join it and spread the word to a younger generation about the opportunities of the sector.

# Norway Branch

## [www.sut.org/branch/norway](http://www.sut.org/branch/norway)



The Norwegian Branch of SUT has had another quiet but special year. After the cancellation of the Spring SAC course, we decided to make a special effort to market our Spring 2020 course. We found that we needed to get out to a larger part of the industry. As a marketing tool, we made a new brochure that was distributed at seminars and by e-mail to companies in the oil and gas industry. The course we marketed was our new 2-day compressed SAC course with an excellent program. We have reduced the participation fee, with the reduced duration of the course. In late February, it looked promising with 7-8 people interested in attending.

On March 12, Norway closed down because of the COVID-19 pandemic. With all the restrictions to fight the pandemic, we had to cancel the course again.

The schedule of this course would have involved two full days at the premises of TechnipFMC and Schlumberger (earlier Framo Engineering). The two-day course is probably something other branches of SUT might find interesting and positive for a compressed SAC course.

During 2020, the SUT Norway branch has not had any committee meetings with physical attendance. Matters discussed had been by phone only.

In Norway, we clearly see that most companies in the Oil & Gas industry are turning their focus to the "green" trend. There is a strong political will to support wind, hydropower and other renewable sectors. Companies in the oil and gas sector are therefore careful in the use of resources directed to oil & gas (SAC Courses).

The Norwegian committee has always been focused on the SAC course. The members are all in full-time positions at companies who are struggling to survive in this COVID-19 scenario. The contribution by the committee to the International SUT work is therefore limited.

In earlier years, the SAC courses were extremely popular, and we intensified the marketing of the May 2020 course. We were optimistic that we could get the course up and running again in May 2020. Now it looks like we first have to wait out the COVID-19 outcome and consider our way ahead in 2021

### Norway

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



Nils Vågen

### Committee

*Chair* Nils Vågen

*Manager* Tom Erikson

O Hagesaether

GA Johansen

RD Skre

I Westervik





# Singapore Branch

[www.sut.org/branch/singapore](http://www.sut.org/branch/singapore)



**Anthony Gleeson**

## Committee

*Chair* Anthony Gleeson

*Vice Chair*

Colin Campbell

*Treasurer* Che Keong Lee

*Secretary* Jose Manuel Puig

Andrew Blears

Andy Ching

Derek Chow

James Christie

Mark Colbridge

Derek Donaldson

Xiang Liu

Wendy Lee

Philip Thomas

The Singapore Branch had planned to continue its outreach mission this year with Networking Events, Technical Evenings, a Singapore-based Subsea Awareness Workshop with the IEEE and its support of Oceans 2020, but like all of us we had to curtail these activities due to the restrictions caused by the COVID-19 pandemic and the down turn in our relevant industries.

The SUT team here in Singapore is relatively small and made up of 100% volunteers, our team has been impacted by members having to deal with redundancy, while the rest of us have had to adapt to new methods of working and greatly increase workloads. This coupled with the Singapore Government imposing strict measures to help prevent the spread of COVID-19 in the community. At the end of March 2020 all public gatherings were banned, with hotels, meeting spaces and bars being forced to close their doors. This has not only stopped our Technical and Networking events but also our support of external conferences in exhibitions

We held a Technical Evening on the 26th September with speakers from the National University of Singapore and IMarEST. Prof Wai Lam LOH (NUS) gave an excellent presentation on Naturally Induced Slug Loading in Offshore Pipelines and Andrew Wong discussed the IMarEST and their ongoing activities Asia and future collaboration with the SUT in Singapore. We were unable to secure sponsorship due to one of the partners pulling out at the last minute, so we self-sponsored this event to allow the meeting to continue and promote the SUT in Singapore.

On November 21st we held our End of Year Social Night that was kindly sponsored by Atlas Professionals and Norbit. This was primarily a networking event but also designed to promote awareness of the SUT in Singapore. We did not have any technical presentations, but the chairman gave a small talk on funding and planned events for 2020. The night was hugely successful, and this combined with the tireless follow up work of the committee we managed to secure S\$8,000 towards the 2020 budget. Despite the lack of events this year all our sponsors have allowed to keep the money they have pledged for future activities

As stated at the top of the report we are a small committee with limited resources, to this end we reached out to the UK head office requesting additional financial support, but in SUT's present financial situation it was not possible for SUT to allocate the funding that we had requested. This lack of financial support from SUT head office was going to affect the Singapore branches level of activity and this combined with the ongoing impact of the COVID-19 pandemic will seriously influence the future of the Society in Singapore. We plan to hold a resumption of business meeting in November and at this time we will look into the resources available and ability for the team in Singapore in committing the required time and energy to the year ahead.



**L-R: SUT Committee Members Singapore Mark Colbridge, Phillip Thomas & Anthony Gleeson at the End of Year Social**

# US Branch

[www.sut.org/branch/houston](http://www.sut.org/branch/houston)



SUT-US is comprised by an Executive Committee and six technical committees; Offshore Site Investigation and Geotechnics (OSIG), Subsea Engineering and Operations (SEO), Group on Environmental Forces (GEFUS), Robotics & Automation (R&A), and Offshore Renewables (OR); by three non-technical committees, the Young Professionals, Education, and Women in Industry 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 Prairie View A&M. All are active groups that meet regularly and which have active memberships.

## Notable efforts:

- Reed Exhibitions and SUT-US leadership meet to engage in the organization and coordination of Oceanology International San Diego 2021.
- SUT-US joins as a supporting organization of the Project Optimization Rural Coastal High Needs Middle School Students Achievement Via Marine Robotics Competitions (Project ORCA), committing to 50% matching funds if Project ORCA sets funds to support scholarships in underwater technology up to \$18,000 USD annually over the next 5 years.
- Pacific Ocean Energy Trust - an Oregon 501(c)3 nonprofit corporation and the Society for Underwater Technology - US (SUT-US) established a collaboration to aid in the establishment of the U.S Department of Energy's "Testing Expertise and Access for Marine Energy Research (TEAMER) Program". The three-year program supports testing and research for marine energy technologies and will provide access to test facilities and technical expertise to assist with numerical modeling and data collection in operational and extreme conditions.
- SUT-US approved an Intellectual Property Agreement to protect the SUT-US and its presenters from any IP related issues. This agreement should enable the SUT-US to distribute recorded presentation material upon presenters/companies consent.
- The SUT-US Marine Autonomous Systems Technical Conference & Exhibition led by Christopher Curran, Justin Manley, Fathi Ghorbel, Zenon Medina-Cetina and Jan Van Smirren is confirmed for March 31, 2021
- SUT-US a supporting and sponsoring organization for the International Symposium on Frontiers in Offshore Geotechnics 2020 (ISFOG) to take place on November 8-11, 2021 in Austin, Texas.
- SUT-US organizes is hosting an online engineering competition for 1) college students competing with other college student, graduate, and undergraduate students, and 2) young professionals with 0 to 3 years of professional experience. Currently looking for sponsors.
- Due to the COVID-19 global pandemic, SUT-US transitioned all in-person events to virtual events.

SUT-US' staff is comprised by Mrs. Patsy Rhymes who assumes the coordination of in-person events; Ms. Araceli Lopez who is responsible for the coordination of online events and overall communications for the Branch.



**Zenon Medina-Cetina**

## Committee

*Hon Chair & President*

Zenon Medina-Cetina

*Hon Treasurer & Training*

*Officer* Don Schlater

*Hon Secretary*

Jan Van Smirren

*Education Committee Chair*

John Allen

*Subsea Engineering &*

*Operations Chair*

Maria Ancheril

*School Touring Chair*

Andrew Haigh

*Robotics & Automation Chair*

Fathi Ghorbel

*Young Professionals Chair*

Patricia Varela

## Members at Large

Logan Brant

Christopher Curran

Earl Doyle

(OSIG Secretary)

Colin Johnston

Kim Faulk

Matt Kirk

Roger Osborne

(Special Events)

Mark Siegmund

Aimee Thurlow



# US Branch

*contd.*

Ms. Monica Lopez-Aguilera left SUT-US in December 2019 to take another job. Ms. Audrey Guzman joined the team as a Supporting Editor and as an accounting assistant.

Below is a summary of the key activities held at the SUT-US branch for the period of 1 July 2019 – 30 June 2020.

## Networking Meetings

### Attendance

1. August 1, 2019 **9**
2. September 12, 2019 **15**
3. October 3, 2019 **3**
4. Champagne & Conversation Series October 24, 2019 **23**
5. November 7, 2019 **12**
6. Scholarship Awards Ceremony November 15, 2020 **44**
7. Champagne & Conversation Series January 23, 2020 **39**
8. March 5, 2020 **7** (Online)
9. May 7, 2020 **18** (Online)
10. Networking Event & Bingo Night June 4, 2020 **21** (Online)
11. Champagne & Conversation Series January 23, 2020 **18** (Online)

**Average attendance per networking event: 19**

Other learning programs organized by Executive Committee included the workshop “Key Elements of Subsea Tiebacks,” presented at the Subsea Tiebacks Forum & Exhibition on February 18-21, 2020. This year the SUT-US received a complimentary booth space for marketing support of the workshop. Presenters included: Christopher Curran, Senior Consultant, CJC Enterprises, LLC, William Taggart, Senior Engineering Advisor, Murphy Exploration & Production, Charles Horn, Senior Advisor, NanoRidge Materials, Inc, and Karl Schnakenburg, Global Engineering Advisor, BHP.

## AGM

SUT US’ Annual General Meeting was held on December 6th, 2019. During this meeting, the executive committee introduced the new elected board members:

- John Allen (Re-elected)
- Kim Faulk (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 2019/2020-year have included learning luncheons, courses, and school touring programs.

## Learning Luncheons & Webinars

- **July 24, 2019 – General Overview of Renewable Floating Wind Turbine Foundations**  
Dr. Charles Aubeny, Texas A&M University  
Webinar attendees: 30
- **October 10, 2019 - Cost Savings via Advance Geotechnical Design**  
Scott Whyte, Fugro UK & Joe Hilton, Sea and Land Project Engineering  
Webinar attendees: 13

# US Branch

*contd.*

- **November 11, 2019 - Introduction to Integrated Marine Site Characterization**  
Early Doyle, Shell Retired  
Webinar attendees: 33
- **December 5, 2019 - Simultaneous AUV Survey and Seabed Sampling Operations to Optimize Marine Mineral Exploration Programs**  
Dan McConnell, Fugro  
Webinar attendees: 8
- **May 21, 2020 - Increasing Role of Field and Laboratory Seismic Measurements in Geotechnical Engineering**  
Dr. Kenneth Stokoe, University of Texas at Austin  
Webinars attendees: 32

## Workshops & Courses

- **December 9-11, 2019 - Introduction to Integrated Marine Site Characterization**  
Seminar attendees: 21 Webinar attendees: 4
- **Geotechnical Developments in US Offshore Wind**  
Workshop was comprised of the following sessions:
  - Research and Industry Interaction in Offshore Wind – Webinar attendees: 113
  - Offshore Wind Facilities Design and Installation – Webinar attendees: 126
  - New developments in Site Characterization for Offshore Wind – Webinar attendees: 132
  - US Offshore Wind Market Update – Webinar attendees: 109

OSIG’s School Touring Sub-committee is one of the most active groups in the SUT- US branch. Supporting OSIG members include Kim Faulk, Alan Foley, Francisco Hernandez, Jim Collins, Andy Hill, Dan Lanier, Amanda Evans, Dan McConnell, Logan Brant and Shawn Williamson. Thanks to the dedication and passion of its active volunteers, it was possible to reach 1,099 students from K-12th in the 2019/2020 year.

- **July 3, 2019 – Summer Camp – Roving Robots**  
Houston Museum of Natural Science  
Students reached: 24
- **July 17, 2019 – Summer Camp – Roving Robots**  
Houston Museum of Natural Science  
Students reached: 22
- **July 24, 2019 – Summer Camp – Roving Robots**  
Houston Museum of Natural Science  
Students reached: 26
- **August 7, 2019 – Summer Camp – Roving Robots**  
Houston Museum of Natural Science  
Students reached: 23
- **August 14, 2019 – Summer Camp – Roving Robots**  
Houston Museum of Natural Science  
Students reached: 24
- **November 8, 2019 – 6th Grade Geology Rocks**  
Hamilton Middle School  
Students reached: 450



# US Branch

*contd.*

- **March 6, 2020 – 6th Are We There Yet?**  
Salyards Middle School  
Students reached: 530

The primary goal for the next months is to improve the volunteer pool and build an alternate channel to deliver the content to k-12 students given the COVID-19 crisis. Continue to develop links with other groups to move the program out of the Houston area, and support collaboration with other groups of SUT-US.

## SEO committee

SEO is comprised of 10 members. SEO's activities for the 2019/ 2020 year have included learning luncheons, webinars and its flagship subsea course:

### Learning Luncheons, Webinars & Courses

- **August 27, 2019 – Drilling 101**  
15 Learners
- **September 9-12, 2019 – Subsea Awareness Course**  
7 Learners
- **January 23, 2020 – Offshore Workforce Engagement Through Modern Technology & Techniques**  
Indresh Chauhan, Marybeth Burgess, Vijayanandraj VR, Vineeth Veetil, Sify eLearning  
Seminar attendees: 23 Webinar attendees: 2
- **January 30, 2020 - Westwood Global Energy 2020 Offshore Rig Market Outlook**  
Terry Childs, Westwood Global Energy Group  
Seminar attendees: 19 Webinar attendees: 1
- **February 18, 2020 – Key Elements of Subsea Tiebacks**  
68 Learners
- **March 26, 2020 - Subsea Water Treatment and Injection Design, Qualification and Operations**  
Cobie W. Loper, National Oilwell Varco (NOV)  
Seminar attendees: 6 Webinar attendees: 8
- **June 19-July 10, 2020 - Subsea Awareness Course**  
10 Learners

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. Due to the COVID-19 pandemic, this year the course was held remotely comprised of three sessions over a three-week period (one session per week). These sessions were recorded, and the SEO is looking to work on the best version of this material to monetize from it. The leading hosting companies for the course have been TechnipFMC, BP America, Shell, Evoleap, Chevron, Genesis Oil & Gas, and Oceaneering.

The SEO in representation of SUT-US was a supporting organization for the International Society of Automation (ISA) Process Industry Conference held on November 4-6, 2019. This was the first time SUT-US has representation in this conference.

### Upcoming events for SEO 2020:

- **October 1-22, 2020 – Subsea Awareness Oline Course**
- **October 7, 2020 – Webinar: Testing Expertise and Access for Marine Energy Research Program**
- **November 5, 2020 –Flow Assurance Fundamentals and Emerging Technologies Online Course**
- **January 2021 – Drilling 101 Course**

# US Branch

*contd.*

## Group on Environmental Forces (GEFUS)

19 volunteers form part of the Group on Environmental Forces (GEFUS).

GEFUS continues to host the 1000-Year Scholarship program organized jointly with Loop Current & Eddies Alliance. The 1000-Year Scholarship rewards outstanding students studying curricula and performing research in the fields of meteorology or physical oceanography and who are pursuing a career in Metocean. The funds are obtained by donations from the metocean community and marine technology industry. In 2019, 2 scholarships worth \$1,500 were awarded.

### Upcoming events GEFUS 2021:

- Marine Autonomous Systems Technical Conference & Exhibition. Call for abstracts is open.

## Robotics and Automation Committee

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

The committee finalized and approved their constitution in June 2020, and Faisal Yousef from Canrig is Chair Elect. Upcoming learning programs will focus on panel discussions on policy issues, standards, or key challenges in robotics and automation and strategies to address them.

## Offshore Renewables Committee

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

### Learning Luncheons, Webinars & Courses

- **September 5, 2019 – A Review on Offshore Renewable Development**  
Webinar attendees: 8

## Education Committee

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

The 2019 scholarship recipients were recognized during the Scholarship Awards Ceremony on November 15, 2019. The selected students by the Scholarships Subcommittee were:

- Moslem Moradi, Geotechnical Engineering, Texas A&M University
- Tejas Pawar, Subsea & Petroleum Engineering, University of Houston
- Guillermo Duran, Geotechnical Engineering, Texas A&M University
- Issam Ben Moallem, Mechanical Engineering, Rice University
- Alyssa Rene Coy, Mechanical Engineering, University of Houston
- Abhishek Sharma, Subsea Engineering, University of Houston

The Education committee has established two new student chapters in the University of Texas at Austin and Prairie View A&M University.

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



# US Branch

*contd.*

## Young Professionals Committee (SUT-YP)

### Learning Luncheons, Webinars and Networking Events:

- **July 11, 2019 – Networking Event**  
Attendees: 4
- **July 19, 2019 – BBQ Scholarship Fundraiser**  
Attendees: 18
- **February 6, 2020 – Marine Geohazards**  
Andrew Hill, Bp  
Seminar attendees: 27   Webinar attendees: 19
- **May 28, 2020 – Put Your Retirement Plan to Work**  
Suzanne Short, Edward Jones  
Webinar attendees: 4
- **June 4, 2020 – Virtual Networking Event + Bingo Night**  
Webinar attendees: 21

The SUT-YP have remained active throughout the past years supporting SUT-US sponsored events such as Oceanology International Americas, Offshore Technology Conference, networking events, and the School Touring program. In addition to organizing their own fundraising activities such as a Barbeque Scholarship Fundraiser scheduled for July 19, 2019 sponsored by Benthic, Geosyntec, and TechnipFMC.

The SUT-YP along with SEO and OSIG committees, are leading the SUT-US 2-Tier Mentoring Program for students and young professionals. An application system has been set up, and the current efforts are focused on recruiting a pool of mentors to be able to advertise the program for mentees.

## Student Chapters

SUT-US gave its student chapters their annual sponsorship checks during the Annual Scholarship Awards Ceremony on November 15, 2019. The annual contribution serves as an affirmation of SUT-US' support to the university student chapters.

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

Texas A&M University Student Chapter (SUT-TAMU) program of activities for the 2019/2020 included:

- January 16, 2020 – Underwater Robotics/Artificial Intelligence Seminar
- February 18, 2020 –SUT Young Professionals Seminar
- March 12, 2020 – Climate Change Seminar
- April 11, 2020 – ROV Competition
- TBA – SUT-TAMU Student Chapter Elections

University of Houston Student Chapter (SUT-SES) program of activities for the 2019/2020 included:

- February 24, 2020 – First General Meeting
- March 7, 2020 –Resume Critique and Networking Workshop
- TBA – Information Session (Dr. Medina-Cetina)
- March 13, 2020 – Company Tour (TechnipFMC)
- TBA – Technical Writing Contest

# US Branch

*contd.*

- TBA – Information Session (Diego Lamacchia)
- April 16, 2020 – Technical Writing Contest

Prairie View A&M Student Chapter (SUT-PVAMU) program of activities for the 2019/2020 included:

- Every Thursday - Officer Board meetings
- Every Thursday and Friday - AUV Workshop
- January 13 – March 27 - Recruitment Efforts
- TBD: Tech demos, Food sale, Flyer distribution, Guest Speakers
- February 1 – April 30 - Cybersecurity Integration
- March 19 - Officer Elections
- TBD - Additional Official Activities
- TBD - Guest Speaker Dates

Due to COVID-19 some of the student activities were suspended and others moved to online events. The student chapters continue meeting regularly and organizing activities remotely.





# West Africa Branch

[www.sut.org/branch/west-africa](http://www.sut.org/branch/west-africa)



David Agazuma

**Committee**

- Branch President*  
David R. E. Agazuma
- Chair* Prof. Francis Ifeayin Anyasi
- 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

Prof. Kingston Nyamapfene  
Prof. Peter Azikiwe Onwualu  
Prof. M.A. Akintunde  
Prof. Mark Adom-Asamoah  
Prof. Esther U Ikhuoria  
Onuoha Okechukwu  
Ogbebor Anthony Osagie  
Celestine Imhanbibi Okonokhua

Professor Francis Warings Yao Momade  
Nkiruka Helen Agazuma  
Prof Kwasi Obiri-Danso  
Prof Osagie Ighodalo  
Prof Ukwuoma Okechukwu  
Prof. Daniel Obikwelu  
Prof. Onwona-Agyeman  
Dr. Ahmed Galadima Aminu

Before we look back at the calendar of the West Africa Branch events, I would like to use this opportunity to thank all the presenters and industry partners for their time and efforts in bringing our range of events to realisation, and for those generous organisations who have supported the West Africa Branch.

We would not have been able to develop the range of activities and events without the support and commitment of the industry. The oil and gas industry is fundamental to our success in fulfilling the society's mandate.

The branch attracted new academic and student members which is very encouraging. Students of the member universities have also been encouraged to sign up for SUT individual membership in that they are the future players in the offshore technology arena

The committee remains enthusiastic, imaginative and creative, and we are strongly seeking more support and sponsorship from member organisations, industry, education and other learned societies, and we are optimistic that we will get the desired help.

The West Africa Branch's relationship with Universities continues to be strong, with plans to establish student chapters of the local branch in Covenant University, University of Ghana, Nkwame Nkrumah University of Science & Technology, and the Bells University of Science & Technology.

We have continued our collaborative engagement with the University of Nigeria to establish the Centre for Business Skills & Data Analytics, and the Centre for Ocean Technology respectively.

The branch has also undertaken an educational initiative in partnership with the Federal University of Technology Owerri and Obafemi Awolowo University with a view to establish the Pipeline Engineering Centre and the Centre for Offshore Technology.

One of the consequences of the COVID-19 pandemic is the global fall in community prices, especially oil and gas, as a result of business stoppages and lockdown across the world. In the second week of April, oil prices slumped to arguably its lowest rate in history – \$25 from \$56 in February. The repercussions of this for the political economy and national revenues for oil dependent economies such as Nigeria are enormous. With poor demand for oil, marketing of oil has largely been deferred and revenue streams have collapsed creating balance of payment challenges and deep holes in public revenues. There is increasing concern

# West Africa Branch

*contd.*

on how these countries will be able to fund their budgets and respond to the public health challenges and economic recession triggered by the pandemic.

However, the West Africa Branch did manage to field in the following evening meetings before the pandemic:

- Flow Assurance - State of the Art
- Subsea Processing
- SUT presentation and Offshore IRM

Attendance for these meetings were mostly students and University lecturers. We are always grateful to all presenters and chairpersons for their time and efforts in bringing the evening meetings to fruition.

The Branch have also partnered with universities to develop new industry relevant MSc courses. These are:

- Welding Engineering
- Process Safety & Loss prevention
- ROV, Diving & Underwater Systems Engineering
- Petroleum & Subsea Engineering
- Subsea & Pipeline Engineering
- Data Science & Business Analytics (Oil & Gas)

**Planned Activities**

- Launch student chapters of the Local Branch
- Focus on marketing to sign up new cooperate, students and academic membership of the SUT
- Open and Operate a new Port Harcourt Offices
- Establishment of Subsea Engineering Programmes in the University of Nigeria Nsukka
- Run Subsea Engineering Course in Lagos, Port Harcourt and Accra, Ghana
- Run the Subsea Systems Integrity & Reliability Engineering Course
- Annual Dinner & AGM



# Education



Sue John

**Committee**  
*Chair Sue John*

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

Face-to-face outreach and schools activities have been significantly impacted by restrictions associated with the global coronavirus pandemic, but in the period before lockdown the Society was able to take part in schools activities including presenting sessions at schools in London & Aberdeen, and supporting activities of individual members and those who engage with the European Marine Science Educator's Association and the Marine Alliance for Science & Technology, Scotland (MASTS) where our CEO serves on the advisory board.

Aberdeen Branch provided another of their popular Christmas Lectures to schools (see Aberdeen Branch report) and our USA Branch also carried out a programme of schools & university-related activities, with strong engagement from the Student Chapters at Rice, Texas A&M and Houston universities - see the US Branch report for details. Our Middle East Branch supported engagement with Al Khalifa university in Abu Dhabi and the Herriot Watt campus in Dubai.

Our input to the National Maritime Museum in Cornwall has contributed to the opening of their new display on ocean science, and we regularly provided material to support enquiries about underwater technology and careers to members of the public who contact SUT directly.

The education committee has taken on a more international perspective with members from Houston and Perth now active on the Committee, and a greater understanding that education needs to be embedded into the work of all of our Branches.

As an example of our engagement with younger students, we followed-up on 2019's Science Week with a session at a multicultural inner London school that included being able to link with pupils who were located outside of the UK, and the school welcomed our use of face-to-face and online techniques, our practical approach to risk assessment and the support material that we were able to provide the teachers.

As COVID-19 recedes we look forward to re-engaging with an enhanced programme of schools and college related activity, including joint programmes with like-minded Societies and charities.

SUT has been asked to lend support for an engineering project centred around robotic deep-sea exploration, our contribution will be to provide volunteer engineers / robotic specialists. The project is due to start in 2021 providing the funding application is successful.

# International Training



Sue John

**Committee**  
*Chair Sue John*

Tony Laing  
Paul Benstead  
Charles Reith  
Graham Whitehead  
Keith Broughton  
Rex Hubbard  
Steve Johnson  
Jacqui Adams  
Mark Murawiecki  
Richard Binks  
Iain Knight  
David Brookes

The provision of high-quality Training is key to the financial health, reputation and influence of SUT across our global network, and up to now it has been dealt with very much on a local basis by each individual Branch. In early 2020 SUT Council agreed that the training committee be re-named as the International Training Committee. Our remit now includes communicating and coordinating on training issues across our international network, sharing course materials and best practice, and in the aftermath of COVID-19 to promote online training courses that do not have the same requirement for face-to-face interaction as our traditionally, highly-regarded courses such as the Subsea Awareness Courses offered in UK, USA, Norway, West Africa and Australian Branches.

The work is ongoing so that it will probably be 2021 before we see a rollout of new online courses, but much preparatory work is taking place and there will be new courses for Offshore Wind, Marine Law, Finance & Insurers, and more.

We are working to ensure that there are no large differences in pricing or undercutting of existing SUT courses across the Branches. It is also intended that there will be a course 'archive' where branches share material. The popular field visits that we traditionally offer with our courses can not at present be carried out, but we are intending to follow the example of Perth and Houston who have delivered online courses and effectively offered 'IOUs' to attendees in lieu of site visits, with the intention to follow-up when full movement is restored.

Another aspect of training is SUT's agreement with the Institute of Marine Engineering, Science and Technology (IMarEST) to begin offering the possibility of Professional Accreditation as Chartered Marine Technologists to SUT members who have the necessary experience and qualifications. It is planned to hold a pilot scheme in the second half of 2020 with a view to introducing CMarTech on a wider basis from 2021. This is being done jointly with the Marine Technology Society, with SUT & MTS working closely with IMarEST to introduce the schemes on an agreed timetable.



# Educational Support Fund Management

The Society for Underwater Technology continues to support high quality students through our Educational Support Fund, and each summer we invite applications for scholarships which attract candidates from across the world. Sadly we are not resourced to be able to award funding to everyone who applies (over 30 this year), but we hope to be able to grow the number of awards we make in future.

This year we awarded new scholarships to a male student from Croatia who is studying engineering at Oxford University, and a female student from the UK studying marine science at the Scottish Association for Marine Science and supported our ongoing students at University of New England USA, SAMS and Plymouth. Through our partnership with the Sonardyne Foundation we continued to support two PhD students at the University of Southampton.

Students at James Cook University Australia and SAMS completed their studies with high quality degrees, and we were pleased to see a former ESF Student, Jane Collins, awarded her PhD.

Whilst students from all over the world are able to apply for the ESF scholarships, several of our Branches operate their own scholarship schemes with USA Branch raising thousands of dollars of corporate sponsorship to support scholars from Texas A&M, Rice, and Houston universities for now, with others planned for the future. Perth Branch also support scholarships, and our West Africa branch is ready to start supporting students in Nigeria and neighbouring countries. Our China Branch also hopes to support studentships in the next year or two.

## Summary of Undergraduates graduating in 2020

James Cook University, Australia

Scottish Association for Marine Science

### Summary of Undergraduates continuing in 2020-2021

Plymouth - MEng. Marine Technology

University of New England

Scottish Association for Marine Science

## Educational Support Fund *contd.*

## ESF students have studied at...

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

## ...taking courses in...

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

## 277 Students supported



## 159 Undergraduates

## 118 Postgraduates

**£500,000  
given to  
students  
since 1990**



# International



**Dr David Kirkley**

## Committee

*Chair* Dr David Kirkley  
*Secretary* Stephen Hall

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

The committee continues in its role as a Committee of Council, scrutinising and debating issues of importance to the Society as an international organisation. Since its inception, a key task has been to encourage the formation of non-UK branches wherever there are members or potential members with sufficient interest and enthusiasm to get an embryonic activity started. Most of the initial contacts and conversations are initiated by Steve Hall in his dual capacity as SUT CEO and committee secretary. During the year there have been several new initiatives though, inevitably, they have been curtailed by the covid-19 pandemic. Areas where, hopefully, progress can be made in the near future are in Ireland through contacts in the Marine Institute in Galway; Azerbaijan through attendees at the first SUT training course in Baku at the beginning of 2020; and in the Eastern Mediterranean where there is interest in both Cyprus and Egypt, though the idea of an Eastern Mediterranean conference has been postponed until 2021. An inaugural branch meeting was held in St John's Newfoundland but plans there, too, have been put on hold for the moment.

While, inevitably, the pandemic has been an obstacle to both new initiatives and to the execution of plans by existing branches, the use of electronic communications and video conferencing has shown how much can be achieved without the need to travel and congregate in one place.

Another task with which the committee is involved in, is trying to achieve a sensible balance between independent activity in branches and maintaining a common standard of professionalism and ethical behaviour across the whole of SUT, with input from Chairs of our non-UK Branches wherever possible. It is an ongoing activity that probably has no definite end-point. During the year, some progress was made in establishing a framework that takes into account the legal basis of the Society in the UK, the requirements of local jurisdictions (China is especially difficult in this respect), preferences of branch members, and local culture. It remains work in progress.

The established branches have presented their own reports elsewhere in this Annual Report, and it is gratifying to see the range of activities they have managed to carry out in difficult times. The progress of our youngest branch in the Middle East is good to see, and gives hope that we will continue to see growth in new areas of the world. Membership is still split approximately 50:50 between residents in the UK and residents elsewhere. The committee will continue to try to ensure that the interests of all members are understood and accommodated, wherever they may be.

# Policy Advisory

The SUT Policy Advisory Committee did not meet face-to-face in 2019/20, not least due to the global coronavirus pandemic, but the members remained in contact with one another and in the UK we responded whenever we were asked for input to enquiries from Parliamentary Committees, working groups and government departments.

SUT contributed to policy consultations from the Department of Business, Energy and Industrial Strategy (BEIS) on Supporting Industry on the Path to Net Zero; Carbon Capture, Usage and Storage Projects: Re-use of oil and gas assets; and Strengthening the UK's Oil & Gas Decommissioning Industry. For the Department for Environment, Food & Rural Affairs (DEFRA) we responded to calls for evidence on inshore & offshore marine planning, and the Call for Evidence on Highly Protected Marine Areas.

We also provided input to calls for evidence from the devolved Scottish, Welsh and Northern Irish governments on subjects including decommissioning, marine spatial planning, offshore renewables and environmental protection.

In many instances we cooperated with our friends at the Institute of Marine Engineering, Science and Technology to provide a joined-up consistent voice from our members and industry.

Members of the Policy Advisory Committee are currently working with the SUT Defence Special Interest Group to draft a position paper on legal and ethical aspects of the deployment and use of armed marine autonomous systems. We hope that this will be published in the coming year, helping to inform and educate policy makers about the State of the Art in underwater technology, and help steer the coming debate on the future of such systems, which will begin to proliferate during the next decade.

Finally we have provided input to UNESCO's Intergovernmental Oceanographic Commission in support of the Global Decade of Ocean Science for Sustainable Development, which commences in 2021.



**Steve Hall**

## Committee

*Chair* S Hall

DA Brookes  
Dr DW Kirkley  
K Broughton  
Dr P Verlaan  
Lt Cdr RJ Rogers  
Dr B Mackenzie (*IMarEST partner*)



# Publications



**Martin Sayer**

## Committee

Chair Martin Sayer  
Secretary Elaine Azzopardi

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

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

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

The Society for Underwater Technology continues to make the journal completely and instantly open access with no article publication charges. The journal is hosted in electronic format by Ingenta Connect ([www.ingentaconnect.com/content/sut/unwt](http://www.ingentaconnect.com/content/sut/unwt)), it is available in e-reader format ([issuu.com/sut7](http://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) and since July 2020, it is listed on the Sherpa Romeo open access journal register (<https://v2.sherpa.ac.uk/id/publication/36994>).

Between June 2019 and June 2020, the journal received 17 submissions. Two of these were rejected following peer review and three were withdrawn following recommendations for substantial revisions giving an acceptance rate of 70.6 %. The country affiliations of the senior submitting authors included China, Italy, India, the UK and Peru. The final issue of the journal in 2020 will be a special issue that will highlight some of the underwater technology research being conducted in China.

The SUT magazine *UT2*, which is a joint venture between the SUT and Dr John Howes, was published six times in 2019-20. The magazine continues to receive good feedback from the membership; *UT3* is the online version of *UT2*.

The Publications Committee is also acted 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 has now been completed, but information can still be found at: <http://www.bridges-h2020.eu/>

The Publications Committee continues to receive excellent, enthusiastic and highly organised support from the SUT. Emily Boddy continues as Publications & Communications Officer and works on all other SUT publications plus the website. Elaine Azzopardi provides editorial assistance for the Journal and Michaelagh Broadbent provides copy editing support.

# Defence

The Defence Special Interest Group [SIG] has continued to develop and is in a good position to move forward in its role as forum of excellence and 'think tank' for innovative underwater defence technologies. After some excellent work to set up the SIG, Roland Rogers has handed the chairperson position to Nick Swift. Nick has considerable experience in the defence underwater domain, having worked in the MOD, BAE Systems, Ultra Electronics and most recently headed up Sonardyne International Ltd's Defence and Maritime Security function.

At the last 'virtual committee meeting' the terms of reference were finalised, and work has begun on the first of the tasks that are planned to be delivered by the SIG. The agreed high-level terms of reference of the SIG is to monitor, report and comment on the research, development and application of advanced underwater defence-related systems, vehicles and sensors, and the legal, ethical and policy implications of their deployment and use.

Much of the focus will be on marine autonomous systems [MAS], but the scope of the SIG will include human-occupied platforms such as advanced submarine designs intended to act as 'mother ships' to autonomous systems. Seabed-deployed sensors, systems and arrays along with shore-deployed systems will also fall within the remit of the Special Interest Group.

The first task that the SIG will report on the legal aspects of UWS in defence context (Hague convention, etc) including 'weaponised underwater systems'.

Future plans for the Defence SIG include:

- Develop a web-based repository for relevant information relating to the defence underwater environment
- Maintain an online calendar of events related to the SIG
- Development and publish the first SIG paper
- Increase the membership of the Defence SIG to include more industry and end-users
- Deliver a showcase, possibly in conjunction with an industry event

It was planned that the next committee meeting would to be held at an industry conference but it is becoming evident that this will not be possible within the required timescales, so it is planned to have a virtual presentation at a virtual industry event.



**Nick Swift**

## Committee

Chair Nick Swift  
Secretary Steve Hall  
Deputy Chair  
Roland Rogers

Captain Ryan Ramsey  
Terry Sloane  
Keith Broughton  
Matthew Gleed  
Ioseba Tena  
Alan Noble  
David Maclean  
Ian Danbury



# Diving and Manned Submersibles



**Martin Sayer**

## Committee

*Acting Chair* Martin Sayer  
*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  
Don Shires  
Judith Tetlow  
Graham Wilson

The Diving and Manned Submersibles Committee has not met in the past 12 months. The lack of activity is part explained by the impact of COVID-19 on the diving industry, with some sectors ceasing most diving operations. Where diving has been considered an essential service then the implications for maintaining services while minimising the risks of disease transmission have been significant. Being predominantly a respiratory disease, some reports suggest that a proportion of divers who have contracted COVID-19 suffer decreased lung functionality. This has the obvious potential to affect the ability of some of those infected to continue occupational diving and this is an area that will be monitored by this committee of the SUT.

The other explanation for the lack of activity of the committee was the serious illness and eventual sad passing of its long-time chairman, Dr John Bevan, on Monday 3rd February 2020. John had long been the main driving force of the committee and was instrumental in maintaining a healthy membership. He also ensured that the routine workings of the committee were regularly combined with interesting and highly informative presentations delivered by a wide range of invited speakers. John's standing in the diving industry was massive and his significant levels of knowledge and experience spanned all the industry sectors, making him an ideal chairman of this committee.

John was also a major supporter of the SUT having joined in 1968 and held many of the Society's elected positions over the years. He served on Council for numerous years and was elected as a Fellow of the Society in 1987. He also helped set up the SUT's Underwater Science Group in 1993 in order to incorporate and continue the aims and objectives of the Underwater Association. In 2002, John was presented with the SUT Houlder Cup. He will be deeply missed.

It is anticipated that the committee will reconvene before the end of 2020, albeit virtually. The intention is to maintain the same structure and purpose that it has adopted for the past few years. It will continue to operate on two levels: (1) being a body that represents all sectors of the diving and diving-related industry while being viewed as an independent group that can generate informative guidance on matters that concern operational efficiency and/or safety; and (2) as a group that continues to monitor and evaluate advances in diving-related techniques and technologies.

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

# Environmental Forces

The SUT Group on Environmental Forces (SUTGEF) planned three events but held only two during the year to the end of August 2020 due to the effect of COVID-19.

The event (117<sup>th</sup> Meeting) was held in Imperial College, London, on 19th Sept 2019. Two presentations were made. One was given by Dr. Kevin Drake, DNVGL, 'On combining maximum responses in ocean engineering with application to jack-up rigs going on location'. The second was by Dr. Tim Camp, LOC group on 'The updated international design standard for offshore wind turbines'.

The event (118<sup>th</sup> Meeting) was held at City on 23 Jan 2020. There were also two presentations made. One was given by Mr Sandy Fyfe on 'TLP substructures for wind turbines', talking about a new idea on better design of the TLP platform for offshore wind turbines. The second was given by Dr Ioannis Karpadakis on 'Nonlinear wave interactions and breaking at finite water depths', which is a critical issue on all offshore structures.

SUTGEF continues to provide a forum for vigorous debate between members and guests from academia and industry. The meetings were well attended. All the invited speakers were awarded a certificate.

Due to the COVID-19, the meeting planned in May and others were postponed and will take place as soon as possible in the future. If it is not viable for face-to-face meeting by Jan 2021, we may organise a virtual meeting online.



**Qingwei Ma**

## Committee

*Chair* Prof QW Ma  
*Secretary* AN Moore

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

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

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

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

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



# Marine Renewable Energies



**John Sharp**

## Committee

*Chair* Prof J Sharp

*Secretary* S Hall

*Clerk* E Boddy

N Bennett  
D Brookes  
K Buckle  
S Cheeseman  
J Colby  
P Davies  
P Fraenkel  
J Grant  
J Griffiths  
C Hanly  
J Hulm  
D Kerr  
Dr S Merry  
N Morgan  
T Morris  
M Murphy  
Dr R Norman  
J Patten MBE  
G Plant  
T Sawyer  
T Van Der Kammen  
S Wilson  
M Wright

Four meetings were held during the past year with presentations from David Kerr (Tidal Range Lagoons & Barrages), Peter Fraenkel (Energy storage scheme Gravitricity), Tony Laing (Sharing Across Energy Transition) and Tim Sawyer (Floatation Energy & Kincardine, Offshore Floating Wind). Two meetings in 2020 were successfully held online due to COVID-19.

The committee has reviewed at each meeting recent conferences relating to marine renewable energy, both in the UK and abroad. The lock-down this year has limited the number of conferences held. The committee continues to encourage participation from the significant international developments in the marine renewables field (e.g. inputs from both the US and Canada in the past year).

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.

The topic of floating wind which is of growing importance is a regular feature for discussion at the committee's meetings. A presentation at the July meeting was on the 50MW Kincardine floating wind project, see above.

The annual All Energy Conference should have been held in Glasgow in May 2020; SUT is the learned Society which is formally linked to this event. It was postponed because of COVID-19; it is hoped that the event can be held in 2021.

The annual 2020 Lennard-Senior award should have been presented at the All Energy conference in May but because of COVID-19 the conference was postponed. The presentation will be made at the SUT annual meeting in December. As in previous years candidates are nominated by Committee members for the award and then voted on those put forward.

# Offshore Site Investigation and Geotechnics

The past twelve months have been busy and successful for the OSIG committee. Since March activity has continued with online discussions and meetings where possible. Notable was that the last committee meetings held in June and September had more than 45 attendees online which is a near record attendance for recent years. The key highlights of the past year are summarised below.

## Short courses for industry and students

The OSIG MSc Masterclass went ahead as a remote two half-day Teams offer on 8th and 9th July. This was organised by Fugro and Imperial College and was offered to all UK Universities with Geotechnical/Geophysical MSc degrees. Attendance was in the order of 60 students.

In November 2019 a Geoforum was hosted in Aberdeen with the theme of geohazards and had a good level of attendance. Presenters included BP, Subsea 7, Fugro, RINA and TechnipFMC covering a variety of topics around the theme of measurement, characterisation and impact of geohazards on engineering activities.

In November 2019 a two-day short course was held at the University of Southampton covering a range of geophysical and geotechnical related topics. The course was mainly attended by industry participants and the agenda was reworked to include some practical exercises that were well appreciated by the attendees. The University of Southampton and National Oceanographic Centre are thanked for providing their facilities for the event.

## OSIG Conference

Planning work for the OSIG conference has commenced, although it has now been agreed that the conference will now be delayed from 2022 to 2023 to avoid conflict



**Neil Morgan**

## Committee

*Chair* Neil Morgan

Peter Allan  
Chris Almond  
Ricardo Argiolas  
Jon Arthur  
Paul Baggaley  
Mike Baker  
Andy Barwise  
Andrew Benson  
Emily Boddy  
Michael Brown  
Nigel Carey  
Tim Carrington  
Eric Cauquil  
David Colliard



William Cleverly	Kevin Hampson	Dafydd Lloyd-Jones	David Rushton
Mick Cook	Aime Harrison	Tom Lunne	Rupert Rowland
David Coursey	Majid Hesar	Alisdair MaConochie	Richard Salisbury
Michael Cowie	Ray Hobbs	Alice Maynard	Roi Santos
Karen Dalton	Dei Huws	Rich Metters	Alex Searle
Andrew Deeks	A Ivanovic	Simon Oakley	Felix Schroeder
Justin Dix	Richard Jardine	Richard Orren	David White
Jim Edmunds	Suzanne Lacasse	Julian Osborne	Phil Wilson
Ian Finnie	Thomas Langford	Miguel Pacheco-Andrade	Gareth Wood
Scott Gooding	Peter Larkin	John Powell	Guangquan Xu
Chris Golightly	Vincent Latron	Toby Powell	
Steve Hall	Mark Lawrence	Oyvind Ruden	



# Offshore Site Investigation and Geotechnics

*contd.*

with other similar global conferences that have been delayed due to COVID-19. Initial discussions on venue and format have been concluded.

## 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 has been updated and it is hoped this document can be made available in late 2020. The document presents a considerable update to the previous version published in 2014.

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

- Site Investigations for Marine Pipelines and Subsea Structures
- Work has also commenced on the production of a new guidance note on the shallow gas risk in geotechnical drilling.

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

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

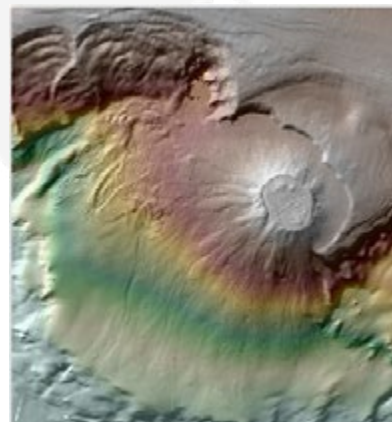
## Houston and Perth Branches of the OSIG Committee

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. A webinar was organised by the SUT in US and achieved over 100 attendees which shows the potential benefits of activity taking place online.

There are plans to organise a working group on UXO issues that require clarity in offshore wind (primarily) with the intention of a workshop being held. Discussion of targets and deliverables for the group is ongoing.

## Closing comments

The OSIG committee has continued to work hard on the short courses and guidance notes. Online committee meetings will continue and we will be looking at further options to continue other activity online. In the long term we hope to resume face-to-face meetings when possible, ideally combined with online meetings and discussions where a greater audience can be reached.



# Salvage and Decommissioning

In order to consolidate advances made in transdisciplinary work, we have concentrated on one sub-committee this year, the Decommissioning & Wreck Removal sub-committee. This group has been consistently turning out cohesive work between the oil and gas, renewable and marine science sectors, and the decision was made to increase depth and interaction between these three previously siloed groupings at the expense of breadth in Innovation & Technology and Salvage and Emergency Subsea Response.

Karen Seath has continued to run the Decommissioning and Wreck Removal as the Marine Science Chair. Under her welcoming and inclusive leadership, this sub-committee's membership continues to grow in size, coverage and authority.

As planned, work has begun on updating this Specialist Interest Group's thought-provoking discussion document: Developing a Consistent, Cross-Sector Approach for Assessing the Impact of Man-Made Materials, Objects, and Structures and Substances (MMOSS) on the Marine Ecosystem. In light of discussions around sustainability and the attainment of net carbon zero within a very short time period (2050 for the UK, and 2045 for Scotland), the role that decommissioning plays in emissions is coming increasingly under scrutiny, and the need to rigorous thinking becomes ever more necessary. Accordingly, the new discussion document is entitled: **AMMOSS Anthropogenic Matter, Material, Objects, Structures and Substances: +/- Impact on the Marine Ecosystem.**

Structured in three parts, it takes a holistic, lifetime (sector agnostic approach to:

- Legacy Issues,
- End of Life Fate in Design, and
- Sustainable Delivery of Function in Designated Service.

Natural Capital forms the foundation, with taxonomic classification being used to consider technologies that may compete for the occupation of same spatial area. This approach is used specifically to act as a bridge between biology, engineering, innovation and certification.

Highlights of this past Financial Year were being asked by the Society of Petroleum to present at Offshore Europe in the autumn of 2019, quickly followed by annual SUT/MASTS Salvage & Decommissioning Workshop, at what is now the UK largest gathering of marine scientists, with industry and regulators.

In the latter, we continue to focus on sensitive issues, such as the use of explosives as efficient cutting tools and the issue of dumped munitions, as well as highlighting the latest science and technology to further the understanding and role, that objects and physical structures, in particular, play in the cleanliness, health, wellbeing and productivity of the Greater North Sea as a basin.

In 2020 COVID-19 has curtailed all group meetings, but monthly meetings have continued, unhindered and planning for the expanded, 2020 Virtual SUT/MASTS Salvage, Decommissioning and Wreck Removal Workshop has brought



Moya Crawford

## Committee

Chair Moya Crawford  
Chair Karen Seath  
SUT CEO Steve Hall  
Coordinator Abigail Davies

Vidar Åhjem  
Eliana Mercy Araujo  
Felicity Arthur  
John Baxter  
Alison Brand  
Simon Burney  
Kevin Campbell  
Sarah Canning  
Andrew Chamberlain  
Nick Donnelly  
Arnstein Eknes  
Jim Elliott  
Mike Elliot  
Kate Gormley  
Lee Hanlon  
Becky Hitchin  
Hannah Hood  
Mark James  
Nigel James

Tony Laing	Thomas Miller	Bill Ritchie	Dan Stewart
Mark Lawrence	Joel Mills	Murray Roberts	Simon Swallow
Hannah Lawson	Peter Oliver	Sally Rouse	Win Thornton
Andy Liddell	Kilian Palop	Erin Sherratt	Tom Walters
Andy Matkin	David Paterson	Mark Shields	Martin Watts



# Salvage and Decommissioning *contd.*

opportunities to trial new communication and visualisation tools. All are sad, however, to miss the 'buzz' of this event, with its opportunity to bump into friends and make new acquaintances.

This notwithstanding, we go into the 20/21 year in good shape, with a modest ring-fenced surplus thanks to our Workshop sponsors and in good heart.

## SUT/MASTS Workshop 2019



# International Underwater Vehicles and Robotics Group

The SUT/ECOR Panel on Underwater Robotics had two meetings during this reporting period, in November 2019 and April 2020. Although many planned AUV missions were impacted by the pandemic, the regular biannual online meetings were not interrupted. The committee and invitees discussed topics ranging from updates on the SUT-PUR website and the Polar AUV Guide to advancement in AUV technology and ethics and legal aspects related to AUV applications. The Gwyn Griffiths Underwater Robotics Award (GGURA) was initiated to recognize early to mid-career professionals who have made outstanding contributions to their field in underwater robotics. Priority research including impacts of COVID-19, risks, and policies and protocols developed for AUV operations during this unusual time was also discussed. The committee and invitees from all over the world will meet again in September alongside the virtual IEEE OES AUV 2020 hosted by Memorial University from 30 Sep - 2 Oct.



**Mario Brito**



**Neil Bose**

## Committee

*Chair* Neil Bose  
*Co-Chair* Mario Brito  
*Secretary* Bo Thanyamanta

Craig Bulger  
Xi Chen  
Shuangshuang Fan  
Alex Forrest  
Gwyn Griffiths  
Stephen Hall  
David Hopkin  
Eonjoo Kim  
Gina Millar  
Alex Phillips  
Roland Rogers  
Maxine von Eye  
Jingjing Xu  
Fumin Zhang  
Mingxi Zhou  
Ting Zou