



Annual Report

2020-2021



Society for Underwater Technology Annual Report 2020-2021

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President's Foreword

Mine is a calendar year report rather than a financial year one as I became President in December 2020. I was delighted to be asked, having worked closely with SUT from the first half of the 1980s onwards (primarily on Oceanology International) and been a member of the SUT Marine Renewable Energies Committee (MREC) since its foundation. SUT plays a key role at All-Energy, now the UK's largest renewable and low carbon energy annual exhibition and conference, which I co-founded with David Stott, creator of Offshore Europe, and a Fellow of SUT.

Being on Council and in the Presidential 'hot seat' has certainly provided insight into SUT's aims, objectives and activities. I am only sorry that I am now standing down, as 2022 looks as if it is going to be an exceptionally busy year for me workwise and I cannot commit as fully as I would like to carrying out Presidential roles (especially when we get back to the 'old normal' and interaction is no longer confined to virtual meetings) I don't believe in doing things by half measures!

There have been notable highlights despite the pandemic. Indeed, some are because of it:

- **Professional accreditation** got off the ground after last year's pilot scheme. Working jointly with MTS on this important step is a major milestone. Encourage your colleagues to dive into the online application process for Marine Technology Registration; Marine Scientist Registration will follow shortly.
- **Virtual courses** have been created and held successfully. The long-standing Subsea Awareness Course has been adapted and become the Virtual Subsea Awareness Course; two have been held and attracted delegates from far and wide (a bonus of 'going virtual').
An introductory offshore wind course (two held so far) has proved equally successful. I was delighted to see so many talented women presenting. As I write this, the first virtual course on offshore site investigation and geotechnical engineering course is to be held this month (November 2021).
- **Awards:** As a long-time admirer of that indefatigable ocean explorer Don Walsh, being involved with the judging process for the Captain Don Walsh Award for Ocean Exploration (again jointly with MTS) was an honour.
- **Educational Awards** continue and it was a pleasure to be involved in the selection process
- **Bil Loth:** The sadness of hearing of Bil's death was alleviated by an afternoon of memories in his and Dolly's beautiful garden. You can contribute to his memory <https://www.justgiving.com/fundraising/bil-loth>
- **Podcasts:** Now looked after by Andrew Connelly and Emily Boddy, the series will, by the time of the AGM, have chalked up over 30 fascinating podcasts during 2021. There are over 70 to choose from online.
- **SUT Plus** have continued their programme of free webinars, holding 12 in this reporting period since June 2020 on exciting topics such as Hydrogen, Wave Energy and The Practical use of Programming in Engineering.

Regrets? I'd love to have met members face-to-face but that wasn't possible... Most of all I would have enjoyed meeting up with other Presidents for a 'how to do it' crash course. It's too late now for regrets.

Instead, I look forward to being an active Council member in the coming year; and continuing to be SUT's 'Hon PR' person in the years to come. I am delighted to be passing the Presidential-baton to another woman, Moya Crawford, and wish her well!

I would like to thank my fellow officers of the Society and the talented secretariat team for their support.



President: Judith Patten
MBE

Awards 2020-2021



Some of the attendees at the virtual SUT AGM 2020 and our presentation speaker David Mearns

Lennard-Senior Prize

Awarded to Simon Cheeseman at the SUT AGM 2020 in recognition of outstanding individual achievement in the field of Marine Renewable Energy.

Simon Cheeseman is an experienced Marine Engineer, having worked in both the commercial and public sectors. Simon joined the Catapult in February 2014. Working within their Research and Innovation directorate, Simon is responsible for managing their marine renewables strategy, identifying the Catapult's wave and tidal technology innovation priorities.

NEW Captain Don Walsh Award for Ocean Exploration

Jointly awarded by SUT and MTS (the Marine Technology Society), we are pleased to announce Dr Edie Widder as the first winner of the Captain Don Walsh Award. Dr. Widder is an MTS member, MacArthur Fellow, a deep-sea explorer, and conservationist who combines expertise in oceanographic research and technological innovation with a commitment to reversing the worldwide trend of marine ecosystem degradation.

NEW Gwyn Griffiths Underwater Robotics Award

SUT's International Panel on Underwater Robotics are honoured to announce the creation of the Gwyn Griffiths Underwater Robotics Award (GGURA). The award recognises people in the early to mid-stages of their career who have made outstanding contributions to their field in underwater robotics. The award may be for industry/commercial, research and/or creative activity in underwater robotics.

New Fellows

- Gareth Wood
- Tim Carrington
- Andrew Benson
- Miguel Pacheco Andrade
- Andrew Hunt
- Vahid Walker

New Hon Fellow

- John Partridge

Council's Summary of Activity 2020-2021

Membership

Overall membership of SUT has held up through the pandemic, lockdown, and the adverse effects on the hydrocarbon industry. SUT membership numbers reflect the experience of other Learned Societies as well as Institutions and Associations around the globe with changes to industry sectors, mergers, acquisitions, as well as contractions. For the SUT shifts with energy transitions, net zero carbon target for 2050 and delivering increased renewable energy along with increased focus on the marine environment, sustainability and protection have brought new members to the SUT. New membership, corporate and individual have come from many sectors including offshore wind, UXO, defence, salvage and decommissioning, marine acoustics, robotics and sensors. The establishment of two new special interest groups on Marine Environmental Science and Unexploded have developed new members from these sectors including new members from the offshore windfarm operators and representation from SMEs and academia.

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 as the world has continued to live with Covid-19, lockdown and restrictions on face-to-face meetings and travel.

To meet these challenges the Business Development Group looked at membership outreach and engagement in early 2021, growing the SUT's training courses for online delivery and potential opportunities for member participation and benefits with new events. There are now three committees focusing on these areas of development.

Webinars have become a regular offering from Branches, with the Aberdeen SUT+ becoming particularly proactive with their webinar programme. Media content continues to grow on SUT's YouTube Channel that includes a 'gadgets and widgets' section and the archive of webinars

The [SUT podcast](#) has grown in popularity and downloads. The download on podcast numbers has exceeded 17,000 in 2021.

The launch of online training has had good take-up from both members and non-members. The well-respected, well-known Subsea Awareness Course was relaunched as a Virtual Subsea Awareness Course (VSAC) which ran twice in 2021 as did our new course for Offshore Wind. In addition, the OSIG committee organised a training course which not only filled delegate places to capacity and created a waiting list. All of these courses will be running in 2022 with new training courses in development to grow this important area of SUT activity.

The donation from Past-President Professor Gwyn Griffiths for a new award for technologists in the field of Marine Robotics which was announced last year, received multiple entries this year. From an impressive field of nominations, the 2021 winner was Aleksandra Tomaszek of 1CSI Ltd. Entries for this award are open for 2022.

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.

Membership Summary

Corporate Members 146
Individual Membership 1617

Category	2021	2020
Hon. Fellows	14	15
Fellows	107	106
Full members	677	679
Students	128	122
Corporate individuals	691	744
Total	1617	1666

Table 1

Financial Summary Unrestricted Fund (£)

Category	2021	2020
Income	318,703	391,023
Expenditure	315,140	440,651
Surplus/ (deficit)	3,563	(49,628)
Transfers to restricted fund	-	-
Gain/(loss) on investments	28,175	6,946
Retained surplus/ (deficit)	31,738	(42,682)

Table 2

Council's Summary of Activity

contd

Finance

A summary of the Society's accounts and financial statements for 2020-2021 has been included in the Annual Report. Result for the Unrestricted Fund for this year compared with that for the previous year appears on pages 2-8 and 2-9 of the report.

The Unrestricted Fund at 30 June 2021 amounted to £299,814 compared with an amount of £268,076 at the end of the previous year, including donations and legacies, allowing for gains on investments.

Educational Support Fund

A report for the year ending 30 June 2021 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.) The impact of Covid-19 restrictions on collections at SUT events to support the Educational Support Fund not taking place is noted in the accounts on page 2-4.

D. Brookes, Honorary Secretary 28 October 2021

Registered Office: HQS Wellington, Temple Stairs, Victoria Embankment, London, WC2R 2PN, UK

Chair's Report

I would like to start by remembering Bil Loth who passed away in August this year, Bil was a much-loved and respected supporter of the Society over four decades during which time he took on just about all the key positions of council including President (2012-13) and Chairman (1993-95), only stepping back as an active member of council three years ago as his eyesight deteriorated. Bil was also the recipient of the David Partridge underwater technology award (1996) and the President's Award (2002).

Last year I reported Steve Hall our CEO was moving to a new role based in Wales. Following a rigorous selection process Dr Cheryl Burgess was appointed taking over from Steve in January of this year. Most recently Cheryl was Director General of the Pipeline Industries Guild. Starting during lockdown was certainly a challenge, not least having to arrange a handover with Steve in a train station! I am pleased to say even with all the COVID-related difficulties Cheryl quickly settled into the role and I would like to take this opportunity to thank her for all her work and support during the year.

While COVID-19 is still impacting the work of the Society we have seen the first signs of normality with some face-to-face events returning to many branches. It is however clear that going forward virtual training and events are going to be a core element of how the Society operates.

Prior to the emergence of COVID-19 the Society had been on target to breakeven in 2019-20, I am therefore pleased to report we have been able to reach this important milestone in the 2020-21 financial year. Looking forward for the 2021-22 year we are budgeting for a surplus, which as of November 2021 we look to be on target to achieve. I would particularly like to thank Mick Cook our honorary treasurer for all his work over the last six years to reset the Society's financial position and update our reporting processes.

Another significant milestone this during the summer of 2021 was the move out of our offices in Aberdeen and London, with Cheryl, Mick Cook and myself clearing the out the last paperwork and computer equipment from the John Street office at the end of August. As it turned out this was my first opportunity to meet Cheryl in person, very much a working meeting with the office on the 3rd floor and no lift. Going forward we have maintained a postal address on HQS Wellington (which many will remember from social events), but all staff are now working from home on a permanent basis.

Council

With the ongoing limits on travel and non-availability of our usual venues we continued to run Council meetings virtually during the year, hopefully as we move into 2022 it will be possible to restart in person Council meetings for those members based in the UK. In addition to finance and membership development two of the key focus areas of council during the year have been on updating the Society's Articles of Association and agreeing a joint venture agreement with the Marine Technology Society (MTS).

Articles of Association, these were last updated in 2015, with the development of the Society since then, Council agreed to form a sub-committee with the goal of completing an update to be voted on at the 2021 AGM. The majority of proposed changes relate to removal of potentially confusing / conflicting text and most importantly moving to a gender-neutral language approach throughout the document.



David Saul

Chair's Report

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MTS Joint venture, In April the joint SUT / MTS Exploratory Committee reported back to Council recommending an International Contractual Joint Venture be setup to manage and take forward SUTs ongoing relationship with MTS. Initially this will cover work on the Marine Technologist and Marine Scientist certifications, external activities, the Don Walsh Awards and bringing together the SUT and MTS journals into a single peer-reviewed publication.

I am pleased to report that, at the time of writing, these activities are on schedule to complete before the end of December 2021.

Training

With 'in-person' training still not an option for most areas the Society operates in, the training and education committee launched virtual subsea awareness and offshore wind courses, both have presented once during the financial year with good attendance. Subsequent to the year end a further virtual session of each course took place, again with good attendance. A third virtual course 'An Introduction to Offshore Geophysics and Geotechnical Engineering' is due to be presented for the first time at the end of November 2021. Looking forward we hope the US and UK will rejoin Perth in restarting in-person training in 2022. That said, we expect the demand for virtual training to continue.

Branches

The Society continues to benefit from an extensive UK and International affiliates' network. While their activities will clearly not be back to 'normal' for some time, face-to-face activities are restarting. A good example of this was the UK's North of England branch and the OSIG SIG 'Energy in Transition' seminar which attracted over 100 delegates.

Thanks

I want to thank Cheryl and the other SUT staff, Jane, Jacqui, and Emily, for all their support and hard work throughout the year, recognizing, amongst many other things, the extra work needed in closing the two UK offices, transitioning the SUT to new ways of working, delivering member benefits, administering the many virtual activities, and the challenges of an unexpected VAT inspection.

With this being my final report as Chairman I would also like to express my thanks to the Executive and wider Council for their support over the last three years, particularly Dave Brookes and Mick Cook who are also standing down from Hon Secretary and Treasurer respectively. I would also like to express my appreciation for the support of Past President Ralph Rayner and current President Judith Patten both on the Executive and their additional contributions to SUT initiatives during my time as SUT Chair. Finally, I wish Sue John every success in taking over to become the Society's first female chair.

Officers and Council 2020-2021

President

Judith Patten MBE

Chair

David Saul

Immediate Past President

Prof Ralph Rayner

Honorary Secretary

David Brookes

Honorary Treasurer

Mick Cook

Secretary to Council/CEO

Cheryl Burgess

Members

Dr M A Atmanand

Steve Johnson

Andrew Connelly

Iain Knight

Steve Duffield

David Kirkley

Gwyn Griffiths

Frank Lim

Terry Griffiths

Richard Luff

Martin Harley

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Renaë Drew

Finance/Membership Administrator

Fiona Allan

Events & Marketing Coordinator

Kym Shephard



Aberdeen Branch

www.sut.org/branch/aberdeen



Martin Harley

Committee

Chair Martin Harley
Vice-Chair Patrick Duggan
Treasurer
 Jamie Wilson

Jacqui Adams
 Keith Anderson
 Peter Blake
 Martin Brown
 Andrew Connelly
 Campbell Elder
 Euan Fowler
 Dr Ibiye Iyalla
 Tony Laing
 Andrew MacNamara
 Jim Mann
 Katrina McWilliam
 Prof. Ekaterina Pavlovskaja
 Daniele Petrone
 Paul Slorach
 David Warren
 Graham Whitehead

For the second year in succession, I find myself summarising Aberdeen branch activities that have taken place almost entirely through a laptop screen. Like all branches and indeed like public services, businesses, and the public in general, we have had to deal with Covid-19 restrictions that extended far longer than anyone had anticipated. The Society's mission depends on gathering in the same room; education always works better this way, and it has been difficult not being able to see our audience in person.

For what we were able to mount, Jacqui Adams the SUT Events Manager has been instrumental. She coordinates SUT events not only in Aberdeen but across the UK and the SUT and Aberdeen committee would be lost without her.

We said goodbye to our out-going CEO Steven Hall for his time with the SUT over the last 3½ years and welcomed our new CEO Cheryl Burgess who joined us in January and rapidly started making waves. Her frequent attendance at our committee meetings smooths communication and in the current business environment the appointment of a CEO with industry experience is welcome.

2020-2021 Branch Activities

Our Annual Dinner and AGM, NASA in Aberdeen, Techfest and our monthly evening seminars at the Robert Gordon University all were cancelled. Perhaps the most difficult loss to the branch was our Subsea Awareness Courses. Last run in March 2020, we had intended to run three more courses in 2020 but the in-person event remains on hold and we are instead assisting with the virtual course run by our colleagues in UK central which has a slightly different content.

We compensated with the following events which all took place online.

- In November 2020, our annual day-long seminar run in conjunction with The Hydrographic Society of Scotland and the International Marine Contractors Association, "Sustainability: The Subsea Industry and the Evolution of Energy" generated revenue streaming entirely online.
- The Schools Christmas Lecture featured contributions from MacDuff aquarium, the RGU MATE ROV competition team, Oceaneering and OceanGate. The lectures are one of the larger demonstrations of the society's charitable obligations.
- The Business Breakfast in April 2021 covered the subsea market outlook with presentations from Simmons, Rystad and the OGTC.
- We hosted a four-part series of Webinars on the Life Cycle of North Sea Decommissioning Projects. These lunchtime webinars with presentations and Question & Answer sessions charged a fee but still won an audience who listened to lectures from Boskalis, Genesis, Allseas and UK regulator OPRED.
- Aberdeen committee member Andrew Connelly has taken up the responsibility of hosting the SUT Podcast series which now runs to over 70 podcasts and over 17,000 separate downloads from as far away as Iqaluit, San Carlos De Bariloche, Port Blair and Misawa.

It's reasonable to say we've all learned some new skills; not only microphone etiquette but screen-sharing and arranging our bookcases and living rooms to provide the least distracting background. The new problems we've had to

Aberdeen Branch

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address included how to advertise an online event, deciding whether to charge a fee and presenting to camera when waving arms around no longer does any good. Not to diminish the severity of the pandemic, but some good things have come out of the experience.

Aberdeen Committee

We again held elections for places on the Aberdeen Committee. We have voting and non-voting (co-opted) seats and each year we submit a third of our voting seats to vote by the membership. I would like to welcome new committee members Calum Hayton and Paul Slorach 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 need to say goodbye to Katherine Ferguson and Kilian Palop, members of the Aberdeen committee who have recently moved to new employment in the Middle East and who's association with the SUT I know will continue.

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 and both Katherine Ferguson and Jamie Wilson; Katherine briefly acted as our Branch Honorary Treasurer and with her departure Jamie has replaced her in the role.

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 and mid-career transitioners. They augment the regular committee and their own events this year have included webinars on Environmental Assessments before Decommissioning and Autonomous Surface Vehicles.

The End of Lockdowns

Whether we speak to you online or for real and in person, Aberdeen remains 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. Please keep an eye out for what we get up to as life starts returning to normal, come out to meet us and join in the debates we hold. Nobody can fail to have noticed the changes underway in the underwater world and through our individual and corporate members and events programme, we're in the thick of it.



Australia Perth/Melbourne Branch

www.sut.org/branch/perth



Steve Duffield

Committee

Chair Steve Duffield

Vice Chair Phil Griffin

Secretary

Nick McNaughton

Treasurer Hema Wadhwa

Allen Devlin (*new in 2020*)

Ben Stangoni

Brett Phillips (*new in 2020*)

Brian Wardlaw*

Bukkie Orugan

Christian Marocchi

James Shorthouse

(*new in 2020*)

Julie Morgan

Leanne Geneve

Mark Casey

Matthew Moore

Nitin Repalle

Paul Farquharson

Pawan Gupta*

Pieter Swart (*new in 2020*)

Rex Hubbard

Sarah Elkhatib*

Scott McMaster

Stuart Higgins

Terry Griffiths

After a tumultuous year to 30 June 2020 with the onset of COVID 19 and making plans around an unknown future, the Perth branch finished this year, in front in many ways and built on those decisions made in the previous year.

Perth Branch Committee

Committee members continue to provide enthusiastic, imaginative and creative support to the branch bringing in a fresh outlook with great ideas. We would like to thank all committee members for their efforts in enabling us to reach our goals. We are indebted to the 2020 and 2021 committee groups, and we wish to express our thanks to retiring committee members (noted with an *) who gave very generously their time, knowledge and support. 2020 and 2021 Committee Members are listed on the right.

We give special thanks to Rex Hubbard (2019 and 2020 Perth Chair).

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:** Mark Casey, Steve Duffield, Phil Griffin
- **Annual Dinner:** Renae Drew, Leanne Geneve, Pawan Gupta, Nick McNaughton
- **AOG 2021:** Christian Marocchi, Pawan Gupta, Julie Morgan, Nitin Repalle, Hema Wadhwa
- **AUT Conference 2023:** Steve Duffield, Ian Hobbs, Stuart Higgins, Jeremy Cohen, Peter Baker, Nina Levy, Mark Casey, Andrew Richardson, Kym Shephard
- **Branch Support:** Brett Phillips, James Shorthouse
- **Course Review:** Allan Devlin, Rex Hubbard, Hema Wadhwa
- **Decom / Salvage:** Christian Marocchi, Phil Griffin, Scott McMaster
- **Engagement:** Leanne Geneve, Bukkie Orugan, Allan Devlin, Paul Farquharson, Peter Clarke, Sahil Aggarwal
- **Evening Technical Meeting/AGM:** Allan Devlin, Brett Phillips, Scott McMaster, Paul Upjohn, Hema Wadhwa
- **Finance:** Fiona Allan, Phil Griffin, Hema Wadhwa, Steve Duffield, Nick McNaughton
- **Golf Day:** Allan Devlin, Renae Drew, Steve Duffield, Scott McMaster, Brett Phillips
- **Immerse 2022:** Paul Farquharson, Paul Upjohn
- **Membership:** Fiona Allan, Steve Duffield, Phil Griffin, James Shorthouse
- **Mentoring:** Mark Casey, Paul Farquharson, Phil Griffin, Nitin Repalle
- **Oceans Conference 2024:** Hema Wadhwa, Pieter Swart, Terry Griffiths
- **OSIG Perth:** See overleaf for full 2020/2021 summary.
- **Scholarships:** Fiona Allan, Nick Bardsley, Phil Griffin, Nick McNaughton, Nitin Repalle, Julie Morgan

Australia Branch

contd.

- **Subsea Controls Down Under 2022 Conference:** Kym Shephard, Mark Casey, Paul Upjohn, Harry Mackay, Harvey Smith, Norman O'Rourke, Michael Cojin, Julien Levadoux, Ross Hendricks, Minh Vo, Ned Chapman, Stuart Higgins, Derek Thompson
- **Subsea Engineering Competency Framework:** Mark Casey, Michael Cojin, Afton Galbraith, Terry Griffiths, Pawan Gupta, Rex Hubbard, Christain Marocchi, Chris Merrick, Julie Morgan, Gabriel Pennock, Ewan Rowell, Chris Saunders, Norman O'Rourke, Ian Wilson
- **YES!:** Bukkie Orugan, Nitin Repalle

SUT Perth Branch Events

The Perth committee and staff were quite busy during the year. In Western Australia access to face-to-face opportunities came much earlier than elsewhere, and we were able to advantage.

The following events were held during the year:

- 4 x YES! event
- 1 x Conference (AOG)
- 5 x Evening Technical Meetings
- 6 x Courses (Hybrid & Online)
- 5 x OSIGp events
- 3 x Social events (Casual Catchup, Annual Dinner & Golf Day)

Of special note were the activities of the Special Interest Groups, YES and OSIG. They were able to keep a full annual agenda.

Staff were magnificent in ensuring our events complied with the many government requirements that changed regularly. The AGM was held this year at Karstens in Perth. The Chairperson, Treasurer and Secretary's Reports were presented and the new 2021 Committee announced. Sincere thanks were given to the Members, Sponsors, Presenters, Office Bearers, Committee, Sub-Committees and SUT Staff during the year.

Our 2020 Annual Dinner was a sold-out event, held at the prestigious Optus Stadium however due to capacity limitations, attendance was a lower than usual, 160 guests. The event was MC'd by local radio personality Kymba Cahill who will be returning in 2021.

Guests enjoyed a pop-up gin bar and were entertained by a dazzling light show and local magician Robbie T. Subsea Engineering Associates were the event sponsor and we thank them for their continued support throughout a challenging year.



Australia Branch

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Conferences

The Subsea Controls Down Under Conference was scheduled to be held in October 2020 however it was postponed due to the Covid-19 pandemic to October 2022.

AOG (Australian Oil & Gas) Conference and Exhibition, 10th – 11th March 2021

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 2021.

Courses:

The following training courses were run in the 2020/21 year:

- Subsea Productions Systems – ONLINE 4th August 2020
- Subsea Awareness Course – HYBRID ONLINE/IN PERSON, 31st August - 4th September 2020
- Subsea Awareness Course, 3rd – 7th May 2021
- Offshore Geohazards Course, 26th May 2021
- Metocean Awareness Course, 1st – 2nd June 2021



Lunchtime and Evening Technical Meetings

The following evening technical meetings were held:

- LTM: Catastrophic Electrical Failures in Long Umbilicals 4th August 2020
Presentations by: Neil Douglas, Viper
Sponsored by: Viper Innovations
- LTM: What is CAN? 4th August 2020
Presentation by Wolfgang Mathis, Neodrill
- ETM: Will Subsea Compression Processing take off in Australian Development, 14th October 2020
Panel Discussion featuring: Tim Nallipogu - Woodside, Yvonne Driessens – Shell, Drew Sage – Aker Solutions, Luca Letizia – One Subsea, Si Huai Yeaw (Moderator)
Sponsored by: Atteris and Woodside

Australia Branch

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- ETM: Advancements and Innovations in Subsea Pipeline Design, Operation & Maintenance, 17th February 2021
Presentations by: Sophie Yin – Woodside, Henri Morand – Technip FMC and Christian Wiebe – Matrix.
Sponsored by: Woodside
- ETM: The Marine Environment & Renewable Energy, 21st April 2021
Presentations by: Terry Griffiths – University of Western Australia, Jana Orszaghova – University of Western Australia (Wave Energy Research Centre) & Matt Allen – Subcon
- ETM: Innovations in Inspection, Maintenance & Repair, 16th June 2021
Presentations by: Paul Georgeson – A60N, Iain Wylie – Oceaneering & Jason LeCoultré – IAS Group.
Sponsored by: Viper Innovations

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

The Committee is, as always, grateful to all presenters and 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 – 18th September 2020

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 that attended.

Capacity was capped at 100 for the event and 25 teams battled it out on the course, followed by a putting competition, before enjoying post-game food and drinks whilst the prizes were awarded. A great day was had by all.

We are very grateful for the sponsors who made this possible including: R&D Solutions and Subsea Engineering Associates.

SUT Perth Sub-Committee Updates

Branch Administration

The 2020-2021 year welcomed new staff member Renae Drew as the Events & Marketing Coordinator, replacing Patricia Slapp who has returned to full time study and continues to assist the Perth branch in a casual capacity.

Australia Branch

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Fiona and Renae continued 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. Due to COVID no attendance to other branches was possible.

Branch Initiatives

During the year, Perth branch continued with new initiatives. These are below:

Subsea Engineering Competency Framework

- 20/21 SECF accreditations for 6 Engineers

Two new Scholarships offered in 2021

- Digital Automation in Engineering sponsored by SEA; and
- Marine Renewable Energy Scholarship sponsored by Aurora Offshore Engineering

ACNC approval

- SUT has been registered as a charity with the Australian Charities and Not for profit Commission (ACNC)

Hybrid Courses now offered.

Branch Strategy

The committee took the opportunity to review the current Strategic Plan. Under the facilitation of Jatin Lodhia, The committee scan the environment, polled our members and then met to determine the strategy and actions required. The Strategic objectives we agreed are:

1. Engage with Tertiary Institutions
2. Diversification of Membership
3. Be more Active in Knowledge Transfer
4. Value for Membership Money

We identified over 43 actions which are now in progress to begin to meet these objectives.

Engagement

The strategy for Engagement for 2020/2021 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
- Stretch to grow our regular sponsorship base and increased membership numbers
- Continued Growth in diversification of SUT Perth branch.
- Continued Synergies with ETM, Engagement and Membership Sub-committees

The COVID pandemic impacted some engagement opportunities with less sponsorship available from companies.

Finance

SUT Perth Branch ran at a surplus in the 2020-2021 financial year of approximately \$AUD 66,000. This was a great turn around from the prior year loss of \$32,000. This was mainly due to:

- Government funding of Job Keeper
- Face-to-face events were able to held for the whole 2020/2021 year
- Running of Subsea Awareness Courses in September 2020 (Hybrid) and May 2021
- Fewer staff costs with no longer having a Branch Manager

An audited Income and Expenditure Statement for the year will be forwarded to Council following the finalization of the audit in November 2021.

Australia Branch

contd.

Marketing

Our marketing strategy has remained focused on digital engagement with our members, particularly during 2020/2021. 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 2021:

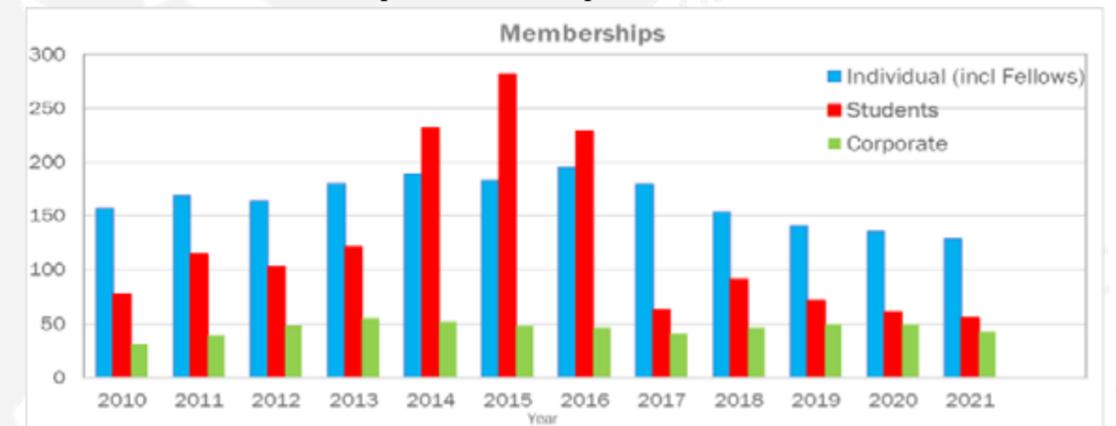
We finished the year slightly better than we started

Australian Branch Membership	June 2021	June 2020
- Individuals	130	125
- Fellows	12	11
- Corporate - Local and Global	52	52
- Students (fee paying)	61	61

Remote Members:

- Malaysia, New Zealand; New South Wales; Victoria, South Australia and Queensland

Membership has fallen over time. The substantial change in student membership was as a result of the introduction of fees in the 2015 / 2016 period. All new members are approved by a Membership Sub-Committee. The committee has identified some actions to seek to improve membership numbers.



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

SUT ran the Mentoring programme for the 2020/2021 financial year. The mentoring program is run in conjunction with other similar societies in Perth on a rotating basis. Five events were organized throughout the 2020/2021 year.

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



Australia Branch contd.

(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 2020-2021 include:

- "Evening GeoForum" featuring topics such as Nuclear Power Safety and Seafloor Pockmarks & Submarine Landslides;
- "Lunchtime Technical Meeting" on the topic of leveraging oil and gas subsea expertise into the offshore renewables industry.

The committee has also contributed in the past, and will continue to do in the 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 | • Myra Keep |
| • Cathal Colreavy | • Laith Tapper (Chair) | • Nichole Fiumana |
| • Colm O'Beirne | • Manuel Herduin | • Raffaele Ragni |
| • Damon Sunderland | • Matthew Kuo | • Reza Gholilou |
| • Emma Eltringham (Secretary) | • Michael Cocjin (Vice Chair) | • Tim Pugh |



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 68 scholarships since 2007.

This year we awarded three scholarships and are pleased at the continued and positive uptake of scholarships by the student fraternity. Scholarship recipients were

- | | |
|--------------------------------------|-----------------------|
| SUT Scholarship: | Georgia Nester |
| Chris Lawlor Scholarship: | Jack Jorgensen |
| Marine Renewable Energy Scholarship: | Eric Gubesch |

Australia Branch contd.

The Marine Renewable Energy Scholarship is sponsored by Aurora and recognises the applicant with the greatest potential to contribute to the development of marine renewable energy.



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.

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 was run in June 2021

Further information is available here: www.sut.org/branch/australia-perth/subsea-engineering/overview/

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 overleaf). Full post-event reports on all events can be found at http://www.sut.org/events/?tribe_event_display=past. In addition to events, YES! Committee members have promoted

Australia Branch

contd.

SUT membership and events at universities, supported SUT Mentoring and have a large involvement in the SUT Scholarship program.

YES! currently has two annual sponsors, Woodside (since 2014) and Santos. 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:

2020/21 Committee:

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

YES! events in 2020/2021:

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

- 2020 Panel Discussion – 23 September 2020
- 2021 Quiz Night – 18 March 2021
- 2021 Site Visit – 10 June 2021

Year Ahead

Perth branch will be doing a couple of new things in the 2021 – 2022 period in line with their five-year strategy plan 2021-2025:

1. Engage with Tertiary Institutions
2. Diversification of Membership
3. Be more Active in Knowledge Transfer
4. Value for Membership Money

All of the above new activities 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.

The budget for 2021/2022 has been approved by the Finance Committee with a small surplus expected. The budget assumes that live events can be run. The Perth Branch committee are cautiously optimistic about a general market improvement over the year ahead.

Brazil Branch

www.sut.org/branch/brazil



In the period July 2020 to June 2021, the activities of the SUT Brazil Branch have been based on online seminars and short-course as described below.

Seminars on Offshore Renewable Energy

Organized by Human Resources Programs PRH7 and PRH18 from National Petroleum Agency with the support of SUT Brazil Branch.

7 October 2020 - Offshore Renewable Energy: Status and Perspectives

Prof. Segen Farid Estefen
442 attendees | [Watch here on YouTube](#)

14 October 2020 - Offshore Wind in Brazil: Opportunities and Challenges

Prof. Milad Shadman
563 attendees | [Watch here on YouTube](#)

21 October 2020 - CFD Application in the Design of Large Offshore Wind Turbines

Dr. Mojtaba Maali Amiri
275 attendees | [Watch here on YouTube](#)

28 October 2020 - Material and Geometry Properties of Wind Turbine Blade

Dr. John Chujutalli
206 attendees | [Watch here on YouTube](#)

4 November 2020 - Atmosphere Modeling for Offshore Wind Energy in the Southeast and South Regions of Brazil.

Mr. Luiz Filipe de Assis Tavares
163 attendees | [Watch here on YouTube](#)

Seminars on Subsea Technology

Organized by Human Resource Program PRH18 from National Petroleum Agency with the support of SUT Brazil Branch.

24 February 2021 - General View of Flexible Pipes: Design, Fabrication and Installation

Mr. Gustavo Gomes
371 attendees | [Watch here on YouTube](#)

17 June 2021 - Status and Technological Tendencies for ROVs in the Oil&Gas Industry

Mr. Julio C. H. Rebello
111 attendees | [Watch here on YouTube](#)



Prof. Segen F. Estefen

Committee

Chair Prof SF Estefen
Secretary Prof M Vaz
Treasurer T Netto
Executive Manager
VC Santos

C Bonfim Silva
P Couto
E Labanca
E Nakagawa
C Paulo
M Teixeira

Brazil Branch

contd

Short-Course: From Reservoir to Refinery

Organized by Human Resources Programs PRH7 from National Petroleum Agency with the support of SUT Brazil Branch.

Talk 1: Regulation and Legislation – 1st June 2021 - Dr. Leonardo Oliveira – ANP
1425 attendees | [Watch here on YouTube](#)

Talk 2: Oil & Gas Regulation – 2nd June 2021 - Dr. Meg Montana Kede de Luca- Shell Brasil
807 attendees | [Watch here on YouTube](#)

Talk 3: Opportunities for Innovations in the O&G Industry – 8 June 2021 - Mr. Raimar van den Bylaardt – SG Gestão Tecnologia e Ambiental / PhDsoft Tecnologia
636 attendees | [Watch here on YouTube](#)

Talk 4: Innovation and the Future Professional – 9 June 2021 - Título: Inovação e o profissional do future - Mr. Leonardo Ramalho Machado - Shell
500 attendees | [Watch here on YouTube](#)

Talk 5: Petroleum Geology - 10 June 2021 - Prof. Jorge P. Figueiredo - UFRJ/IGEO
551 attendees | [Watch here on YouTube](#)

Talk 6: Applied Technologies for Formation Evaluation – 14 June 2021 - Dr. David Xavier - Halliburton
606 attendees | [Watch here on YouTube](#)

Talk 7: Reservoir Studies – 15 June 2021 - Mr. Luz Marina Zabala - COPPE/UFRJ
527 attendees | [Watch here on YouTube](#)

Talk 8: PVT Analyse / Phase Diagram – 16 June 2021 - Dr. Luiz Amado- BHP
422 attendees | [Watch here on YouTube](#)

Talk 9: Wells Drilling – 17 June 2021 - Dr. Shiniti Ohara- Barra Energia
461 attendees | [Watch here on YouTube](#)

Talk 10: Drilling Design – 21 June 2021 - Dr. Naisa Arturo - Shell
497 attendees | [Watch here on YouTube](#)

Talk 11: Well Completion Engineering – 22 June 2021 - Dr. Benjamin Plavnik - H&C Gestão de Risco Consultoria e Engenharia Ltda
407 attendees | [Watch here on YouTube](#)

Talk 12: Drawing Basic Aspects of the Well Completion - 23 June 2021 - Dr. Antonio Ortiz - Baker Hughes do Brasil
386 attendees | [Watch here on YouTube](#)

Brazil Branch

contd

Talk 13: General View of Elevation and Flow – 24 June 2021 - Dr. Danielle Monteiro e Dr. Gabriela Chaves – COPPE/UFRJ

354 attendees | [Watch here on YouTube](#)

Talk 14: Systems of Submerged Centrifugal Pump (BCS) – 28 June 2021 - Dr. Marcos Guimarães - Baker Hughes
477 attendees | [Watch here on YouTube](#)

Talk 15: NG Process and Oil Refinery - 29 June 2021 - Dr. Alexandre Leiras - COPPE/UFRJ
443 attendees | [Watch here on YouTube](#)

Talk 16: Process and Refinery - 30 June 2021 - Dr. Patrícia Carneiro - Petrobras
318 attendees | [Watch here on YouTube](#)



China Branch

www.sut.org/branch/china



Frank Lim

Committee

- Chair Frank LIM
- Chair Emeritus DUAN Menglan
- Sponsor ZHANG Laibin
- Technical Advisors ZHOU Shouwei ZENG Hengyi 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)

SUT China branch successfully organized the 9th International SUT (China) Technical Conference & 1st SUT/SEG Marine Resource Exploration and Development Technology Symposium in Changsha, China from 6-8 January, 2021. The conference was hosted by SUT, SEG, Changsha Research Institute of mining and Metallurgy and China University of Petroleum-Beijing.



Due to the COVID-19, the conference was held both on-site and online.



Ten students were awarded Outstanding Student Presentations in this conference, and the list is shown overleaf.

Future Plans:

The 10th SUT (China) Conference will be jointly held in Dalian, China, from 22-25 October 2021. The theme of this technical conference is "Ships and Marine Engineering Equipment". The conference will be hosted by Dalian University of Technology, co-hosted by China University of Petroleum (Beijing), and supported by universities and research institutions such as Chinese Society of Mechanics, Liaoning Provincial Society of Mechanics, etc. Distinguished experts

China Branch

contd

in the field of offshore engineering will be invited from the UK, Singapore, Brazil, Malaysia, South Korea, Russia and other foreign countries. Scholars and practicing engineers from China National Offshore Oil Corporation, Harbin Engineering University, Shanghai Jiao Tong University, Zhejiang University, South China University of Technology, Northwestern Polytechnical University, Ocean University of China and Zhejiang Ocean University attended the previous conferences. This conference will be an international and authoritative meeting of domestic and international experts and scholars on key topics such as underwater technology, intelligent manufacturing and monitoring of marine engineering equipment, construction of marine big data platform, and sustainable utilization of future marine engineering equipment and resources.

Outstanding Student Presentations					
9 th International SUT (China) Technical Conference & 1 st SUT/SEG Marine Resources Exploration and Development Technology Symposium					
No.	Student Name	University	Presentation Title	Subject	Session Chair /Reference
1	JI Chengai	Changsha Research Institute of Mining and Metallurgy	Research on the Flow State of Y-Shaped Pipeline at the Bottom of Deep-Sea Mining Relay Station	Mining	ZHENG Hao
2	DENG Liwen	Central South University	Numerical Simulation of the Flow Field of Six-Stage Centrifugal Pump with Different Turbulence Models		HU Qiong
3	SU Qi (Online)	Dalian University of Technology	Optimization Design of Anti-fatigue of Dynamic Umbilical Cable Configuration	Development Solutions / Hardware Design	SIA Yong
4	MWANGANGA Fatuma RAJAB	China University of Petroleum (Beijing)	Design Modification and Analysis to Improve Stability of a Scabed Structure		ZHEN Ningwei
5	LI Fangda	Central South University	Volcanogenic Massive Sulfide Deposits Modelling Using Marine Controlled-Source Electromagnetic Method	Exploration / Survey	LI Lei
6	ZHANG Junjie	Hunan University	Distributed Model Predictive Surge Speed and Depth Control of Multiple Autonomous Underwater Vehicles		GUO Zhenwei
7	CHEN Jiaming	Zhejiang Ocean University	Dynamic Behavior at TDZ of SCR Under Different Pull-out Velocities from the Soft Clay	Soil Mechanics	WANG Xiaoying
8	ZHANG Peng (Online)	China University of Petroleum (Beijing)	The Study of the Debonding Failure Between Tension Armor and Adhesive in Flexible Pipe End Fitting		FU Guangming
9	WANG Yu	China University of Petroleum (East China)	Experimental Investigation on Vortex-Induced Vibration of the 60°-Staggered Riser Group Coupling Interference Effect	Hydrodynamics / Flexible Pipe / Umbilical / Rope	YANG Zhixun
10	MAO Yandong	Harbin Engineering University	Research on Lightweight Design for Filling Bodies in the Cross-Section of Umbilical Cables Based on Topology Optimization Method		CHANG Yuanjiang



Committee Meeting during the 9th International SUT (China) Technical Conference



Kuala Lumpur Branch

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



Former Chair - 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 once again been in hiatus during this reporting year, as the Chair needed to stand down in 2020 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



Richard Binks

Committee

Chair Richard Binks

Deputy Chair

Keith Broughton

Hon Treasurer Iain Knight

Hon Secretary

Graham Taylor

Hon Sec SW Phil Johnston

SUT Events Manager

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

SUT LSE is in rebuild mode after the months of lockdown and social distancing. Although remote webinars, podcasts and distance learning are now all part of SUT's remit for disseminating knowledge, another part is the social interaction between our members. We are now in the process of re-invigorating our face-to-face events. Initially this will be through social events and will return to a schedule of presentations the new year.

Our thoughts are to run forum events with three to four speakers on a common theme. Our first will be on Carbon Capture and this is scheduled for February 2022. Although the future is "Net Zero" we will inevitably have ups and downs in our energy supply so in January we will return to the City, for a lunchtime presentation on forecasting the infrastructure needed offshore.

A lot of work has gone into preparing material for a City Subsea Awareness Course (SAC). Sadly, we have not managed to run this. Getting the right software package for booking, presenting, interacting, and recording the online course was difficult. Our intention, therefore, is run a face-to-face course in March 2022. The aims are for a day (or two half days) course with 2-3 speakers. The online course modules, written with great effort by Mark Murawiecki, represents a valuable tome of work that is still valid for a face-to-face course. The one-day course will also adaptable be to different target markets such as for investors in subsea technology.

SUT+ for our younger members is still vitally important. Encouraging their professional development within subsea technology is an important part of knowledge sharing within SUT. Equally it is hoped that they can be "Ambassadors" within their companies *ie* SUT catalysts: posting meeting notices and encouraging event attendance etc. We are actively encouraging links between the London and South Coast SUT+ members and also developing ties to other professional groups such as Lloyds U35s.

Summary

We are looking forward to a return to better more social times with Covid-19 tamed if not vanquished! 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.

The LSE branch is indebted to its committee for ideas and the energy to drive us forward. As ever we welcome anyone to the committee who would like to commit some time to see this important technology society grow.



Middle East Branch

www.sut.org/branch/middle-east



Adrian Phillips

The seismic events of 2020 continued well into 2021, so we completely re-jigged the program of events and have run a series of highly successful online webinars. ADIPEC was online so we started planning well ahead of the year and hit the ground running in January 2021 with Nexans 10,000T spread on the Aurora. We ran sponsored events on Conductor Repair with input from Aberdeen, Vessel Certification (a highly topical subject), Composites (growing interest) and finally Subsea Insurance (new topic from the insurance community).

ADIPEC is face to face again in November, but organisers DMG have created a somewhat scaled down Offshore, Marine and Commercial Dive Zone in Hall 14. We will have a stand but unlikely to host the popular X-Talks event where we normally show-case subsea technology.

Middle East continues to be a challenging domain for SUT type activity, with its climactic challenges, transient nature of the expatriate engineering community. Another 35% of the committee has changed jobs or left in the last year. The pandemic has not helped, but we have survived, and the committee has grown. The online momentum has been building and we now have over 1500 subsea professionals in the region with an interest in what we are doing.

We continue to draw the committee from some of the major players in the industry who have all been affected by the pandemic. This year I am proud to say we have all major EPC represented (NPCC, Saipem, McDermott and Subsea 7) and finally ADNOC. Otherwise the committee has representatives from Boskalis, DCN BV, Mermaid, Lloyd Warwick, Connector Subsea, Dolphin Energy, Motive, Pelagian, Prysmian, Baker Hughes, Gulf Marine, Oceaneering, Horizon, Unique, Dolphin, Subtech (James Fisher Offshore), Mermaid, Wood, SPE, Pipeshield and the Tekmar Group. These companies are the subsea industry in the Middle East and all focused on Aramco, ADNOC and QG (QatarGas) offshore activity in Saudi, UAE and Qatar. I thank all for their continued energy and commitment.

Post ADIPEC we had a full program of events mapped out for 2021/2 under both webinar and our traditional "face-to-face" model, including the EPRS (Emergency Pipeline Repair Systems) event to be hosted by ADNOC in Dec 2021.

All said and done we continue to be at an early stage of our development, without staff, bank account or legal entity but we mark our third anniversary with a return to ADIPEC. We have an outline for a Middle East "Subsea Awareness Course" but looks like SUT has got this online already. It would need a Middle East spin!

Committee
Chair Adrian Phillips

Dubai

- Graeme Chalmers
- Ed Bevan
- Steve Goddard
- Bob Morgan
- Nawin Singh
- Farnaz Ghasemi
- Bedros Mardikian
- Anand Menon
- Ashish Rawal
- Chris West
- Ross Anderson
- Lesya Kramarenko

Abu Dhabi

- Richard Richards
- Bill Hickie
- Russell Harper
- Brad Kirkland
- Spencer Clark
- Tarek Al Marzouqi
- John Charalambides
- Iain Selkirk
- Mark Thomer
- Neil Dalziel
- Ibrahim Fahmy
- Evgeniya Mitchell
- Katherine Ferguson

North of England Branch

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



Martin Bingham

Unfortunately due to the impact of COVID the NoE committee were not able to arrange any lectures during the reporting period. However, some of the branch committee were able to participate in a joint event with RINA/IMAREST.

The committee is actively looking for additional members to strengthen the branch and bring extra diversity of subsea interests from the surrounding areas.

The branch will be re-commencing visits and talks soon.

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



Norway Branch

www.sut.org/branch/norway



Nils Vågen

The Norway Branch in Bergen had been ‘closed’ since the pandemic started. Much like the rest of the world, we experienced lockdown and this meant activity was minimal for the branch.

During the summer months of 2020 we had hope for a slow opening but we were hit hard again by COVID in November. Since then almost everyone who had the opportunity has been working from home, Universities and high schools had been closed and are still not open in some regions. This has been the background for the lack of SUT activities in Bergen, Norway. We are now adjusting and moving to more ‘normal’ times. We hope this will mean the reopening of branch activities in 2022.

We had been working closely with GCE Ocean Technology, co-hosts of the UTC conference, which took place online in June 2021.

We hope to plan more activities for the branch in 2021-2022.

Committee

Chair Nils Vågen

Manager Tom Erikson

O Hagesaether

GA Johansen

RD Skre

I Westervik

Singapore Branch

www.sut.org/branch/singapore



James Christie

This report summarizes the SUT Singapore Branch activities and statement of accounts for the calendar year 2021.

In accordance with the Society’s Singapore Branch Constitution, the main objectives of the Society are to:

- Promote the further understanding of the underwater environment;
- Encourage cross-fertilization and dissemination of ideas, experience and information between workers in academic research, applied research and technology, industry and government;
- Encourage development of techniques and tools to explore, study and exploit the oceans;
- Encourage proper economic and sociological usage of resources in and beneath the oceans;
- Encourage further education of scientists and technologists to maintain high standards in marine science and technology.

These objectives are achieved by organizing regular industry events we term “Technical Evenings” that provide a platform for subsea technology speakers and also the opportunity for industry networking of members and non-members.

Due to the continued global COVID-19 pandemic this year, all public gatherings were not permitted in Singapore. The year started with an invigorated committee that brought new ideas for our sponsorship program and academic out-reach. However, in accordance with Singapore Government social distancing measures, planned physical activities for 2021 have been postponed until further notice.

This report has been written and issued by the SUT Singapore Branch Executive Committee.

Activities Report

The AGM was held on the 5th December 2020. In addition, for 2021 there were three regular committee meetings held as summarized here:

- 17th March
- 25th May
- 8th September

The objective of the committee meetings is to discuss, organize and action the activities of the Society.

Due to the current restrictions, we needed to adapt to the new situation and rather than hold Technical meetings it was agreed that we would host a Webinar on July 29th on Remote Operations and Autonomous Technology. The webinar consisted of 3 x 15 minute presentations and attracted 160 attendees.

- Dr Ioseba Tena, Global Business Manager for Robotics, Sonardyne. Presenting Sonardyne in Robotics and Autonomy.
- Richard Mills, Vice President Marine Robotics, Kongsberg. Presenting Shore to Shore Operations with Robotic Systems.
- Sam Forbes, Director SpAARC, Fugro. Presenting The Future of Remote and Autonomous Operations.

Committee

Chair James Christie

Vice Chair Colin Campbell

Treasurer Wendy Lee

Secretary Jose Manuel Puig

Xiang Liu

Che Keong Lee

Mark Colbridge

Andy Ching

Phillip Thomas

Derrick Chow

Andrew Blears

Petter Nilsen

Derek Donaldson

Anthony Gleeson

Singapore Branch

contd

While the ambition for the SUT Singapore Branch was well intentioned, the local and regional restrictions hampered us severely into our strategy of progressing activities in the region. Our aim is to possibly hold another webinar to add value for our sponsors in Q4 and address the future and forward strategy of the SUT in the region during the AGM in December.

Branch Committee Members

During the 2020 AGM, Anthony Gleeson and Jose Puig resigned from their positions as Chairman and Secretary respectively, replaced by James Christie and Andrew Blears. Wendy Lee assumed the role of treasurer as Che Keong Lee stepped down. Petter Nilson was added as Committee member.

US Branch

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 Marine Renewable Energy Committee (MREC); 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.



Tricia Hill

Notable efforts:

- 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 held its first Marine Autonomous Systems Virtual Technical Conference & Exhibition.
- SUT-US held its first 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. The organization ran from January 11 beginning with applications, until April 9th with the awards. Participation included 4 teams and 1 individual competitor solving problems in subsea carbon capture, remote subsea power systems and offshore renewable energy. This was sponsored by Subsea Shuttle and Sify. The 2022 competition will open for registration on January 17th.
- SUT-US held its first in-person Networking Event since June 2019. All learning programs have been held remotely, including our flagship Subsea Awareness Course.
- Transition to a 501C-3 organization is ongoing.
- SUT-US helped advertise the call for applications for Requests for Technical Support, RFTSs, to support marine renewable energy (MRE) testing and development projects, through the Testing Expertise and Access for Marine Energy Research (TEAMER™) program, sponsored by the U.S. Department of Energy (DOE) and directed by the Pacific Ocean Energy Trust (POET).

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. Audrey Guzman works as a supporting editor and as an accounting assistant.

A summary of the key activities held at the SUT-US branch for the period of 1 July 2020-30 June 2021 is detailed overleaf.

Members at Large	Roger Osborne	<i>MREC Chair</i>
<i>Education Committee Chair</i>	Kim Faulk	Steven Johnson
John Allen	Christopher Curran	Sandra Jakl
Maria Ancheril	Colin Johnston	Rodolfo Sancio

Committee

- Hon Chair & President*
Tricia Hill
- Hon Treasurer and Training Officer* Don Schlater
- Hon Secretary*
Jan Van Smirren

- OSIG Chair* Andrew Hill
- School Touring Chair*
Andrew Haigh
- Robotics and Automation Chair* Fathi Ghorbel
- Young Professionals Chair*
Patricia Varela
- Past SUT Chair*
Mark Siegmund
- Past SUT Chair*
Zenon Medina-Cetina
- SUT-TAMU Student Chapter Chair*
Connor Boze
- SUT-Prairie Student Chapter Chair*
Charles Stewart
- SUT-UH Student Chapter Chair*
Damilola Abe
- SUT-Rice Student Chapter Chair*
Issam Ben Moallem

US Branch

contd.

Networking Events & Other

Attendance

1. Virtual Networking Event - August 6, 2020: 18
2. Book Presentation Data Analytics for Engineering and Construction Project Risk Management - August 27, 2020: 15
3. Virtual Networking Event - September 3, 2020: 20
4. Scholarship Awards Ceremony September 18, 2020: 33
5. Virtual Networking Event – October 1, 2020: 18
6. Virtual Networking Event – December 3, 2020: 20
7. Virtual Networking Event – February 4, 2021: 5
8. Virtual Networking Event – May 6, 2021: 14
9. In-person Networking Event – June 3, 2021: 15



AGM

SUT US' Annual General Meeting was held on December 4th, 2020. During this meeting, the executive committee introduced the new elected board members:

- Sandra Jackl (Wood)
- Rodolfo Sancio (Geosyntech)
- Roger Osborne (Re-elected)
- Steven Johnson (Consultant)

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 2020/2021 year have included mainly webinars as listed below:

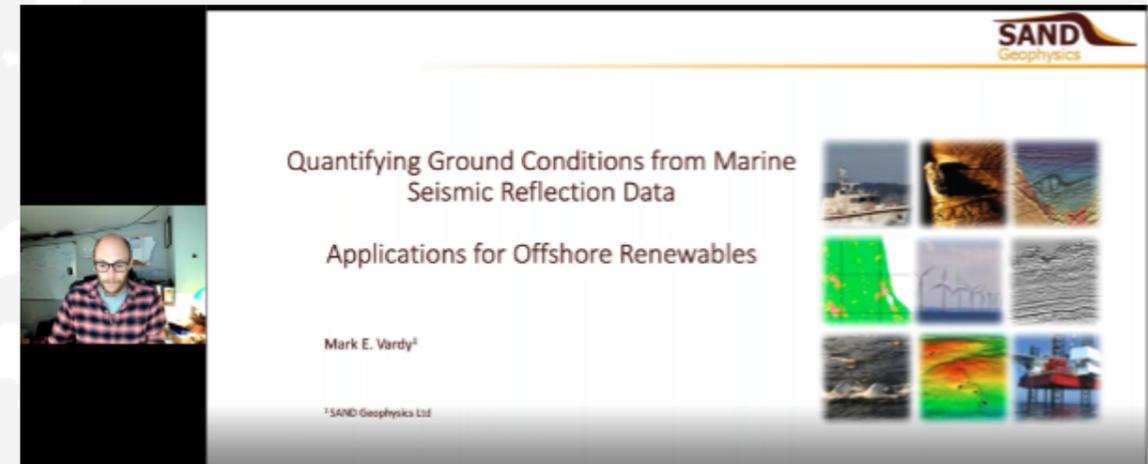
Learning Webinars

- November 19, 2020 – Gas Hydrates: Significance in Marine Site Characterization and Approach to Assessing Presence and Risk by Dan McConnell, Fugro
 - o Webinar attendees: 20
- December 11, 2020 - High-resolution digital surface modeling for geological insight from the deep blue sea to the largest volcano in our solar system by Dr. Bill Haneberg, Kentucky Geological Survey
 - o Webinar attendees: 11
- April 15, 2021 - Monitoring Top-hole Operations for Geohazards from Start to Finish by Richard Weiland, BHP
 - o Webinar attendees: 27
- May 20, 2021 - Submarine Debris Flow Impact on Pipelines by Arash Zakeri, BP America Inc.
 - o Webinar attendees: 25

US Branch

contd.

- June 24, 2021 - Quantifying Ground Conditions from Marine Seismic Reflection Data: Applications for Offshore Renewables Projects by Dr. Mark Vardy, SAND Geophysics
 - o Webinar attendees: 41



Upcoming events:

- October 20, 2021 – Webinar Integrated Jack-up Rig Foundation Issues
- November 4, 2021 – Webinar the First Source to Sink Measurements of Turbidity Currents: New Insights for Seafloor Infrastructure

OSIG's School Touring Sub-committee has been paused since the beginning of the pandemic. As schools start to re-open this year, the Sub-committee is looking into the possibility of resuming its school visits and/or looking for alternative ways to provide presentations to students (i.e., Youtube). Some of the STEM presentations delivered are: Roving Robots, Geology Rocks, and Are we There yet?

SEO Committee

The Subsea Engineering and Operations Committee (SEO) has transitioned to SEO Atlantic. Its membership includes 30 individuals from the US, Canada, Mexico, and the UK: Texas A&M University, NOV, TechnipFMC, McDermott, Wood, CIGoM, 2H Offshore, Subsea7, Intecsea, Saab Group, Husky Energy, Dominion Diving, Double Engineering, Angler Solutions, Fugro, Cyprus Hydrocarbons Company,

SEO Atlantic is meeting monthly with technical presentations and discussing about potential learning programs.

Group on Environmental Forces (GEFUS)

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

Learning Luncheons, Webinars, Courses & Conferences

- October 22, 2020 – Eyes in the Deep Ocean – Webinar for Texas A&M Student Chapter by Jan van Smirren, Ocean Sierra LLC
 - o Webinar attendees: 30
- March 31 – April 1, 2021 - Marine Autonomous Systems Virtual Technical Conference & Exhibition
 - o Webinar attendees: 50
- April 27, 2021 - Expanding the availability of Oceanographic Data in the Gulf of Mexico by Bruce Magnell, Woods Hole Group, Inc. and Jan van Smirren, Ocean Sierra LLC
 - o Webinar attendees: 24

US Branch contd.



Robotics and Automation Committee

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

Upcoming learning programs will focus on panel discussions on policy issues, standards, or key challenges in robotics and automation and strategies to address them.

Marine Renewable Energy Committee

Steve Johnson, retired Chevron, Chairs the Marine Renewable Energy Committee (MREC). Individuals from the following organizations committed membership: Geosyntech Consultants, Texas A&M University, University of Houston, Wood Group, Prairie View A&M, Siemens, Fugro, Subsea7, Power Engineers, Element, Chevron, JDR Cables, Integral Consulting Services, and BP.

Learning Luncheons, Webinars & Courses

- October 7, 2020 – Testing Expertise and Access for Marine Energy Research Program
Webinar attendees: 37

Upcoming learning programs:

- October 19, 2021 – Work Scopes and Vessels needed for Offshore Wind O&M by Siemens Gamesa

Education Committee

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

The 2020 scholarship recipients were recognized during the Scholarship Awards Ceremony on September 18, 2020. The selected students by the Scholarships Subcommittee were:

- Ruby Schaufler, Oceanography, Texas A&M University
- Tara Rae van Niekerk, Coastal Resources Management, East Carolina University
- Guillermo Duran, Geotechnical Engineering, Texas A&M University
- Jack Cadigan, Civil Engineering, Louisiana State University
- Agno Rubim de Assis, Hydrographic Science, University of Southern Mississippi
- Oladeji Quadri Siyanbola, Physical Oceanography, University of Houston

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

US Branch contd.

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.



Young Professionals Committee (SUT-YP)

Learning Luncheons, Webinars and Networking Events:

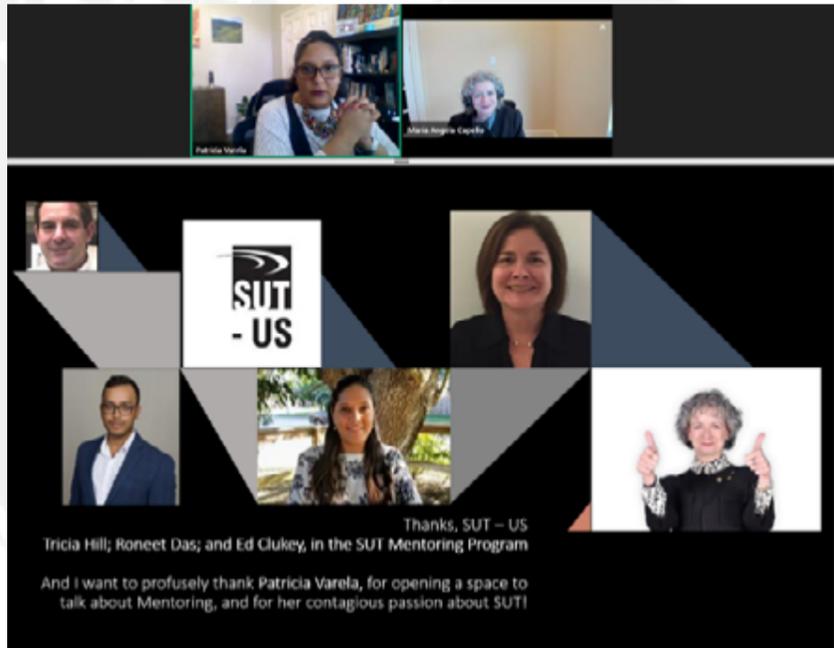
- October 28, 2020 – Webinar Delivering a sustainable low-carbon energy future from offshore renewables by Steve Hall, SUT Former CEO
Attendees: 21
- January 12, 2021 Webinar Autonomous Survey Vehicles: Where we are and where we are going by Christopher McHugh
Attendees: 23
- March 2, 2021 – Webinar Digital Data Platforms: A new Way of Working in Oil and Gas Industry by Sachin Mathakari, TechnipFMC
Webinar attendees: 17
- May 28, 2020 – Webinar A Renewed Outlook on Renewable Energy: Foundations, Installation, and Future Trends for Offshore Wind in the US by Dr. Victor Taboada, Fugro
Webinar attendees: 55
- April 13, 2021 – Webinar Maximizing the Benefits from a Mentoring Program
Webinar attendees: 20

US Branch contd.

The SUT-YP have remained active throughout the past years supporting SUT-US fundraising efforts and its mentoring program.

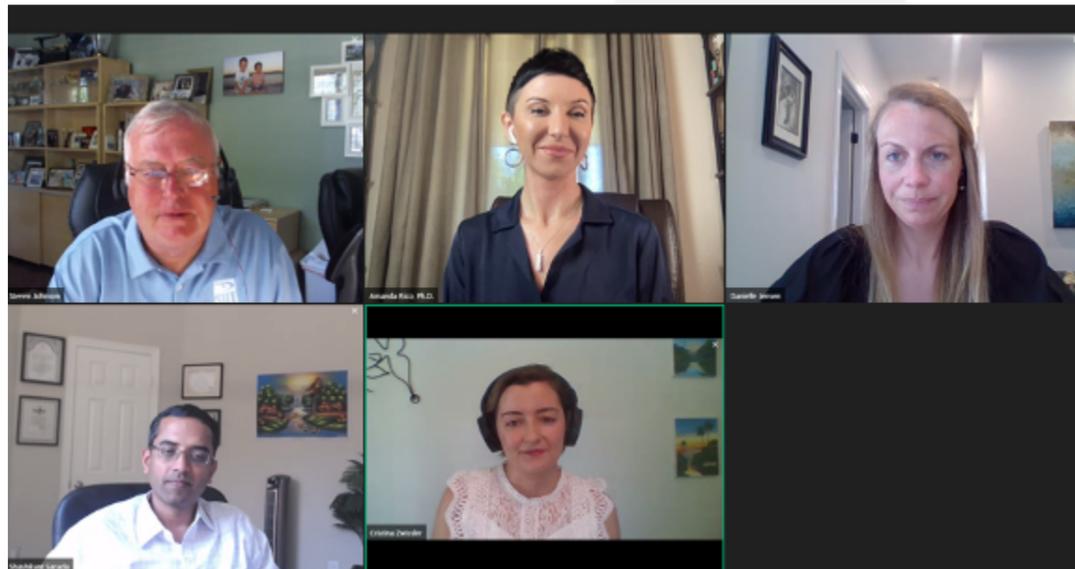
Women in Industry

The SUT-US Women in Industry Subcommittee (WIND) task force was created to cultivate awareness on inclusion, diversity, mentoring and leadership directly from academia and industry professionals. Its goal is to engage men and women equally through the Champagne & Conversation Series, a platform to learn about how the industry has changed over the past years in terms of diversity and inclusion by gathering senior level professionals as well as young professionals from the offshore energy industry, to talk about their experiences and share their experiences and advice for future industry leaders. WIND is currently led by Luz Zarate, Physical Oceanographer at RPS, and complemented with membership from Chevron, Stress Engineering Services, GEMS, Intecsea, Geosyntech, and KBR.



Champagne and Conversation Series Events:

- May 6, 2021 – Edition 7- Transferable Skills From Oil & Gas to Renewable Energy -Attendees: 50
Link to event recording: <https://www.youtube.com/watch?v=blI5CJNdKZE>



US Branch contd.

Student Chapters

The SUT-US paused activities for 2020-2021 given the conditions of the pandemic. It was difficult organizing events and recruiting membership.

Due to financial limitations, the Branch was not able to provide sponsorships to the Student Chapters.

Efforts will be undertaken to help the Student Chapters revamp their activities, and the SUT-US is looking for sponsorship opportunities from companies and universities' alumni.

The student chapters' sponsorships help the student communities organize seminars, workshops, meetings, community service activities and competitions throughout the academic year.

In addition to renewable energy, the SUT-US Chair and President, Tricia Hill, envisions the Branch future including virtual meetings as appropriate. Live Learning (workshops and webinars) may remain for a long while. It is a low-cost way to reach more people, particularly people from out of town. The consensus is that hybrid platforms do not provide an equally engaging and satisfying experience for all involved, therefore we expect to have either all virtual or in-person only events.

As for the future of SUT, we see much interest in offshore renewables. Offshore renewables is a broad topic that spans several of our technical committees including OSIG, SEO Atlantic, as well as our newly formed MREC committee. While the subjects vary from seabed preparations in the OSIG committee to carbon capture in the SEO Atlantic committee to supply chain in the MREC committee, the central theme of offshore renewables, particularly fixed and floating wind, are generating more and more interest. We also have recent engagement with academia on the subject including how to transfer traditional offshore O&G skills to offshore renewable jobs. With the downturn in O&G and the uptick interest in offshore renewables, we have started to look at how to help our membership make the career transition and see more clearly how to map their skill set and how to talk about it in a job interview. For perspective, the US goal is 30GW of renewable energy in 2030. The USA currently has 0.032GW of renewable energy in the national grid. Ninereenrenewable projects in review, all totaling 19GW. Source: Amanda Lefton, BOEM Director.



West Africa Branch

www.sut.org/branch/west-africa



David Agazuma

Committee

Branch President

David R. E. Agazuma

Chair Prof. Francis

Ifeyin 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

Like most businesses around the world, SUT West Africa branch activities were adversely impacted by the Covid-19 Pandemic. As always, the safety and wellbeing of our people were the top priorities of the local branch, and we reacted swiftly to implement new ways of working to accommodate the logistical and operational challenges. Our local branch adhered to strict quarantine and testing regimes, while our official meetings exhibited good working practices to satisfy local regulations for social distancing.

These precautions came at a financial cost, but we continue to develop new initiatives and reach out to members while safeguarding the health and safety of our people.

The Branch's relationship with educational institutions of higher learning continues to be strong, with plans to create the Fuel Cell and Hydrogen Technologies special interest group (SIG) in conjunction with Covenant University and the University of Ghana.

The SIG will bring together a group of experts that would consider all technical and safety matters relating to hydrogen, including the environmental impact of the construction and use of hydrogen installations, transmission, distribution, measurement, and utilization. Our plans are to also work very closely with industries locally and internationally in order to effectively deliver the mandate of the committee as regards the generation of Renewable Energy, creation of Hydrogen Economy and the development of Fuel Cell Technologies:

Fuel Cell and Hydrogen Committee's Objectives and Priorities:

- Debate areas of common interest regarding health and safety, share safety alerts across the fuel cell and Hydrogen industry and develop best practice guidelines for its operations.
- Offer suitable references for public domain fuel cell and Hydrogen statistics.
- Introduce guidance and support to member companies regarding Safety Cases, HAZOP surveys and planning investigations.
- Provide expert input to the fuel cell and Hydrogen quality and regulatory debate.
- To agree technical work plans for the preparation or review of Technical Standards or Guidance.
- To prepare and when necessary, revise fuel cell and Hydrogen Series Standards.
- To review and adopt current European and British legislation and Standards, as well as International Standards, relating to fuel cell and Hydrogen. In addition to provide input through proper channels on draft legislation and Standards.
- To examine important fuel cell and Hydrogen related developments worldwide.
- To maintain an effective liaison with regulating authorities and other industry bodies concerned with the Fuel Cell and Hydrogen industry.

Nkiruka Helen Agazuma
Prof Kwasi Obiri-Danso
Prof Osagie Ighodalo
Prof Ukwuoma Okechukwu

Prof. Daniel Obikwelu
Prof. Onwona-Agyeman
Dr. Ahmed Galadima Aminu

West Africa Branch

contd.

- To stimulate knowledge and understanding all through the energy industry and provide training as required by industry. This may be through the Technical Panels, Working Groups, industry experts and training companies.
- To expand local knowledge in Fuel Cell and Hydrogen Technologies through the development and effective delivery of the master's degree programmes in Energy and Green Hydrogen Technologies, Fuel Cell and Clean Mobility Technologies, and Process Safety Engineering.
- To promote research and development in Fuel Cell Electric Vehicles and off grid Fuel Cell Micro power stations.

The West Africa Branch has continued its collaborative engagement with the University of Benin and KNUST Ghana to establish the Centre for Energy Transition & Mobility Technologies in Climate Change. The proposed centre is envisaged to become a dynamic research centre of excellence that will bring together the power of interdisciplinary research to bear on the climate crisis. The centre will be nationally known for its expertise in research, development, applications and demonstrations of clean energy and mobility technologies.

The initiative will build upon the University of Benin and KNUST decades of energy-related research, education, and partnerships from across academia, industry, government, and society to support the collective effort needed to bring about the transition to a low carbon energy system in Nigeria, Africa, and the world at large.

The centre will encourage the formation of renewable hydrogen economies that would offer solutions to many of the social, economic, and environmental issues faced by Nigeria. It will lay out a framework for its vision of the hydrogen economy in Nigeria.

Research Focus:

- Green and Blue Hydrogen Production
- Solid State Fuel Cell Technologies
- CNG/ICE Conversion Technologies
- Fuel Cell power and Electric Vehicle
- Carbon Capture, Storage and Utilization Technologies
- Green Port and Harbour Development
- Energy Transition Systems and Technology Development
- Energy Systems Governance, policies, and strategies
- EV Charging, CNG and Hydrogen Stations Design

The committee of the west Africa branch remains strongly enthusiastic, imaginative, and creative. We are strongly seeking more support and sponsorship from member organizations, industry, education and other learned societies, and we are optimistic about getting desired support as the world transit towards the actualization of net zero carbon emissions.

The branch will continue to pursue and encourage academic institutions and energy companies to sign up for SUT membership. Students at the member universities have also been encouraged to sign up for SUT individual membership in that they are the future players in the offshore and renewable energy technology arena

Education



Sue John

Committee
Chair Sue John

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

Sadly, the committee has not met during the reporting period July 2020 - June 2021. We hope to reconvene in 2022, and will be looking into ways the committee can deliver events on careers in the subsea industry, potentially paving the way for a career pathway information library.

The well-loved Christmas Lecture series seems to have ground to a halt, that does not mean that there is no will to run them. However, with the steady return of face-to-face events there could still be hope on the horizon that these popular events might return to London and Aberdeen.

The SUT now offers Marine Technologist Registration and Marine Science Registration. In December 2020 we were happy to announce the first SUT Chartered Marine Technologists -

- Tom Bennetts CMarTech of Sonardyne
- John Houlder CMarTech of Sonardyne
- André Rose CMarTech of IMCA

The **Marine Technologist Register** is open to everyone who can demonstrate the required high-level knowledge, understanding, and professional competence. There are many routes that can be measured to meet this standard, including a combination of academic awards, vocational qualifications, and experiential learning through work. Competence includes the knowledge, understanding, and skills that underpin performance.

Chartered Marine Scientists are professionals, who harness, exploit, manage, use or apply marine science in the pursuit of wealth creation and/or the provision of services in the marine sector. Chartered Marine Scientists are characterized by their ability to deal with complex issues, both systematically and creatively and can make sound judgments in the absence of complete data to develop solutions to problems and communicate their conclusions clearly to specialist and non-specialist audiences.

We encourage applicants and welcome those who would like to know more to go to www.sut.org/professional-marine-registration/ or to contact cheryl.burgess@sut.org.

Six years after it was first published, the 'Lobster Book' as it is fondly known, is still selling copies to young (and not-so-young!) people eager to learn about all things subsea. *Can a Lobster be an Archaeologist?* continues to inspire readers with stories written by SUT members and friends all about our fascinating underwater world. This year we heard the sad news that Bil Loth, the book's champion, and SUT President at the time of publication, passed away. We are ever-grateful to Bil for aiding us in inspiring and educating the next generation with this fantastic book.

International Training

Four very successful virtual courses have been delivered over the last year. All courses were well subscribed to and our expert presenters well-received. The courses also made an excellent money surplus for the Society. More are to be held in the new year with the possibility of new niche courses. These new courses obviously depend on the generous amount of time that our volunteer course developers can donate for the benefit of the Society.

Andrew Connelly and Emily Boddy continue to do an excellent job with the SUT podcast and remain a good point of contact for the possibility of new members. The podcast took a well-earned break over the summer, Andrew and Emily have been preparing plenty more episodes to take us up to the end of the year. Listen out for some really good conversations with Martin Sayer on Scientific Diving, Dave Shaw on the Underwater Stage at Pinewood Studios, Shruthi Sivadasan of SUT+, Michele Stanley of SAMS on seaweed research, and of course Aleksandra Tomaszek - the Gwyn Griffiths Underwater Robotics award winner!



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

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. Unfortunately, we are not resourced to be able to award funding to everyone who applies (over 30 applicants this year), but we hope to be able to grow the number of awards we make in future.

As two previously supported students completed their degree programmes, the Society was able to make two new scholarship awards. The recipients of grants from the Educational Support Fund are: Vanda Czene who will be studying Marine Biology with Oceanography at the University of Southampton and Erin Nicolson, studying Ecology and Conservation at University of St Andrews.

While 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 students from Texas A&M, Rice, and Houston universities for now, with others planned for the future. Perth (Australia) Branch also support scholarships. Our China Branch also hopes to support studentships in the next year or two.

Summary of Undergraduates graduated in 2021

University of New England
University of Plymouth

Summary of New/Continuing Undergraduates 2021-2022

Marine Science with Oceanography and Robotics - Scottish Association for Marine Science
Marine Science with Oceanography and Robotics - Scottish Association for Marine Science
Engineering Science - University of Oxford
Marine Biology with Oceanography - University of Southampton
Ecology & Conservation - University of St Andrews

International

The SUT's international committee met in March with former CEO Steve Hall taking on the duties of Chair, enabling Dr David Kirkley to stand down after over 20 years of service in the role. We thanked David, who continues to be a member of the committee, and welcomed Tricia Hill, new Chair of SUT-US and Steve Duffield Chair of Perth branch to the committee.

The committee members preferred to retain the name 'International Committee' rather than move to calling themselves Branch Development Committee as had been suggested by some members of Council, feeling that it reflected the heritage and role of the committee, but agreed that their remit does include ensuring that there is a consistent standard that Branches all over the world including the UK-based ones should follow, promoting the core science, engineering, technology, education and policy interests of the Society for Underwater Technology, in particular making sure that all Branches follow the highest standards of probity and ethical behaviour.

The Committee awaits a report from a sub-group of Council that is exploring how to fairly allocate resources and membership income across the global network, and supported the recommendation from Council Member Steve Johnson, and input from CEO Cheryl Burgess that we go ahead with the development of an Eastern Mediterranean Branch centred on Cyprus. We'll continue to support the efforts of our members in Canada to set up a Branch there.

The Committee accepted reports from all of the current Branches, noting that some have not met for a year due to the global Covid-19 pandemic, and by the time of the next meeting we hope to have heard updates from those who had gone into hibernation awaiting a return to a more normal world.

The Committee is keenly watching developments between SUT and the Marine Technology Society to see how the relationship evolves, and will support Council and the membership in delivering whatever future pathway the Societies choose to follow, initially via the mutual awarding of Chartered Marine Technologist status licensed from IMarEST for those of our members who choose to pursue professional accreditation.



Steve Hall

Committee Chair Steve Hall

David Saul
David Kirkley
Frank Lim
Tricia Hill
Jim Neffgen
Steve Duffield
Susan John
Laurie Ayling

Policy Advisory



Cheryl Burgess

Committee
Chair Cheryl Burgess

The SUT Policy Advisory Committee did not meet face-to-face in 2020/21 due to the global coronavirus pandemic; committee action and communications were impeded by changes of committee membership. Responses to enquiries from Parliamentary Committees, government departments, agencies and working groups were disseminated to special interest groups for comment and input.

Development of the new special interest groups have broadened the scope for SUT policy engagement in defence, offshore renewables, environmental science and protection.

The Society remains uniquely placed to provide a voice from our members and industry sectors as a learned society helping to inform and educate policy makers about the challenges, issues, solutions, innovations, research, aspects and state of the art underwater technology currently available and in development for future use during the coming decades.

If members are interested in joining the Policy Committee in 2022, please contact info@sut.org

Publications

The last issue of the journal Underwater Technology was published by the Society for Underwater Technology in March 2021. The decision to stop publishing the journal was based primarily on the financial position of the Society but the endpoint was perhaps inevitable considering the state of modern-day academic publishing and the ways in which academics are currently assessed. Multinational publishing houses have the resources to support and promote journals in ways that small, learned societies struggle to compete with. Academics are encouraged by employers and funding bodies to publish their research in topical or high-impact journals. Instant open access is now an almost universal requirement even though it can result in significant volumes of research funding going to publishers that make large profits. Whereas rejection from publishing in the higher impact journals used to result in high-quality research re-directing to lower impact journals, there is now the trend of journal “families” that trade based on the high-end family name allowing them to retain the output volume along with the concomitant publication fees. And then there is the impact from the evident corruption of predatory publications that contaminate and erode the academic basis of peer-reviewed publication while generating confusing but competing outputs.

The last issue can be accessed here: https://issuu.com/sut7/docs/underwater_technology_38.1

Volume 1, issue 1 of the journal was published in the spring of 1975; 46 years later, volume 38, issue 1 completed the series. I have been the editor of the journal since 2007 and have had the pleasure of working with some great people during that time, but with special mention to the assistant editors I have worked with recently: Mariam Pourshoushtari, Michaelagh Broadbent, Elaine Azzopardi and Emily Boddy. Although there is sadness with seeing the journal coming to an end, I am looking forward to having more time available in the evenings and weekends.

With the closure of the journal, the decision was taken to shut down the Society’s Publications Committee.



Martin Sayer

Committee
Chair Martin Sayer
Secretary Elaine Azzopardi

Emily Boddy
Michaelagh Broadbent
Prof Gwyn Griffiths
Dr Ralph Rayner

Defence



Nick Swift

Committee

- Chair Nick Swift
- Deputy Chair Roland Rogers
- Captain Ryan Ramsey
- Terry Sloane
- Keith Broughton
- Matthew Glead
- Ioseba Tena
- Alan Noble
- David Maclean
- Ian Danbury

Activities

March Webinar/Presentation

In March a webinar/presentation was held to present the SIG and what it can offer potential members. The meeting was attended by approximately 20 people, from a range of organisations including large prime contractors to SMEs. A questionnaire was sent to the attendees following the meeting to establish the activities that were most of interest; the results of which are shown in the chart below. The areas of most interest are technology based, including generation of white papers and technical workshops. Training and career development are lowest priorities

Ocean Business

The Defence Special Interest Group also chaired and presented a session of Ocean Business event. There were a number of presentation by SUT Defence SIG, which were:

Introduction to SUT Defence SIG

Nick Swift gave a brief overview of the Defence SIG and its planned scope.

Phorcys – An open and secure acoustic communication standard to enable multi-domain C4 in coalition maritime environments

The speakers for the presentation were Alex Hamilton of DSTL and Jon Davies, the senior technical consultant on the project. The presentation included a review of the recent work done on the open underwater acoustic communication system for the defence industry, including a technical description of the waveforms and the results of recent trials.

NATO Smart Defence Project Anti-Submarine Warfare Barrier

The presentation was given by David Burton is the Director of ASW Barrier Smart Defence Initiative (SDI) at NATO and covered NATO's initiative to build a viable ASW Barrier Technical Demonstrator (hold at risk) that is enabled by the Allied Underwater Battlespace Mission Network. It described how Maritime Unmanned Systems, working in conjunction with conventional manned assets will deliver underwater capabilities of the future.

Question and Answer Session

The workshop includes a question-and-answer session in which one the key themes was how users engage with industry. The Defence SIG will take this as an action to develop a mechanism for facilitating for such engagement.



Future Plans for the Defence SIG.

Now that life is somewhat returning to normal it is time to reinvigorate the SIG and there are some ideas and activities that will be pursued in the future. These include:

- Defence SIG area on the SUT website, including members only information repository
- Presentation at industry events, including:
 - o Under Water Defence and Security – May 2022
 - o Oceanology International (TBC) - March 2022
- Series of workshops

Committee

There are positions available on the committee, so please let me know if you are interested in being involved.



Nick Swift – Presenting the SUT Defence SIG at Ocean Business, Southampton in October 2021

Diving and Manned Submersibles



Martin Sayer

The Diving and Manned Submersibles Committee has not met in the past 12 months. The predominant cause was the Covid pandemic, but its activity has also been significantly impacted by the death of its chair, Dr John Bevan, in 2020.

It is hoped to reconvene the Committee in 2022 following a review of its structure and purpose.

Committee

Acting Chair Martin Sayer
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

Environmental Forces



Qingwei Ma

The SUT Group on Environmental Forces (SUTGEF) exists to advance and disseminate knowledge on the environmental forces that act on offshore structures. It is the aim of the group to encourage the advance and dissemination of knowledge in those aspects of the atmosphere and ocean which affect the design of offshore and underwater structures, or which affect offshore and underwater operations; also, the mechanisms by which these environmental factors produce forces on structures.

Adapting to the new normal, the SIG has held one online meeting on 25th with two presentations on wave energy by international researchers (Sweden and Australia). This was well-received and attended by 76 people. The SIG hopes to have another meeting in September 2021, whether this is online or face-to-face, or a mixture of both. We are focussed on issues related to offshore renewable energy, to be in line with Net Zero goal of UK and the world.

Committee

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Secretary AN Moore

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- R Addelee
- 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

- | | | | |
|---------------|----------------|------------------|---------------|
| Dr J Hamilton | Dr R Sheikh | Prof P Stansby | A Watson |
| Dr G Jeans | Dr E Spentza | Prof C Swan | W Tan |
| M Johnson | Dr J Spinneken | Prof P Taylor | R Webb |
| I Leggett | R Sproson | Dr P Tromans | Dr G Weymouth |
| Dr A Raby | Dr R Standing | T van den Bremer | Dr J Zang |

Marine Environmental Science



Katie Cross

Chair Katie Cross
Secretary Lucy Shuff
Events Secretary
 Nathan Formosa

Ainslie Casson
 Alison Brand
 Andy Matkin
 Cemlyn Barlow
 Cheryl Burgess
 Chris Poonian
 Damien Kirby
 Edward Wort
 Gareth MacGlennon
 Gary Nicol
 Ian Reach
 Ian Wilson
 Idongesit Ikpewe
 Isabelle Rundle
 Jack Poleykett
 Judith Patten
 Katrien Van Landeghem
 Matthew Davison
 Mick Cook
 Paul Collins
 Ross Bullimore
 Ross Compton
 Ryan Mowat

Sam Strutton
 Samantha Williams
 Samuel Stanton
 Sebastian Volkmann
 Stephen Johnson
 Ute Brönnner
 Vere Ross-Gillespie

As the seas and oceans of the world become increasingly used as a resource for a host of activities, more and more attention is paid to the environmental impacts of such use. So much so that the SUT established a new Special Interest Group specially for marine environmental science – the Marine Environmental Science SIG. The scope of discussion for the group is wide ranging, and the background, and location, of the current members is testament to this. We are however still open to new members, especially those with an environmental interest who work for operators and the regulators.

To date we have held five virtual meetings and are looking forward to holding the first in person meeting in Southampton, on 13 October 2021, a meeting which is coinciding with Ocean Business. To date the meetings have been focused on exploring environmental science topics of interest. Topics are suggested by members of the group. At each meeting we have had one or two expert guest speakers to introduce a topic. Their presentation has been followed by an open discussion. Marine Environmental Science topics to date have been eDNA sampling and analysis, deep sea mining and Marine Protected Areas. The topic for the next meeting is 'Elephants, seaweed, worms and satellites' which is to be followed by a discussion on the subject of our current energy landscape.

Moving forward we are aiming to hold a virtual/face-to-face meeting every quarter. By exploring different topics, we hope to identify problems/difficulties within the marine environment and begin to identify solutions which help facilitate us all having a positive impact on the marine environment. There is overlap between the issues and discussion subjects that the members of the MES SIG wish to discuss and develop and we are all therefore looking forward to explore any synergies with other SIGs.

Marine Renewable Energies



John Sharp

Committee
Chair Prof J Sharp
Secretary C Burgess
Clerk E Boddy

D Ayling
 N Bennett
 D Brookes
 K Buckle
 S Cheeseman
 J Colby
 P Davies
 P Fraenkel
 J Grant
 J Griffiths
 C Hanly
 J Hulm
 G James
 S Johnson
 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

The Committee has continued with its usual meetings online with higher attendance due to the need not to travel to London. There has been a speaker at each meeting which has included presentations on OTEC (ocean thermal energy), the Orbital Marine Power O2 tidal energy device, Ocean Power Technologies (wave energy) and Bombora (wave power; and also wave power integrated with floating offshore wind (FOW)).

A report was tabled on non-grid applications of marine renewable energy at the April meeting, with four in progress and a further 13 at the concept or prototype stage. These included production of green hydrogen, desalination and powering oil and gas platforms.

A particular significant event in the last year has been the initiation of the US MREC and there has been input at each UK meeting from its chairman. Two members of the UK committee have also joined the US meetings online. It is encouraging to work with the US Committee as they build up their expertise.

During the year the committee had responded to two different UK consultations. One being the BEIS letter looking for new technologies to be involved in the capacity market, and the other being from the Environmental Audit Committee on tidal range and tidal stream.

The committee reviewed its annual plan at the beginning of the year and highlighted some areas where little progress had been made. This included the need to review the text on the careers part of the SUT web site on marine renewables which was recognised to be out of date and not reflecting the rapid progress that has been made in this field in recent years. This is now in hand.

Considerable progress has been made in floating wind which is now part of the committee's portfolio and is discussed at each meeting

The Lennard-Senior prize for 2020 was presented at the SUT AGM meeting instead of at All-Energy which was postponed due to Covid. The winner was Simon Cheeseman from the Offshore Renewable Energy Catapult.

Offshore Site Investigation and Geotechnics



Neil Morgan

Committee
 Chair Neil Morgan
 Secretary Tim Carrington

Peter Allan
 Ricardo Argiolas
 Jon Arthur
 Paul Baggaley
 Mike Baker
 Andy Barwise
 Andrew Benson
 Emily Boddy
 Scott Boyce
 Michael Brown
 Nigel Carey
 Eric Cauquil

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. In September we had our first meeting with physical attendees and a high online attendance. The key highlights of the past year are summarised below.

Organisation of Committee

In the September 2021 meeting it was agreed that we would reorganise ourselves to be considered as a Special Interest Group. Given the continuing interest in membership and ever-growing list of members it seems more appropriate that OSIG retains a smaller executive committee to attend to administrative matters and concentrate the quarterly meetings on technical matters and industry networking. Smaller working groups will be formed to address particular topics or discussions. We will shortly begin the process of forming an executive committee and working with the new structure.

Short courses for industry and students

A physical event on the theme of “Energy In Transition and the Impacts for Site Investigation and Characterisation” went ahead in Newcastle in September 2021 with over 110 attendees including speakers and sponsors. It was great to see this event go ahead and be so well attended and, with the ongoing COVID situation, the success was down to the hard work and persistence of the organisers.

The annual one-day course for Master’s students at Imperial went ahead in the online format and had over 100 attendees.

Preparation for an online short course to be held in November 2021 is well underway and this will present similar topics to the previously successful two-day courses. The delivery of material will be supported by worked examples to ensure audience engagement and learning.

OSIG Conference

Planning work for the OSIG conference has continued with the development of

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

Offshore Site Investigation and Geotechnics *contd.*

conference themes, a scientific committee and keynote speakers in the process of being identified. The conference will take place in London from the 12th to 14th September 2023 with an announcement early 2022. Sponsorship will be a key factor to a successful conference and the process for obtaining sponsorship will soon begin.

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 early 2022. The document presents a considerable update to the previous version published in 2014 and the update is in the final draft stage. We also hope to arrange a physical launch event once the document is ready.

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’

Closing comments

The OSIG committee has continued to work hard on the short courses and guidance notes. It is hoped that physical meetings can continue to ramp up and that online participation in these will continue to be possible.

Salvage and Decommissioning



Moya Crawford

After another successful year of monthly meetings in the Decom and Wreck Removal (D&WR) sub-committee, with continued growth in numbers and interest; and concurrently with the opening of the D'Arcy Thompson Simulator Centre (@D'Arcy) at the University of St Andrews; and also a re-vamping of the Sensors and Platforms Forum in the Marine Alliance for Science and Technology Scotland, with which we work closely, the decision has been made to restart the Marine Salvage and Emergency Subsea Response sub-committee, in order to improve interaction across the marine space. The themes of innovation and technology will be shared equally across the two sub-committees. This is considered to be a very important step in the light of increased focus across all sectors on sustainability, responsibility and ecosystem impact.

A key development has been the formation of the X-COM Working Group, led by Dr Alison Brand. This specialist interest group (sig), within a Specialist Interest Group (SIG) focuses on the use of explosives in the marine space as a cutting technique. Its remit is to create a set of open consistent and transparent metrics to benchmark the respective efficiency and ecosystem impact of various cutting options, taking a holistic, lifetime approach, and time and place into consideration. A focussed effort has been made to achieve a good working interface with the Unexploded Ordnance (UXO) SIG and the Marine Environmental Science (MES) SIG, both of which are also newly formed, with members from the Decom and Wreck Removal sub-committee sitting on both.

In terms of the impact of COVID, the annual SUT/MASTSSalvage, Decommissioning and Wreck Removal workshop was held on 8th and 9th October online using the HOP-IN platform; the latter being very ably organised by MASTS' Hanna Ladd-Jones. The theme for 2020 was, 'Informing Global Sustainability Challenges' and the event was well-attended; with the benefit of a virtual meeting being that speakers and attendees who would not normally find the time to travel to Glasgow, being able to attend. This included a significant number from abroad. Paul Wheelhouse, Minister for Energy, Connectivity and the Islands, for the Scottish Government gave the keynote address and Laura DeLaTorre, Deputy Secretary, OSPAR opened the Friday morning session, giving an overview of its strategy. Highly sensitive subjects, such as 'rigs to reefs' and the use of explosives were discussed and we even ventured into space with a presentation on 'A holistic, ecosystem impact approach to satellite launch and rocket recovery, by Alan Thompson, Government Affairs, Skyrora.

We would very much like to thank Sponsors, Waves Group, Invest in Fife and CessCon for their continued support of the Workshop, as the money they donate literally helps us to bring people with an interest in the underwater marine space together – a key measure of success for the Society, as a whole.

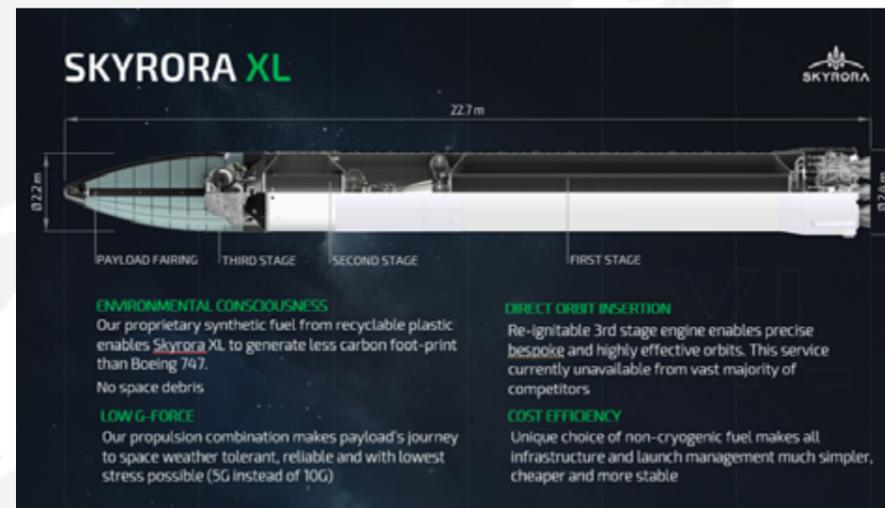
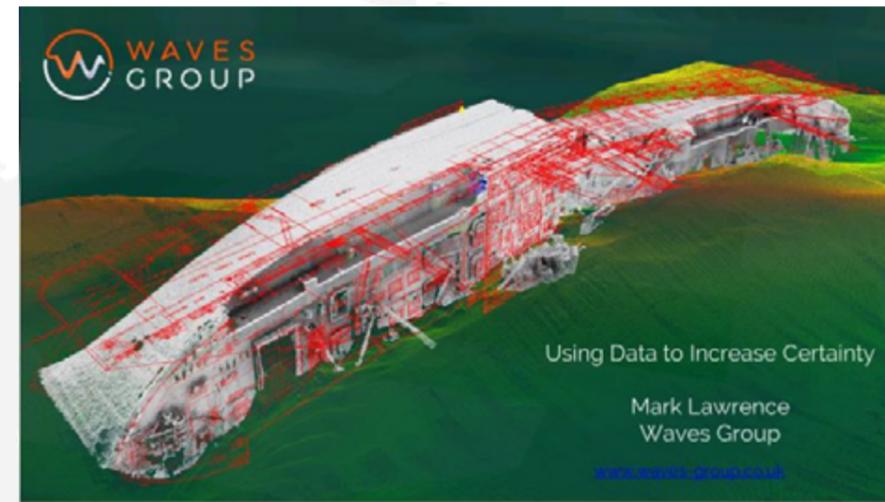
Looking forward, the SPE Offshore Europe exhibition event planned for September 2021, where we have been invited to hold a session in the Decom Zone, has been postponed until February 2022.

Committee
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 Chair Karen Seath
 SUT CEO Cheryl Burgess
 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.*



International Underwater Vehicles and Robotics Group



Neil Bose



Mario Brito

For the SUT/ECOR Panel on Underwater Robotics, our online meetings have continued twice yearly through the pandemic, although we missed the chance to meet face-to-face at the IEEE OES AUV 2020 conference hosted by Memorial University from 30 Sep-2 Oct, 2020. Our meeting was held alongside the conference on 28 September 2020 and was open to all conference attendees. The Chair, Dr. Mario Brito, Co-Chair, Dr. Neil Bose, and 16 attendees from the UK, USA, Canada, Norway, Australia, and Portugal met to discuss the advancement in AUV technology and the republishing of the Polar AUV Best Practices Guide. We met again on 31 May 2021 where we attempted to expand our group by inviting younger AUV professionals and researchers leading to new participants from Singapore, Sweden, and China.

The SUT Polar AUV Guide website is now ready to be linked to the SUT website as we expect more hands-on AUV Case Studies from our members. We recommended to SUT Council the first winner of the Gwyn Griffiths Underwater Robotics Award (GGURA 2021) which aims to recognize people in the early to mid-stages of their career who have made outstanding contributions to their field in underwater robotics. GGURA 2022 is now open for nominations and will be awarded later in 2022. You can submit a nomination via the SUT website at www.sut.org/gwyn-griffiths-underwater-robotics-award-ggura/. We also initiated a speaker series of various marine robotics related topics ranging from operations, designs, and field trials. Our next meeting will be held virtually later in 2021. We are planning to meet face-to-face again in Singapore at the IEEE OES AUV 2022 conference.



Bo Thanyamanta

Future Direction

- Continue to include the option to meet virtually to ensure we maintain a true international engagement.
- Continue to add to the diversity of our members.
- Focus on increased diversity in the nominations for the GGURA.
- Track the future latest developments in underwater robotics.

- Committee**
 Chair Neil Bose
 Co-Chair Mario Brito
 Secretary Bo Thanyamanta
 SUT CEO Cheryl Burgess
- Luke Alden
 Brian Claus
 Nathan Ehrenholz
 Shuangshuang Fan
 Alex Forrest
 Gwyn Griffiths
 David Hopkin
 Alex Johnson
 Chris Kaminski
 Bill Kirkwood
 Florie Mancel
 Richard Mills
 Alex Phillips
 Supun Randeni
 Rolly Rogers
 João Sousa
 Ivan Stenius
 Maxine von Eye
 Anna Wahlin
 Bungy Williams
 Jingjing Xu
 Wen Xu
 Yanwu Zhang
 Fumin Zhang
 Ting Zou
 Mingxi Zhou

Unexploded Ordnance (UXO)

The inaugural Unexploded Ordnance (UXO) Special Interest Group (SIG) was held virtually on 5th February 2021. The SIG was set up after approaches to Mick Cook from several personnel working in the offshore wind industry who expressed concern about the inconsistency in approach to UXO issues within this burgeoning sector. The primary intent of the SIG is to identify and to address such issues and to eventually seek to provide guidance and education to practitioners.

Initial membership has been confined to offshore windfarm developers and representation is provided by Orsted, Tennet, Shell, SSE, Vattenfall, Innogy (RWE), Energinet, Equinor, Scottish Power, Amprion, EDF, BT and Guernsey Electricity. At an appropriate point in the future, membership will be opened-up to all stakeholders.

The SIG is very much an international group including representatives from the UK, USA, Norway, Denmark, Germany, France and The Netherlands.

Since February 2021, we have held four very successful online meetings with 10-15 people in 'attendance'. At each meeting we have had presentations from members on a range of topics and each meeting has had 2+ discussion topics.

We are currently in discussions with two other SUT SIGs - Defence and Decommissioning - about how we can share knowledge.

We have just begun planning a full-day workshop open to all that we hope to run in conjunction Oceanology International in March 2022.



Mick Cook

- Committee**
 Chair Mick Cook
 Events Secretary
 Dorthe Reng Erbs-Hansen
- Andy Barwise
 Kevin Clements
 Eric Cauquil
 Sally-Ann David
 Anja Drews
 Michael Hahn
 Lucy Malou Henningsen
 Christian Herrisson
 Richard Hill
 Simon Hviid
 Deanne Hargrave
 Benoit Jouy
 Rasmus Juncher
 Andrew Kirkland
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