



Annual Report

2014-2015



Society for Underwater Technology

Annual Report 2014-2015

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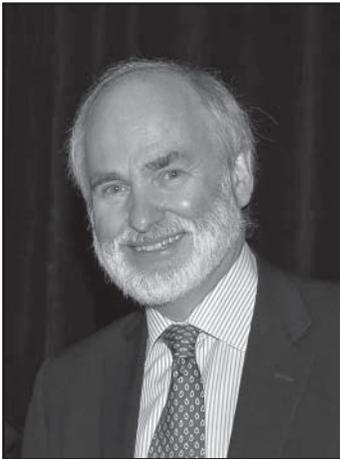
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President's Foreword



President
Prof Gwyn Griffiths

Fifty years ago there was no Society for Underwater Technology. In August 1965, the first commercial discovery of gas was made on the UK continental shelf off East Anglia. Four years earlier, the first subsea well had been drilled in the Gulf of Mexico, and by 1965 there were some 1000 platforms producing over 100 million barrels of oil that year. Most were in less than 100 feet of water. The mercury reversing thermometer and the water-bottle were still front-line tools of the physical oceanographer. Against that snapshot of the times the SUT came into being, in 1966.

Our Society was founded out of the demise of the UK-based Underwater Equipment Research Society. Its scope had been laudable but rather limited, dedicated as it was to the 'interchange of information between users and suppliers of [undersea] equipment'. Today, the SUT's overall strategic intent is broad, yet with a clear purpose, 'to promote the sustainable development and dissemination of information and technology arising from or related to the underwater environment'. If the last fifty years can be characterised as being an era when we began to truly understand the impact on our planet of our multitude of activities, the next fifty years will need to be an era of concerted action towards sustainable development.

Notable anniversaries can provide the spur to reflect on achievements, but I'm a great believer in using anniversaries to look forward, while keeping in mind how and why progress was achieved in the past. Serendipity, or a brilliant individual, may still, on occasion, lead to a breakthrough. But it is far more likely that, given the complexity and multidisciplinary nature of the challenges we face, advances will come from people working together, across the globe.

The changes to the Society's Articles of Association, passed unanimously at the Extraordinary General Meeting in June 2015, have at their heart the intent and the means to ensure the SUT is one, global, Society in its governance, in its mission, and in how it works day-to-day. SUT50 - a flagship technical conference and exhibition being planned for late 2016 will celebrate the 50th anniversary of the Society. The event will review current developments and new technologies. Importantly, the conference will look into the future, to tease out how the collective membership of the Society can contribute to ensuring exploitation of natural resources while ensuring minimal environmental impact.

To focus on one example, over the coming decades the Arctic region, with its known reserves of offshore hydrocarbons, fragility of iconoclastic ecosystems and physical environments, and potential to become a new world trade route, will provide enormous challenges to the goal of sustainable development. Numerical simulation models or extrapolation of recent data suggest that during the next 50 years the Arctic will become nearly ice-free in summer. As in many areas of global change, it is less a matter of if, but a matter of when. Technologists and scientists, industry and academia, will need to work ever more closely to ensure society benefits from responsible exploitation, while minimising the risks, to the environment, to ecosystems, and to indigenous people.

The true scale of the technological developments delivered over the last five decades by the offshore industry has not really sunk in with the public. A well-argued Personal View in our journal *Underwater Technology* this year makes the case for applying a number of these underwater technologies and techniques for the pro-active remediation of climate change – in effect creating a new industry. Past experience by this community shows that the technology could be delivered, but what of the political and economic aspects? Perhaps I'll hear more of those at the SUT50 conference next year.

More than ever, this year I've seen the tremendous hard work and dedication of our staff in the UK and overseas during a year of real development as an international Society. As a learned Society, we depend on volunteers, whether serving on committees or Special Interest Groups, or reviewing papers for our journal – my thanks to all.

Council's Summary of Activity 2014-2015

Membership Summary		
Corporate Members	184	
Individual Membership		
Category	2015	2014
Hon. Fellows	19	19
Fellows	97	96
Individuals	1,077	1,064
Associates	35	44
Students	122	123
Corporate individuals	1,073	1,065
Total	2423	2411

Table 1

Financial Summary Unrestricted Funds (£)		
Category	2015	2014
Income	743,883	943,058
Expenditure	789,907	908,811
Surplus/ (deficit)	(46,024)	34,247
Transfers to restricted fund	(24,336)	(24,431)
Gain/(loss) on investments	9,280	6,510
Retained surplus/ (deficit)	(61,080)	16,326

Table 2

Membership

The membership of the Society at 30 June 2015 compared with the previous year is summarised in Table 1. Despite a downturn in the offshore oil and gas industry occurring in the latter half of this year, membership numbers are very similar to those of last year in both the individual and corporate categories. This is due to branch activity, both overseas and in the UK.

Finance

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

The Unrestricted Fund at 30 June 2015 amounted to £624,640 compared with an amount of £692,693 at the end of the previous year, allowing for gains on investments.

Educational Support Fund

A report for the year ending 30 June 2015 from the Educational Support Fund Management, together with a copy of the audited Accounts of the Fund, amalgamated as 'restricted funds' within the main account, is included in this Annual Report. This year, expenditure of the fund exceeded income by £13,726, compared with expenditure exceeding income by £251 in 2013–2014. This led to a net change in the capital funds for the Educational Support Fund from £254,648 in 2014 to £240,922 in 2015, when gains on investments are taken into account.

Auditors

A resolution for the re-appointment of auditors will be proposed at the forthcoming Annual General Meeting.

By order of Council

D. Jordan

Honorary Secretary

24 September 2015

Registered Office: 1 Fetter Lane, London, EC4A 1BR, UK.

Chairman's Report

2014/15 has seen the Society for Underwater Technology at a cross roads. Having been essentially a UK-centric organisation since its formation in 1966, the time had come to truly internationalise the organisation. Although the Society has developed a number of highly successful overseas Branches, it was laid down in the Articles of Association that only members with a UK residency could stand for membership of Council. This was obviously no longer appropriate for an organisation with some 48% of its membership residing outside the UK. What needed to be done and how to make the transition was the theme for the third biannual Chairmen's meeting held in London in December 2014. To become truly global has required some fundamental changes to the governance of the Society. The first step has been to undertake a complete review, with the appropriate professional input, of the Articles of Association to allow the Society to democratically function on an international basis. At the same time the opportunity has been taken to bring the Articles of Association more into line with how the Society operates today. The new Articles of Association were circulated to all the Branches for comment prior to being put to the voting membership for adoption at a General Meeting held in London on 25th June 2014.

This meeting was a milestone for the future development of the Society as any member resident anywhere in the world now has equal voting rights including the opportunity to stand for election to Council, something previously limited to members who were UK residents.

To meet the challenges of a global society changes need to be made to the way the Society is organised and how it conducts its business to provide maximum value for its individual and corporate members. The proposals emanated from the Chairmen's meeting and have been the focus for Council during the last year and are summarised below.

Council

The opportunity to be elected to Council needs to be available to all members of the SUT wherever they reside in the world, and this will be implemented at the forthcoming AGM in December. To make this feasible, adequate video or teleconferencing of meetings is essential and venues for key committee meetings, and Council meetings have been reviewed to ensure adequate facilities are available.

During the past year Council has successfully used teleconferencing to allow selected overseas Chairmen to participate in Council meetings in their ex-officio role. This has been a challenge, not least because of the diverse time zones between Houston and Perth. I would like to thank those Branch Chairmen for giving of their time beyond the normal call of duty. To assist in the efficient use of time, a set of expectations for mandatory reporting by all Committees of Council, Technical Committees and Branch Committees on a quarterly basis is to be introduced to ensure that Council is fully informed ahead of the meeting. This will also help keep the website up to date. A new Business Plan for 2016–2021 is required to take the Society forward, and a lot of what was discussed at the Chairmen's Meeting will be embedded in the plan. In the new age of globalisation, the plan needs to reflect the wishes and needs of the branches to enable Council to monitor our progress.

Committees of Council

The next step is for Committees of Council to be expanded as soon as possible to include appropriate representation from the overseas branches and the Chairmen of the International, the Education and Training, and the Publications Committees have been tasked to talk to the Branch Committees to seek nominations for Committee membership and make this happen. These Committees will need to review their activities in the light of internationalisation. The future role of the Policy Advisory Committee has also been



*Chairman of Council
Peter Metcalf*

...continued overleaf

Chairman's Report

continued...

reviewed by Council with the outcome that a Chairman, appointed by Council, will convene an appropriate Committee when deemed necessary by Council or the overseas Branch Chairmen.

On the Education and Training front, the Society offers a number of student bursary schemes around the world, and it is timely to review the scope of these schemes to develop best practice going forward. In particular, the future scope of the ESF needs to be reviewed in view of the increasing difficulty in attracting external funding. There are also many examples of good practice of what the SUT should be doing to support schools and career development at a local level and this should be shared for the benefit of all.

Council has convened a small Finance Committee to provide oversight of the governance of financial matters within SUT. This is in response to a recommendation made by the auditors last year, which highlighted that the significantly increased turnover of the Society in recent years should warrant more robust management. As this would be specifically in support of the UK accounts, this would be a UK committee. However Council recognises that the distribution of funds between headquarters and the Branches needs to be reviewed as a matter of urgency.

Technical Committees

The Technical Committees have been the lifeblood of the Society with each committee growing organically over the life of SUT. Some committees are very focused in their activities whilst others cover a very wide range of interests. In some areas there is a degree of overlap between committees, and there are some areas of underwater technology which are not covered at all. It is felt that the time has come to review the remits and scopes of each committee together with the way they are organised.

To provide a common approach to organisation it is proposed that each technical interest group would have a committee and, in some cases, regional or functional sub-committees. For small diverse groups it might be appropriate to have everybody on the committee. For larger, more focussed groups it might be that there is a committee, not necessarily UK or London based, chosen from the wider technical interest group to provide a focal point for technical activities. In some cases this committee may elect to set up regional sub-committees in association with a local branch. Council has a vision to facilitate the sharing of technical presentations on a global basis and, to ensure the future scope and content of SUT courses, it is proposed that more dialogue be held between Technical Committees and the Branches.

At present most members join the SUT with a single technical interest group in mind and rarely become involved in more than one area. As you can see from the following Technical Committee reports, the Society has much to offer across the broad spectrum of Underwater Technology covering all aspects from deep water oil and gas, through environmental forces and underwater sciences to renewable energy and salvage and decommissioning. I would urge all members to take the opportunity to become more directly engaged with the broader activities of SUT, both at the Branch level and within the technical interest groups. If members would like to take advantage of these they should contact the Technical Committee Chairmen or Head Office who will be happy to add you to the appropriate lists.

Membership growth has been fairly static over the last year with a small drop in individual members but with Corporate membership at its highest ever. There has been a turnover of both individual and Corporate members with most of the new members coming through the branches. Of particular note has been the upsurge of interest from student and young engineers following initiatives in Houston, Perth and Aberdeen. During the past year the London and South of England Branch has established a local SUT+, modelled on the successful Aberdeen SUT+, as a focal point for students and young engineers. I would encourage all the branches to look at opportunities to provide similar local initiatives to further the interests of the Society among students and young engineers. They are our future members and will guarantee a long future for the Society.

Chairman's Report

continued...

One of the initiatives stemming from the Chairmen's meeting is to allow larger overseas Branches to vet their own membership applicants under basic guidelines laid down by Council with any final arbitration lying with the Executive Committee. This will speed up the application process and provide the Branches with the opportunity to target appropriate groups in their locations.

The worldwide spread of the Society continues to grow, with established overseas branches in Houston, Rio de Janeiro, Perth, Melbourne, Beijing, Bergen and, most recently, Singapore. Future geographical expansion opportunities continue to be explored, with new branches at various stages of development, in particular Halifax and Nova Scotia. In the UK, Aberdeen continues to go from strength to strength with the North of England Branch based in Newcastle and the London and South of England Branch now firmly established.

All the Branches have been very active with local events, details of which follow in the branch reports. The mainstay of branch activities remains the technical presentations and courses, many of the awareness courses now being tuned to meet local requirements. One notable initiative is that the Perth branch is looking at the possibility of providing formal professional accreditation for subsea engineers in Australia. In the UK, the Register of SUT Accredited Subsea Engineers has been in existence for many years but was never intended to be on a par with Chartership.

Financially, 2014/15 has been a difficult year with revenue from the Society's various awareness and acquaintance courses being seriously impacted by the worldwide downturn in the oil and gas industry. Whilst the revenue has sharply decreased, the associated expenditure has not decreased by the same percentage due to many of the expenditure commitments being made at a very early stage of event planning. Revenue from membership fees has remained constant as has the income from the *Journal* and other publications. General expenditure has been admirably controlled given the difficult circumstances.

The net operating deficit for the year 2014/15 on the unrestricted funds was £46,024. After deduction of restricted fund ESF grants and gains on investment assets, a net deficit of £74,806 has been posted. The Society has, over the profitable years, accrued sizeable reserves to cover such eventualities as this. Whilst the Society remains in a strong position with comfortable reserves, the accounts highlight the need for continued vigilance on expenditure, particularly for outsourced services. The funding and scale of future conferences and courses needs to be seriously scrutinised by Council and the Branch Committees during the coming year.

Thanks must be given to the small group of hardworking headquarters staff in London and Aberdeen. In addition we need to thank the permanent staff in our Houston and Perth Branches. Between them all, they have kept the daily activities and events of the Society on track during the year. I would like to give a special mention to Joyce Bremner who, after many years of sterling service both in Aberdeen and Perth has decided that the time has come to move on. Thank you, Joyce.

I would also like to thank all the committees, particularly their chairmen, as well as those of the branches for all their hard work and the enthusiasm that they bring to the SUT. They are, after all, the life blood of the SUT.

In conclusion, with membership being maintained at its highest level, a very high level of branch activity and overseas expansion continuing, I believe the Society is in good health for the future. In 2016 the Society looks forward to its 50th anniversary since its foundation in 1966 and many local plans are being hatched as to how best celebrate such an auspicious occasion. Central to this is a major conference event with a reception and dinner in London planned for November 2016. Entitled "50/50 Vision", the invitation is to look back over the past 50 years and to look forward to the next 50 years in the life of the Society and the development of underwater technology.

Officers and Council 2014-2015

President

Prof G Griffiths

Chairman

P Metcalf

Immediate Past President

Dr WD Loth

Honorary Secretary

D Jordan

Honorary Treasurer

M Crawford

Chief Executive

Dr RL Allwood

Members

D Brookes

M Cook

S Hall

Prof D Newman

A Phillips

D Pliszka

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Journal Officer

M Broadbent

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Aberdeen Branch

The well-established Aberdeen Branch of the SUT has continued to serve a valuable role within the subsea energy sector. The declining oil price has had a notable effect on bookings for the training courses, however, the evening technical meetings, and other events, continue to receive very strong support, with numbers having held up well.

Committee

Chris Milner (BPP-TECH) and Katrina McWilliam (Technip) have continued to serve as chair and vice-chair, respectively, and will come to the end of their three-year tenure at our AGM/Dinner taking place in December 2015. The succession plan is underway and we expected this to be in place by the time the Annual Report goes to print.

We are fortunate in receiving an excellent level of support from across the supply chain, covering the broad spectrum from operators and offshore contractors through manufacturers and consultancies to academia. The composition of the committee covers these all these organisations, and it would not be possible for us to conduct the branch events and initiatives without the generous time and effort, which they give freely. We would like to thank their employers for allowing participation. The value creation of the Society is difficult to quantify, however, the generosity from companies and individuals is truly appreciated.

As expected, committee members move on or take up new challenges and this is reflected by the following individuals departing: David Kaye (Genesis), Richard Ficken (Total), and Bob MacDonald (Wood Group Kenny) from the committee. A huge thanks to you all for your lengthy engagement and support with the Aberdeen Branch

We welcome “fresh faces”: Patrick Duggan (Apache), Richard Newby (Wood Group Kenny), Malcolm Smith (Total) and Dan Warrick (Maersk).

Aberdeen-based Events Manager, Kirsty Webster, has done an excellent job during the course of the year, both in supporting Branch requirements and also supporting wider-ranging SUT events. Julie Martin, Events Assistant, decided to leave and has been replaced by Emma Young. We wish Julie all the best and welcome Emma.

Technical meetings, presentations & events

The series of evening meetings which we hold throughout the year, totalling eight, have continued to receive regular strong attendance. The format is tried and tested with numbers approaching the 200 mark on some occasions. The Hilton Treetops continues to be the regular venue for these meetings, which is regarded as being convenient for those who travel from various areas out with the city centre.

The programme of talks was as below:

- September – Gadgets & Widgets. Popular event in the calendar allowed new and interesting technology to be presented in a relatively quick-fire format
- October – Environmental Forces. ADIL, BP and Maersk provided complementary presentations on the subject matter
- November – Autonomous Underwater Vehicles – Operational Experience and the Future saw contribution from: NCS Survey, DOF, BP and Subsea7
- February – Vessels and New Tonnage. The capabilities of the new Technip Deep Energy were presented and a look at decommissioning vessel requirements was given by Shell
- March – Carbon Capture. A variety of companies – Kirktyne, Genesis, Pale Blue Dot and Wood Group Kenny – all provided insight in to this emerging sector
- April – High Pressure Drilling & Wellhead Systems – Addressing the Challenges of New High Pressure Fields. This meeting was supported by GE Oil & Gas and Plexus
- May – Seabed Excavation Technologies was supported by Ecosse Subsea Systems and Soil Machine Dynamics



Chairman: Chris Milner

Committee

C Milner *Chairman*
 K McWilliam *Vice Chairman*
 K Webster *Secretary*
 P Benstead
 P Blake
 P Duggan
 R Gibson
 I Glennie
 M Harley
 G Kinnell
 T Laing
 D Liddle
 J Mann
 R Newby
 M O'Sullivan
 H Petersen
 D Petrone
 P Roberts
 N Saunders
 M Smith
 D Thomson
 D Warrick
 P Williams

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Aberdeen Branch *continued...*

- June – Subsea Decommissioning. This meeting rounded the year off very well with a strong turnout who heard from: DECC, Centrica and Wood Group Kenny

In January, we opted to continue with the Global Market Outlook Business Breakfast, which was held at the Chester Hotel and attracted over 100 delegates. Feedback was very positive and we plan to continue with this event format for the foreseeable future. Presenting companies were Simmons & Co and DECC, with Subsea UK providing a scene-setting opener. Our appreciation goes to: Mike Beveridge, Bill Cattnach and Neil Gordon, respectively.

In addition to the above activities, we held our annual Golf Day at Edzell in September, exhibited at Deep Offshore Technology (DOT), which was being held in Aberdeen in October, held a joint event with the Hydrographic Society in June (which saw a fairly even split between member interests, from the two societies), and enjoyed a Networking Evening at the end of June.

We believe that there is a good level of breadth around our events and that we serve the interests of our members well.

Training courses

As previously mentioned, the uptake for course bookings has been slower than in previous years, which can be attributed to the significantly lower oil price and consequent cutbacks to budgets. We have continued to offer the same variety of awareness courses but have reduced the number of dates. Courses include;

- Introduction to Subsea Facilities
- Introduction to Subsea Positioning
- Life-Cycle of Flexible Risers
- Offshore Marine Operations Awareness
- Subsea Awareness

We aim to run courses with delegate numbers set around 15, although these have been lower of late. We actively try to keep all the courses updated in terms of look, content and relevance and we are in the process of undertaking a not insignificant review of the Subsea Awareness Course, with the aim of keeping this at the forefront of industry classroom training.

We would like to take this opportunity to express our thanks to all course contributors, your support is greatly appreciated.

Annual sponsorship

For 2014/15, we opted for a streamlined sponsorship model which saw a single tier introduced and we are aiming to continue with this approach. Sponsoring companies included: GE Oil & Gas, Fugro, KD Marine, Nautronix, OneSubsea, Technip and Wood Group Kenny.

The generous sponsorship has enabled us to conduct a variety of educational activities such as: SUT+ field trips and site visits, Christmas Lectures for Schools as well as supporting our regular evening meetings and social events.

SUT+

This group – which comprises representation from six member companies – is now an established collective of new entrants to the subsea sector, who run a very active programme of events that run throughout the year. This group operates autonomously to the branch committee; however, they share details of their planned activities and seek

Aberdeen Branch *continued...*

guidance, as required, during our engagement with them at our monthly committee meetings.

The group continue to go from strength to strength, adding value in an area which, until recently, the SUT had not tapped in to. I am aware that a similar model is established in other key SUT branches and new ones are under development, which is a very positive direction for the SUT.

Christmas lecture for schools

This event has been running for a number of years with consistently strong numbers and positive feedback each time. The format is simple: SUT provides a venue, transport and we invite Primary 7 (c. age 11-12) school children from the city and surrounding area and give them an introduction in to subsea activities including: Diving, Marine Environment, Subsea Oil & Gas and Offshore Renewables. We conduct a morning and an afternoon session and attract upwards of 600 children across the day.

The event provides time away from the classroom and stimulates some thought as to what goes on under the water and, hopefully, sparks interest in a career within the industry.

We are also aiming to link up with similar events in order to provide better education information flow.

AGM/dinner

The AECC was the host venue for our AGM and Annual Dinner – the move being driven by the closure of the Marcliffe Hotel (now reversed and we will be returning there in 2015). Despite the downturn within in the industry, we were fortunate in that we attracted 219 guests.

The Aberdeen Branch Award of Merit was presented to David Kaye. By mutual agreement, the committee decided not to present the Martin Richmond Award due to no individual meeting the award criteria. The Branch hopes this provides a positive message in how highly in which the award is regarded. We hope to present the award this year.

Once formalities were concluded, the guest speaker, Casper Berry, proved to be a hit with the audience. He also provided excellent value-added entertainment at an informal side-show following his talk.

The regular Heads & Tails competition raised over £4,000 (including Gift Aid) which was contributed to the SUT Education Support Fund.

Positive feedback was received from many of those attending on the night.

Australia Perth Branch (incorporating Melbourne)

www.sut.org/branch/australia-perth



Chair: Julie Morgan

Committee

J Morgan *Chairman*
I Finnie *Vice Chairman*
I Wilson *Secretary*
R Steel *Treasurer*
J Maninin *Events Manager*
C Charles *Events Assistant*
F Allan *Administrator*
G Allegret
S Elkhatib
R Farrier
R Fricke
A Galbraith
S Gourvenec
M Hemsted
R Hendricks
E Lindahl
B Lamb
R O'Sullivan
C Saunders
H Sheil
E Tellier
P Upjohn
A Walker

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The Perth Branch Committee and the YES! sub-committee have been busy this financial year. Continued collaboration has made it possible to put on the usual calendar of events, and co-host the Subsea portion of the AOG conference and exhibition, including sponsoring students and graduate attendance at the event.

In addition to our events, we have awarded six Australian-wide scholarships and continue to pursue Subsea Engineering Registration, via a joint industry project, sponsored by this branch.

We are proud of our events and multiple ongoing projects, all providing industry exposure and interaction whilst continuing to give back to the local subsea community.

Support and sponsorship from the stable membership, industry, education and other learned societies, continues and we are very thankful to all of those who have been involved in our success over the last year.

Committee

Committee members continue to provide enthusiastic, imaginative and creative support to the branch bringing in a fresh outlook with great ideas. I would like to thank all committee members – both those who served on the previous committee and current members – for their efforts in enabling us to reach our goals. We are indebted to the 2014 and 2015 committee, and in particular wish to express our thanks to retiring committee members who gave very generously of their time, knowledge and support.

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

Current SUT Perth Branch sub-committees:

Advertising: Ian Finnie, Marcus Hemsted, Julie Morgan & Paul Upjohn

AGM: Roland Fricke, Elizabeth Lindahl & Marius Martens

Annual Dinner: Sarah Elkhatib, Roland Fricke, Ross Hendricks & Marius Martens

AOG: Guillaume Allegret, Sarah Elkhatib, Karina Fratzcak, Terry Griffiths, Julie Morgan, Chris Saunders, Ray Steel & Alastair Walker

AUT 2015 Conference: Bruce Baker, Karl Bernet, Steve Duffield, Ian Finnie, Ross Hendricks, Ben Hunt, Ian Hobbs, Peter Ramsay & Ray Steel

Finance: Julie Morgan, Ian Finnie, Ray Steel & Ian Wilson

Golf Day: Afton Galbraith, Marius Martens, Robbie O'Sullivan & Ian Wilson

Melbourne Core Group: David Layton, Chris Lee, Elizabeth Lindahl, Julie Morgan, Stefania Narum (Melbourne Lead), Jeremy Rosen & Ray Steel

Membership: Guillaume Allegret, Roland Fricke, Marcus Hemsted, Ray Steel & Alastair Walker

OSIG: Alexandre Nicolas Bandini, Fiona Chow, Kevin Day, Sarah Elkhatib (OSIG Chair), Minne Faber (OSIG Secretary), Susan Gourvenec, Marcus Hemsted, Julie Morgan, Peter Ramsay, Damon Sunderland & David White.

Scholarships: Sarah Elkhatib, Ross Hendricks, Robby O'Sullivan, Paul Upjohn & Alastair Walker

Sponsorship: Chris Saunders, Ray Steel, Marcus Hemsted & Ian Finnie

Australia Perth & Melbourne Branch *continued...*

Subsea Controls Down Under 2016 Conference: Ross Hendricks, Julien Levadoux, Harry Mackay, Harvey Smith & Paul Upjohn

Subsea Engineering Registration: Afton Galbraith, Julie Morgan, Chris Saunders & Ian Wilson

YES!: Ibrahim Ayoub (YES! Chair), Daniel Couson, Thomas Charlton, Thomas Friberg, Ross Hendricks, Elizabeth Lindahl, Jatin Lodhia, (YES! Programmer Leader), Sarah Madrigal (YES! Secretary), Shane Morrissy, Matthew Moore, Chris Saunders, Peter Siwek & Daphne Voon

YES! Student Liaison Officers: Heath Murrie & Lucien Nguyen

Finance

A completed Profit and Loss Report for the year will be forwarded to Council following the finalization of the audit in September 2015. SUT Perth Branch ran at a deficit this financial year of approximately \$AUD 38,000. Next year's Budget Forecast of a deficit of \$AUD 79,000 has been forwarded to SUT in the UK.

Branch administration

The Perth Branch continues to be effectively and efficiently managed by our three part-time personnel: Fiona Allan (Administrator: Finance/Branch/Membership), Corelle Charles (Events Assistant) and Jennifer Maninin (Branch & Events Manager). They all continue to take great pleasure in coordinating and organising all of our events, administration, membership and accounts for the Society.

The SUT Perth Branch hope to move to West Perth in December 2015 in an effort to reduce office costs and to be closer to many of the members located in the CBD.

Local membership (Perth and Melbourne)

- Students: 295
- Individual: 195
- Corporate: 33
- Academic / Not for Profit: 4
- Global: 16

Membership continues at a stable level given the current economy.

On the general front, a committee vetting process is in place to ensure only people and organisations truly involved in the underwater world as their primary activity are elected to the various membership categories. During the year we have been endeavouring to ensure that a consistent level of scrutiny is applied to vetting of membership applications from all branches and head office.

Scholarship awards

SUT Perth branch has continued with our policy of supporting engineering students studying relevant courses in Australia and displaying a strong interest in continuing into a career or further studies in underwater disciplines.

After University presentations this year by the Society, we have again awarded six scholarships to students, and are pleased at the continued and positive uptake of scholarships by the student fraternity. The students awarded scholarships were from Australian Maritime College (Tasmania), Curtin University and the University of Western Australia.

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Australia Perth & Melbourne Branch

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In 2015, the Perth Branch Committee decided to increase one scholarship by 50%, and name it the 'Chris Lawlor' Scholarship, and award it to the most outstanding Scholarship candidate. Chris Lawlor was a Subsea Engineer who was integral to establishing the Perth SUT, who sadly died in October 2014.

YES! (Young Engineers & Scientists)

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

- Create awareness of the subsea industry amongst young engineers and scientists
- Develop young engineers and scientists within the subsea industry
- Provide networking opportunities to build relationships amongst young engineers and scientists within the subsea industry

What a massive year it has been for the YES! sub-committee here in Perth. Through several events (as noted below) we've been busy continuing to promote YES! and the local subsea industry. We've also started addressing a global collaboration with other SUT branches "younger" professionals.

We are indebted to the YES! sub-committee members and wish to express our thanks to all committee members who gave very generously of their time, knowledge and support during these crucial beginning stages. These are:

- Ibrahim Ayoub (2014 Secretary / 2015 Chair)
- John Bills
- Matt Blumberg
- Daniel Causon
- Thomas Charlton
- Matt Davis
- Thomas Friberg
- Ben Holland (2014 Chair)
- Paul Livanos (2014 Programme Leader)
- Jatin Lodhia (2015 Programme Leader)
- Sarah Madrigal (2015 Secretary)
- Shane Morrissy
- Matthew Moore
- Heath Murrie (2014/15 Student Liaison Officer)
- Lucien Nguyen (2014/15 Student Liaison Officer)
- Lisa Pullin
- Renae Rundle
- Mark Simkin
- Peter Siwek
- Daphne Voon

The SUT YES! Sub-Committee is excited about the subsea industry and can't wait for bigger and better things for YES! next year.

Co-written by Ibrahim Ayoub (YES! Chair) and Jatin Lodhia (YES! Programme Lead)

Australia Perth & Melbourne Branch *continued...*

OSIG Perth

OSIGp is now into its fourth year representing the geosciences and geotechnical community in Perth, and providing a platform for discussion, events and dissemination of information and industry best practice in the fields of geology, geophysics, geomatics and geotechnics. The committee meets on a monthly basis and through these regular meetings are developing and delivering events, including geosciences-themed technical evenings, field trips, a one-day technical course and an educational movie night event.

This year OSIGp introduced a new course to the SUT calendar, titled 'Offshore Geohazards and Geotechnics: Risks and Opportunities'. This one-day course covered offshore geology, geohazards and geotechnical engineering, and explained how an improved understanding of all three disciplines can lead to optimised infrastructure solutions. The course was fully registered and received very good feedback from participants.

OSIGp also introduced a field trip which was aimed at educating participants about the geology of Perth and its surrounds, and how it translates to the offshore environment. The trip was attended by 25 personnel and positive feedback was received.

The Perth committee continues to improve links with the international OSIG committees with the aim of coordinating international events and seminars. As a result, key objectives have been put in place to grow the OSIGp group, develop a more formal structure and membership and come more into line with the OSIG-international framework. This will lead to more regular and diverse events and allow the Perth community access to events held by the OSIG groups in the UK and Houston.

The OSIGp committee will continue to support Perth's geoscience and geotechnical community through a range of initiatives aimed at sharing knowledge. OSIGp aims to synchronise and deliver complementary events within the busy SUT calendar and expect to grow its presence and profile in the years to come.

OSIGp would like to thank SUT as well as the OSIG branches in the UK and Houston for contributing to its development.

Co-written by Sarah Elkhatab (OSIG Chair) and Minne Faber (OSIG Secretary)

Subsea engineering registration

The SUT Perth Branch continues to promote subsea engineering and related skills as a dedicated area of practice within the Australian National Engineering Register (NER). Progress this year includes acceptance of subsea engineering as a unique area of practice, with development and in-principal agreement of the recognition roadmap with Australian based stakeholders. We have part-funded and participated in Phase 1 of the SECOMP (Subsea Engineering Competency) JIP led by WGK (in the UK) to map and define the competencies and skills required in this area to finally ensure alignment of the whole process to recognise offshore pipeline engineering as a separate area of practice. A plan is in place to enable assessment, by industry, and registration, by NER, in the area of subsea engineering by the end of 2016. This plan includes communication at regional events like the AOG Conference in March 2016.

Co-written by Afton Galbraith & Julie Morgan, members of the Subsea Engineering Registration sub-committee

SUT Melbourne core group

The sub-committee worked hard this year to put on the first networking event for quite some time: 'Subsea Drinks', sponsored by Wood Group Kenny (November 2014) and the regular Subsea Overview Course (December 2014). Large thanks to the Melbourne based group.

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Australia Perth & Melbourne Branch

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Training courses, evening technical meetings, YES! events & conferences

SUT training courses, evening technical meetings and conferences continue to attract a lot of support from presenters and delegates, with most courses being fully booked over the last year. YES! events were also introduced and have received huge support from the industry. The continued success of our courses has provided financial surpluses for use in other areas of SUT activities.

Training courses

The following training courses were run:

- Achieving Reliable Subsea Systems, 20 August 2014
- Introduction to Positioning & Survey, 3 September 2014
- Operating Subsea Oil & Gas Production Systems, 9 September 2014
- Subsea Awareness Course, 15–19 September 2014
- Introduction to Offshore Diving, 3 December 2014
- Subsea Overview Course (Melbourne), 3–5 December 2014
- Subsea Awareness Course, 2–6 February 2015
- Metocean Awareness Course, (IMarEST & SUT) 4–6 March 2015
- Operating Subsea Oil & Gas Production Systems, 18 March 2015
- Flexible Risers and Flowlines, 25 & 26 March 2015
- Offshore Geohazards and Geotechnics: Risks and Opportunities Course, 22 April 2015
- Subsea Awareness Course, 11–15 May 2015
- Introduction to Materials & Corrosion, 3 & 4 June 2015

Evening Technical Meetings

In addition, the following evening technical meetings were held in Perth:

- **Drilling Deeper: Geomechanics and Geohazards, 27 August 2014**
Presentations by: Sadegh Asadi, Baker Hughes, Laurent Langhi, CSIRO and Kevin Day, LR Senegy. Chaired by Meysam Banimahd, Woodside Energy Ltd and sponsored by E-Precision Laboratory.
- **FLNG is coming..:What does it mean to the Subsea Industry?, 15 October 2014**
Presentations by: Alan Gillen, Woodside Energy Ltd, Ben Holland, Fugro AG, Jon Gould, Peritus International Ltd, Adj. Prof. Kevin Mullen, INTECSEA. Chaired by Ian Finnie, Fugro AG and co-sponsored by Fugro, INTECSEA and Peritus.
- **Subsea IMR & Integrity Management, 25 February 2015**
Presentations by: John Grapiglia, Corrosion Control Engineering, Richard Rickett, DOF Subsea, Gordon Hamilton, Fugro GEOS Ltd. Chaired by Marcus Hemsted, SapuraKencana Australia and sponsored by DOF Subsea.
- **Pre-Commissioning & Start Up Issues, 29 April 2015**
Presentations by: Grahame Strong, Wood Group Kenny, Tim Dallas, Pressure Dynamics International, Andrew Duff, Wood Group Kenny. Chaired by Roland Fricke, Woodside Energy Ltd and co-sponsored by Clarke Commissioning and Completions, Pressure Dynamics, Tracerco and Wood Group Kenny.

Australia Perth & Melbourne Branch *continued...*

- **Recent Developments in Design & Installation of High Temperature CRA Clad Pipelines, 10 June 2015**

Presentations as follows: David White, The University of Western Australia, Alastair Walker, Advanced Mechanics and Engineering Pty Ltd, Matt Lancien, SPEC Pty Ltd. Chaired by Ian Finnie, Fugro AG and sponsored by SPEC Pty Ltd.

Full post-event reports on all evening technical meetings can be found at www.sut.org/events.

The Committee is, as always, grateful to all presenters and chairpersons for their time and efforts in bringing our evening technical meetings to fruition, and for those generous corporate members who support the evenings with their sponsorship.

YES! events

The Young Engineers & Scientists (YES!) sub-committee ran the following YES! evening events over the last financial year:

- **Spreading Your Wings, 25 September 2014**

Presentations by: Dan Smith, Woodside Energy Ltd, John Bills, GE Oil & Gas and Katrina Roso, DOF Subsea. Chaired by Matt Blumberg, 2H Offshore and co-sponsored by DOF Subsea, GE Oil & Gas and Woodside Energy Ltd.

- **Barefoot Bowls, 20 February 2015**

A social event with bowls, drinks and BBQ. Co-sponsored by Neptune, Technip Oceania and Woodside Energy Ltd.

- **Negotiating for Success, 28 May 2015**

Presentation by: Lina Velosa, Nexxis and Abacco Group. Chaired by Daphne Voon, Technip Oceania and sponsored by Woodside Energy Ltd.

Full post-event reports on all YES! events can be found at www.sut.org/events.

On top of the above, YES! committee members have also volunteered at the following industry/community events:

- SciTech National Science Week/Perth Science Festival, 16 August 2014
- PCWA Next Generation Expo, 5 September 2014
- SciTech's Mechatronics Mania, 19 November 2014
- SciTech Innovationfest, 19–21 March 2015

Conferences

AOG (Australian Oil & Gas) Conference and Exhibition, 11–13 March 2015

The Subsea Australasia Conference and Australasian Oil and Gas Exhibition merged together for the second time in 2015 to bring us a jam-packed and incredibly exciting few days.

Organising partners included SUT, Subsea Energy Australia (SEA), Subsea UK and Diversified Exhibitions. Each group contributed to sessions in the programme and this year SUT provided the following sessions:

- Creating, Extending and Mending Subsea Systems – half-day
- New Trends in Flow Assurance – one-day
- Riser Systems – half-day
- Subsea Controls, Sensors & Monitoring – one-day

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Australia Perth & Melbourne Branch

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Whilst the others provided:

- Exploring Subsea Contracts – half-day
- Inspection Maintenance & Repair (IMR) – Best Practice – one-day
- Pipeline Design & Installation Systems – one-day
- Subsea Market Outlook – half-day

Overall feedback for the event was very positive, with SUT performing very well in terms of delegate numbers.

Perth Branch golf day – 24 October 2014

Our Annual SUT Perth Branch golf day was held at Wembley Golf Course again this year and was a complete sell out with a great day had by all. We are very grateful for the sponsors who made this possible including: Subsea Engineering Associates, FMC Technologies, OneSubsea, Oceaneering Australia, Applus RTD, Technip Oceania, Aker Solutions, Freudenberg Oil & Gas Technologies, Xodus Group, Energy Agencies, Castrol Offshore, Proserv, Granherne and Bredero Shaw.

AGM – 11 November 2014

Our 11th AGM was held at Frasers Function Centre, Kings Park. Business was concluded and presentations were made to the Perth Branch 2015 scholarship winners. Jennifer, Fiona and Corelle (the SUT Perth Branch staff) were thanked for their hard work during the year and the branch officially wished farewell to Ray Farrier (2013/14 Chairman) and welcomed Julie Morgan (2015 Chairperson). Sincere thanks were also acknowledged for the voluntary support of the many members who were presenters at courses and technical evenings.

John Longley, then gave a presentation on 'Wings and Foils – Americas Cup innovation from 1983 to 2013' which was followed by drinks and canapés. More than 100 delegates attended. Sponsor for the evening was Woodside Energy Ltd.

Annual dinner – 7 November 2014

Our 10th Anniversary Annual Dinner was held at the Hyatt Regency Perth and proved yet again to be a very popular event. The entertainment, illusionists 'Adam & Selina', amazed and mesmerised the 386 members and guests in attendance. A magical evening was had by all.

Dinner sponsors included Wood Group Kenny, Australian Marine Complex, Subsea Engineering Associates, SV2 Consulting and MacDermid Offshore Solutions.

Year ahead

The back half of 2014 continued in a prosperous mood, however the first half of 2015 has proven to be challenging, with committee members and staff working hard, not only on the above mentioned projects, but also on plans to keep us on a reasoned financial footing. The Global Financial Crisis of 2007/08 seemed to pass us by here in Perth, but this time Perth has not been immune to the current austerity measures in place globally, and we are aiming to be as resilient as possible in the current financial climate, while still providing the support in 2015/16 to our members in the Subsea community here, for which we have become renowned.

This has been my first term as Chair "person" here in Perth and it is certainly very challenging at the moment, but it is also very rewarding, especially when folk express their pleasure having attended a course and, more frequently, an evening technical meeting, and promise to bring more friends along to the next event. That gives me confidence that we are still carrying out the mission of the SUT as a learned society!

www.ukbrocean.coppe.ufrj.br

Brazil Branch

EMBRAPII-COPPE Unit in Subsea Technology

SUT-Brazil Branch has been working in cooperation with the EMBRAPII-COPPE Unit in Subsea Technology to promote R&D joint projects involving the University and oil & gas companies.

Course on Flexible Pipe and Umbilical Cable Technology

The SUT-Brazil Branch supported the Course 'Flexible Pipe and Umbilical Cable Technology', held at COPPE Auditorium - Federal University of Rio de Janeiro, 3-7 November 2014, with 30 participants from both academia and industry.

Seminar promoted by SUT-Brazil and National Petroleum Agency (HR Program)

New Technologies for Well Drilling

Presenter: Clemente José de Castro Gonçalves, B.Sc Civil Eng, M.Sc. Geomechanics

Date: 1st December 2014

Auditorium Ocean Engineering, Federal University of Rio de Janeiro
65 participants.

Technical Event

Launching of the Embrapii-Coppe Unit in Subsea Technology

Presentation by Prof. Segen Estefen - Technical Coordinator

Seminar: 'The Innovation in Petrobras', André Lima Cordeiro, Executive Manager, Petrobras Research Center

Date: 17th June 2015

Auditorium COPPE - Federal University of Rio de Janeiro
120 participants.



Chairman: Prof Segen Estefen

Committee

Prof SF Estefen *Chairman*

Prof M Vaz *Secretary*

T Netto *Treasurer*

VC Santos *Executive Manager*

C Bonfim Silva

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China Branch

www.sut.org/branch/china



Chairman: Menglan Duan

Committee

ML Duan *Chairman*
 SW Zhou and HY Zeng
Hon. Chairmen
 LB Zhang *President*
 JJ Gu *Treasurer*
 Y Zhang *Secretary*
 WL Dong
 YH Gu
 Y Huang
 XJ Jin
 GH Li
 HJ Li
 WH Li
 XZ Li
 ZG Li
 Y Liang
 BP Lu
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The year of 2014-2015 has seen another active programme of SUT branch activities in China. Our successful programme of meetings, seminars and reports continues. This has been supported by all members of our group as soon as some famous professors such as Huacan Fang, the pioneer of China's offshore oil engineering disciplines.

SUT technical conference 2014

The Underwater Technology Technical Conference (SUTTC 2014) is the major symposium in China for scientists, engineers and practitioners all around the world to present their latest researches, results, ideas and applications in subsea areas, especially in the developments of subsea production system. It is also an opportunity for them to exchange ideas on the deepwater oil and gas industry in the South China Sea. This Conference was held in Qingdao, China, October 13-15, 2014. It was hosted by SUT China and China University of Petroleum, Beijing, and also endorsed by Qingdao Virgin Technologies, China Petrochemical Research Institute of Petroleum Engineering, Chinese Society of Mechanics, and Chinese Society for Ocean Engineering, etc. The subject of the conference was 'Ocean energy'. There were around 100 attendees, and about 40 papers were presented in the conference.

Seminars and reports

Academic report emphasised on flexible risers in deep sea, organised by SUT China and Qingdao Virgin Technologies, held on 22th December 2014, at No. 703, the geological floor, China University of Petroleum. Audience: 40 people.

Report focused on the advances in exploration and development of deepwater oil and gas fields in China, organised by SUT China and China University of Petroleum, on 18th June 2015, at No. 107 class room, the third teaching building, China University of Petroleum. Audience: 30 people.

www.southouston.com

Houston Branch

The SUT Houston Branch continued to excel in 2014/2015 with the branch's various committees support and dedication. These committees include; Executive, Offshore Site Investigation (OSIG), Subsea Engineering and Operations, Young Professionals and Education.

In addition, our student chapters at University of Houston, Texas A&M University – College Station, Texas A&M – Galveston and University of Texas have been very active. The University Chapter's student support has been essential to our growth and community involvement. It has also increased our scholarship program's overall awareness.

Nine students from the University of Houston, Lone Star College, and Houston Community College were each awarded a \$3,000 scholarship for their outstanding academic achievements in engineering. Scholarship recipients were Stacy Short, Ghaith Al Samman, Ashray Kulageri Venkatesh, Nebolisa Egbunike, Hardik Minocha, Azizah Mohamed, Nnadozie Nzeogu, Ademola Oladinni, and Chukwudi Omire. A total of \$27,000 in scholarship awards and the branch plans to award \$30,000 in Autumn 2015. Three scholarship fundraisers are held annually. This year, we changed our Pre-OTC Networking Event to a Scholarship Fundraiser for a total of four annual scholarship fundraisers.

Scholarship fundraisers

We held four scholarship fundraisers in the 2014/2015 year. These included a skeet shoot, dinner and dance with awards ceremony, golf tournament and a Pre-OTC networking event.

Due to 2015 industry conditions, it has already become challenging to gain event sponsorship support and fundraiser attendance has been down compared to last year. In 2016, we will hold out first clay shoot in place of the golf tournament. The golf tournament requires a high level of staff support with a low revenue result.

AGM

The AGM was held in November with 16 in attendance. Christopher Curran spoke about our Strategy Workshop and other miscellaneous business updates.

Strategy workshop report

In September, the SUT Houston Branch held its first strategy workshop. This was led by an MBA Student from Rice University, Sabeeta Makani. A mission and vision statement were a positive outcome of this workshop. The mission of the SUT Houston was defined as follows: SUT Houston will aim to educate and create awareness about underwater science and technology. The vision of the SUT Houston Branch is: To be the leading reputed learning society, creating human capital value within the field of underwater science and technology.

It was also determined that our potential target audience included the following: elementary or high-school students, university students, young professionals, experienced professionals and retirees. As this seemed like a broad audience, it was narrowed and broken down further. This put the young professionals as the main target audience. With that focus, the young professionals will be able to mentor the university students and the elementary/high-school students. They can provide guidance and mentorship to students and create awareness. Another goal would be for the retirees/experienced professionals to provide guidance and mentorship to the young professionals. And on the flip side, the retirees/experienced professionals gain access to a fresh talent pool.

One of the topics during this workshop touched on enhancing our course offering. As a result, we decided to grow our Subsea Awareness Course with an online offering (this



Chairman: Christopher Curran

Committee

C Curran *Chairman*
 J van Smirren *Secretary*
 D Schlater *Treasurer*
 J Roberts *Marketing & Business Development*
 L Smith *Administrator*
 J Allen
 M Ancheril
 E Doyle
 D Duron
 C Egan
 M Franchek
 C Heins
 J Jondle
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 Z Medina-Cetina
 R Osborne
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Houston Branch

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has been placed on hold as it needs a larger SUT review), offer a Subsea Qualifications / Reliability Course, offer a Flow Assurance course and offer a Developing in the Arctic course (collaboration between OSIG and Subsea). In addition to the course offerings, we want to offer more networking events and mentorship programs.

Implementation efforts are underway. These include the following:

- Business development committee formed
- Young Professionals mentorship committee formed
- Young Professionals Geotechnical subcommittee formed
- Member registration process redefined. This was developed after it was brought to our attention how difficult it was to sign up for membership online. The process to sign up online was simplified and is in the process of becoming more streamlined.
- Corporate membership packages redefined. We have been receiving questions about the benefits of becoming a corporate member over an individual member. The corporate membership packages are being reviewed and will be redefined in the coming weeks.

OSIG school touring program

During the Summer of 2014 and 2015, the OSIG school touring program engaged with Houston Museum of Natural Science to provide classroom material and presenters for the Summer Camp Xplorations program, primarily aimed at the 3rd to 6th grade levels. Two modules were proposed by OSIG: Seeing with Sound, discovering the deep oceans and Introduction to Marine Archaeology. Volunteer presenters from OSIG group and TAMU SUT Student Chapter presented the material from these two modules in the following summer camp programs: Extreme Machines, Archaeology 101, Treasure Hunters, Full Tilt Physics, and Roving Robots. Sixteen classes were served each summer, introducing some wonderful science experience, discovery and best practices to over 600 students during the two summer programs. The modules were well-received by students, and HMNS staff, led by Assistant Director of Youth Education, Kathleen Havens. On a number of occasions HMNS staff commented that this is the most attentive the students had been all week.

Student chapters

University of Houston, Subsea Engineering Society (SUT-SES)

The student chapter held a Subsea Engineering Lecture Series hosted by FMC Technologies. The first lecture was an 'Introduction to Subsea Engineering, Equipment and Processing', and presented by John Helander, FMC Technologies. The second was "An overview of Subsea Trees and Completed Projects", and presented by David Kiehnhoff, FMC Technologies

Later, a second general meeting themed 'Subsea Engineering Projects and Experiences' included three guest speakers from BP. Guest speakers were: Tabish Husain – Subsea Project Engineer, Rhodes Coffey – Subsea operations Engineer and Jemilat Ojetayo – Subsea Project Engineer.

An open panel discussion for students pursuing a degree in Engineering, Science, Technology or Geoscience was held on campus. It was an evening session titled, 'Successful Pathways into the Oil and Gas Industry'. The companies included at the event were: Shell, Granherne, Hess, Aker Solutions, Intecsea, Geosyntec, Emas and Genesis.

A second evening session at U of H, 'Blind Faith 2 – A Brownfield Project in Deepwater GOM' included guest speaker Sean O'Brien, Facilities Manager, Chevron. The session was held in the evening and refreshments were served.

In conclusion, the SUT Houston Chapter had an active year and event registrations

Houston Branch *continued...*

continue to increase. University of Houston student chapter Chair Nebolisa Egbunike and his student chapter team continue to do an outstanding job organising ongoing lectures at UH.

Texas A&M University

18 September – Meet and Greet: This was the first general meeting of the semester and included a live product display and presentation about the underwater rover SEATIGER. Don Wells, HESS, spoke about the underwater vehicle and answered questions from curious minds.

The student chapter offered three Seminar Series, learning lectures. These included:

Seminar Series I: 'Geophysics' presented by: Alan Foley, Benthic

Seminar Series II: 'Panel Discussion on Offshore Drilling' which included a panel of experts on Offshore Drilling to answer questions.

Seminar Series III: 'Discussion on Environmental Impacts; Monitoring and Characterising Offshore Environmental Conditions' presented by: Dr. Piers Chapman (TAMU) & Tony Knap (GERG)

Texas A&M University student chapter held a Louisiana Monroe Tailgate in November 2014 at TAMU. Students and SUT seasoned professionals provided food, beverages and a great time. Deepsea Technology, Floating Production Services Inc. and Fieldshark Co. sponsored the event.

Paper Contest

This essay contest was open to all students in the Texas A&M University System, graduate or undergraduate students, and is funded by the Society for Underwater Technology (SUT). Papers must fall under one of three topics: science, technology, or engineering, defined below. Each category will be judged separately and a prize of \$1,500 awarded per category. The winning papers will be considered for publication in the SUT's journal *Underwater Technology* or the *UT2* magazine. The rules were as follows:

Topics: Authors must submit their paper under one of the following topics:

Science: The presentation of original research or conclusions to address a scientific hypothesis related to the ocean. Paper may fall under the topic of oceanography, physics, biology, chemistry, geoscience, nautical archaeology, or other related fields.

Suggested Questions:

- What is the issue being addressed?
- Why is this research vital?
- Who does it affect?

Technology: The application and knowledge of tools, methods, techniques and systems to solve a problem and/or improve a pre-existing solution in the marine environment. Paper may be an original improvement to current technology, a new form of technology, or a new application of existing technology.

Suggested Questions:

- What is the issue at hand?
- Why does it need a solution?
- What resources are required?
- How would this invention or improvement solve the problem?

Engineering: The creative application of scientific principles to design and develop structures, machines, or processes for a marine environment. May fall within chemical, civil, electrical, mechanical, or other related engineering disciplines.

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Houston Branch

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Suggested Questions:

- What issue needs to be resolved?
- What is the scale of the issue?
- What is required to accomplish the solution?
- Who does it affect?

We are pleased to announce our three winners for this SUT-TAMU Student Paper Contest. The winner of the Science category was Lindsay Martin (73/85 with B publish grade), of the Engineering category was Ahmad Abdullah (74.5/85 with B publish grade), and of the Technology category was Kewei Chen (75/85 with B publish grade). All winning papers have the required research submission forms from their advisors. Each winner received a \$1,500 check. This has been a very rewarding challenge for our branch, and we hope to continue the tradition next year.

One-day short course – 10 April, 2015, 'Subsea Top to Bottom'

TAMU offered a one-day course which represented the subsea industry and the latest underwater technology, taught by industry professionals. The course is normally offered by our parent organisation (SUT) as a five-day course. The course was offered free of charge for students and TAMU affiliates. There were more than 75 students throughout the day. They are planning our upcoming one-day short course for Friday 1 April, 2016

University of Texas

The University of Texas student chapter in Austin held a half day event, "Do you know what's happening underwater?" Presentations were as follows:

- Dan McConnell, FUGRO – New technologies for detecting deepwater gas bubbles from natural seeps, leaky pipes and induced fractures.
- Chris Roper, Saab Seaeye – Underwater Operations with Remote Operated Vehicles (ROV) and Autonomous Underwater Vehicles (AUV)
- Roger Osborne, Ocean Flow Inc. – Historical and present day practice of underwater technologies
- John Allen, Allen Energy Consultants/Intecsea – Future of underwater activities
- Q&A

There were 42 students who attended the event and a drawing for student membership was held. Four students won a one-year SUT student membership. This was the first event held with hopes to create awareness and build a committed SUT student chapter.

Subsea Tieback

The Subsea Tieback conference took place in New Orleans this year. The SUT one-day course, 'Key Elements of Subsea Tiebacks' had an outstanding registration of 110 attendees. Don Schlater, the SUT Treasurer, gave a brief presentation at the conference to announce that we have trained over 1,050 individuals through this one day course since 2005.

The Subsea Tieback Forum is the only event specifically dedicated to the linking of subsea wells to existing or new facilities. The one-day course put on by SUT is unique in that it discusses the history of subsea tiebacks, reasons for doing them, equipment and installation issues and the commercial side of subsea tieback projects.

Students include operator, supplier and component vendor personnel along with government regulators and investment analysts. In the past nine years 1,050 students have taken the class. He also pointed out the Houston Subsea Awareness Course has had over 900 attendees since beginning in 2001 and that SUT lunch and learns have had an attendance of 2,700 in the same period. If you multiply the number of people trained by the hours they spent in SUT training you arrive at 43,500 training hours.

Houston Branch *continued...*

Young Professionals

The Young Professional's committee held a 'speed networking' event at the Fox and Hound Pub. This event was aimed towards young professionals who are in the early part of their career, and college students who are approaching graduation. The purpose of the event was to offer young professionals a chance to sit one-on-one with several industry experts/hiring managers to discuss growth, industry trends/hot topics, and build relationships. We offered a diverse group of industry experts in order to cover multiple areas in the industry, including subsea or geotechnical backgrounds from manufacturers, service companies, EPC, and operators. In total, we had 20 industry experts and just under 30 young professionals attend the event. The 'speed networking' portion lasted for approximately one hour. The young professionals were given 8-10 minutes to rotate through up to six seasoned professionals. A social/happy hour was held at the end of the session, which opened up the floor to informal networking and continued conversations.

Later in the year, SUT Houston Young Professionals (SUT YP) held their second annual crawfish boil at Ragin' Cajun on Westheimer. The event attracted over 100 attendees from several different subsea companies in the Houston area. This year, we extended the invitation to students attending universities and recent graduates completing their internships in order to bridge the gap from graduation to young, experienced professionals. On top of that, several esteemed, seasoned professionals also attended the event, which was a great opportunity for the young professionals to meet reputable individuals in a fun and relaxed setting. Event sponsors included: Ocean Installer, GATE, Inc., and Technip Umbilicals.

Networking meetings

The branch recently changed their venue for monthly networking events to Carmelo's Italian Restaurant which is located close to the energy corridor. The networking events continue to grow with an average guest attendance of 90-110. The SUT would like to thank our sponsors for supporting the monthly networking events and Carmelo's for their wonderful staff, food and beverage services. These sponsors include: Castrol, VFL Energy Technologies, Xodus Subsea, Clamp On, Wood Group Kenny, MacArtney, Perma-Pipe Oil & Gas, 3D at Depth, Tidewater Subsea, PennWell and PDL Solutions.

The Annual Pre-OTC Networking event was held at a new venue this year called Mr. Peeples in mid-town. The SUT team decided to create a new approach and raise scholarship funds where previous years all sponsorship paid for the event and guests were not charged to attend the event. This year sponsors included: Xodus Subsea, PennWell, Tidewater Subsea, 3D at Depth and PDL Solutions. Sponsorship packages varied and guests were charged \$55 (members) \$60 (non-members). The price included networking with 250 industry specialists, a wide variety of delicious hors d'oeuvres, savory wines and light background music. To ensure the highest level of scholarship proceeds, a raffle for high-end prizes was presented. The event raised \$7,126.00 toward 2015 student scholarships.

Learning Luncheons

- New Technologies for Detecting Deepwater Gas Bubbles from Natural Seeps, Leaky Pipes, and Induced Fractures
- Offshore Trends and Forecasts
- Assessing Fatigue Life of Production Riser due to VIV, FIV and Extreme Weather Conditions
- Geohazards, Superspars, Walking Pipelines, and Slippery Foundations: Challenges for Subsea Pipelines
- Overview of the NOAA Ocean Exploration and Research Program and Recent Okeanos Explorer Expeditions

...continued overleaf

Houston Branch

continued...

Courses

- Introduction to Marine Archaeology Course
- METOCEAN Awareness Course
- Introduction to Integrated Marine Site Characterisation Course
- One-day Workshop: Key Elements of Subsea Tiebacks
- Quarterly Subsea Awareness Course

The Houston branch is moving forward at full force! Fortunately, the current industry conditions have not affected our Subsea Awareness Course registrations. We are closely monitoring all event registrations for 2015 and 2016. We hit our goal to raise \$30,000 in student scholarships and ten accomplished students will be awarded scholarships at our Annual Scholarship Fundraising dinner, dance and awards ceremony held on 30 October. The Branch Committees continue to grow as does overall branch awareness throughout the subsea industry and universities. We want to thank all of our committee leaders, committee volunteers and university involvement, volunteers for their SUT dedication. Not to mention, the SUT staff. We look forward to a successful 2016!

www.sut.org/branch/london

London and South of England Branch

The London and South East Branch has had a good year holding a number of meetings and a successful dinner. The concept of the Branch is to promote co-ordination between individuals, disciplines and organisations from the energy (oil, gas & wind), legal, insurance and marine sectors. This is quite unique within the Society as it brings together parties from the international markets who have significant interest in underwater technology but normally have little contact with industry. The committee membership is well represented by members from the legal and insurance sectors who bring with them their own perspective and ideas.

One of the initiatives taken by the committee is map on Google Earth the location of Corporate/Individual Members and Academic Institutions within the region and thereby identify suitable locations to host events.

The committee has developed a good working relationship with Subsea UK which is trade association and champion for the UK subsea industry. This organisation brings together operators, contractors, suppliers and people in the industry.

A 'Young Professionals Group' similar to that organised in Houston has been established led by four very positive individuals. A Wine trail was held at Ocean Business in Southampton and further activities planned including 'Speed Networking'.

The Branch held a Black Tie Dinner on the *PS Elizabethan* in June cruising from the London Eye to the Thames Barrier and return on 4th June. It was a Black Tie event and the weather was excellent, we were able to cruise the Thames in a very enjoyable manner.

Events are held both in the evening and lunchtime. The lunchtime events are of interest in that personnel in the City engaged in legal and insurance prefer that arrangement.

The Branch holds 'Lunch & Learn Events' as this best suits the requirements of the City sector including:

- Outlook for the Oil & Gas Sector (also an evening meeting)
- Metocean Issues
- Decommissioning

The Evening Meetings included:

- Flow Assurance
- Outlook for the Oil & Gas Sector
- Forecast for the Subsea Market

Future events include:

- Pipeline & Subsea Integrity
- Remotely Operated Vessels



Chairman: Brian Jones

Committee

B Jones *Chairman*
 K Broughton *Secretary*
 G Taylor *Hon Treasurer*
 D Brown
 M Calverley
 S Hems
 T Jee
 D Jordan
 I Knight
 A Low
 Dr G Lyons
 P Metcalf
 Prof A Sheno

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North of England Branch

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



Chairman: Dr A Pople

Committee

Dr A J Pople *Chairman*
 Dr J Baker *Hon Secretary*
 Dr I Frazer *Treasurer*
 J Alexander
 P Allen
 Dr S Benson
 M Bingham
 A Ennis
 J Greenwood
 S Read
 A Roberts
 E Waterman
 M Williams
 M Zwanenberg

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The North of England Branch has continued to meet on a bi-monthly basis, and has organised five technical sessions over the period. Additionally we have had a site visit and we ran a Schools Event (details of both below). The meetings have had good attendance over the year with numbers ranging from 35 to 80. We have used two main venues in the vicinity of Newcastle's Central train station in addition to holding a meeting in Middlesbrough.

Committee

The committee of the North of England Branch has attracted some additional committee members, some new and one returning. The current members of the committee represent a cross section of the local subsea businesses and Newcastle University.

Activities

Evening Meetings

In September 2014, 57 people attended an evening meeting at the Centre for Life in Newcastle titled 'A Day in the Life'. Michael Williams chaired the event and introduced three speakers who spoke on the following topics:

- 'A day in the life of a Subsea Engineer' by Phillip Roberts (Principal Subsea Engineer, Strongwork Engineering Limited)
- 'A day in the life of a Master Mariner' by Brad Dillon (Assistant Marine Section Leader, Maersk Drilling)
- 'Analysis and validation against standards for complex subsea components' by Alex Roff (Engineering Director, PDL Solutions (Europe) Ltd)

In November 2014, we held our AGM at the Royal Station Hotel combined with an evening meeting titled: 'Deep sea mineral recovery – technologies and the ecological considerations', which had some late adjustments to the agenda due to illness. The meeting was chaired by Sarah Read and the talks were as follows:

- 'The technology to explore and exploit subsea mineral resources in a commercially viable way' by Stef Kapusniak (SMD)
- 'Life in the extremes: the discovery of hydrothermal vents in the Antarctic and the species that live there!' by Dr Chris Sweeting
- 'An update on Newcastle University and the Neptune Centre' by Professor Nick Wright (Newcastle University)

The evening was attended by approximately 80 people.

In January 2015, Andy Roberts chaired a meeting at the Centre for Life titled 'Emergency Response and Preparedness', which was attended by approximately 50 people. We had talks from two speakers as follows:

- 'SWRP Subsea Response Project – Development of Solutions for Subsea Well Incidents' by Patrick Dooley (Senior Engineer, Wood Group Kenny)
- 'Subsea Pipeline Isolations' by Dr Jerry Baker (Independent Consultant, Baker Marine Technology)

In March 2015, I chaired a meeting titled: 'Installation Challenges in Offshore', which we held at Middlesbrough Football Club and was attended by approximately 35 people. Our talks for the evening were as follows:

- 'The Offshore Wind Industry: A New Era of Transportation and Installation Challenges' by Gordon Clark (General Manager of Operations, MPI Offshore)
- 'Efficient Cable Installation in Offshore Renewables' by Patrick Smyth (the former

North of England Branch *continued...*

Engineering Manager at Reef Subsea UK and now an independent)

This was our first meeting in the Teesside area and good feedback was obtained from those present. We made some good new connections and I hope the branch will be able to hold similar events again in the future outside of Newcastle.

In May 2015, we held an evening meeting at the Centre for Life titled: 'Offshore Decommissioning'. The meeting was chaired by Dr Ian Frazer and comprised three speakers as follows:

- 'Offshore Decommissioning – Recent Activities and Developing Trends' by Don Orr (Decommissioning Assurance Manager, BP)
- 'Engineering Challenges – Allseas Pioneering Spirit project' by Steve Smith (Industry Sector Manager – Marine & Offshore, Bosch Rexroth)
- 'ABLE UK – The Story so Far' by Neil Etherington (Group Development Director, Able UK)

The meeting was attended by approximately 60 people.

Site visit

On 25 February SMD hosted a factory tour for 30 people at their ROV site in North Shields. The visit comprised a short presentation followed by a tour of the ROV workshop and the in-house test-tank facility. The visit was very well received by the delegates.

Schools event

Our branch hosted a schools event at the Great North Museum in Newcastle on 24 March. At the event, six companies with a local presence (GE Oil & Gas, BEL Valves, Bibby Offshore, SMD, IHC Engineering Business, Technip Umbilicals) gave an insight into the engineering projects that they undertake. This provided an opportunity for approximately 35 sixth form students to join graduate engineers and senior engineering representatives from those companies to work through real-life engineering problems and scenarios, and to get an understanding of what subsea engineering involves. Additionally, contextual information was provided on the subsea industry by Dr Jerry Baker and David Liddle, and we had an 'inspiration' address from Bruce Heppenstall, the General Manager at GE Wellstream.

The sub-committee formed to organise the event (Jamie Alexander, Dr Jerry Baker, and Andy Roberts) put together an excellent event that was well received by the students, their school representatives, and the participating companies alike.

Finances

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

Future plans

We will continue to have technical meetings bi-monthly over the next year with a recess over the summer, when we will have a committee meeting but no evening event. Our September 2015 meeting is titled: 'The Science, Technology, Engineering and Economics of Enhanced Oil Recovery', and other identified topics that we are currently working up include evolutions in external inspection and seabed sampling. We will aim to organise one of our evening meetings outside of the Newcastle area in 2015/16. Following the success of our Schools Event we hope to run a similar day in 2016 to continue to engage with the local school and college communities to promote subsea engineering. We are beginning to make plans for a local SUT+ group to provide networking opportunities for our developing engineers.

Norway Branch

www.sut.org/branch/norway



Chairman (2014): Geir Evensen

Committee

N Vågen *Chairman (2015)*
V Fondevik
O Hagesaether
GA Johansen
RD Skre

Contact

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2014

The SAC course in November was fully booked. 20 persons attended.

At the time of the Autumn SAC course, we usually have quite a few participants registered for the Spring course the following year. This time we had none. This turned out to be the situation at the end of the year as well. Although this was quite unusual, the reason was quite obvious – the oil market was in turmoil.

2015

It soon became obvious that the spring SAC course would not be fully booked. Ten weeks before course, the number of participants was well below the lower limit. Unfortunately, we had to cancel the course.

The market situation had deteriorated further and the feedback from both oil companies and the supply business was the same: “Postpone all costs that can be postponed”. SAC courses was apparently on that list.

We attended UTC as usual in the middle of June. We are among of the arrangement organisations.

For some time, SUT Norway have been preparing grounds for a change from the present one; Norwegian Foreign Company to a foundation. Such a change is not unproblematic. Some legal problems had to be sorted out. Much time was spent providing the authorities with the documentation they required. We expected the problem to be resolved be done early 2015. This did not happen.

The problem was still unresolved by the end of the period in July.

**www.sut.org/branch/
singapore/**

Singapore Branch

The Singapore SUT branch is still very much in its infancy having only recently been formally established in Singapore.

Credit to the inception of this branch has to rest with the industry stalwart and ever popular Bill Russell-Cargill, who championed the initial meetings back in 2014. Bill gathered sufficient interest and support to ensure that we had a core nucleus of likeminded subsea professionals who were willing to give up some of their time to ensure that the society could offer the wider community a forum for technical innovation, networking and as the branch becomes more established a vehicle into the industry for young graduates.

Bill hosted an initial meeting in Singapore in late 2014 to test the water with the local business community to see whether there was sufficient interest to warrant the next step.

The evening turned out to be a great success and it was agreed that a Singapore SUT branch was something that could be supported and add value to the region.

With the support of Joyce Bremner we set about putting the wheels in motion to establish the branch and appoint a committee. In January 2015 we had elected a committee of 14 and voted in the necessary office bearers.

Whilst the back office tasks were important, all agreed that our first priority was to get started planning the first official technical meeting so that we could engage with our local colleagues and maintain the momentum that had been generated by Bill.

The first technical meeting was held on the 24th March and attended by over 130 local and overseas members and guests. The evening was a resounding success with three excellent presentations on AUV's and their expanding technical capabilities.

Since this initial meeting in March a second very successful technical evening was hosted in June in conjunction with the SUT Subsea Awareness course which was also run in Singapore. The branch were again delighted to record over 80 visitors despite this falling in the middle of the traditional holiday season.

As we progress towards the end of 2015, a third technical meeting is planned for the 22 October which we hope will continue to inspire our local colleagues to attend and help build the branch.

With the continued support of our industry colleagues I am certain that the branch can build on these early successes and go from strength to strength.



Chairman: Derek Donaldson

Committee

D Donaldson *Chairman*
S Redford *Vice Chairman*
C Ferguson *Treasurer*
C Campbell *Secretary*
M Colbridge
A Gleeson
H Gu
A Horsfield
CK Lee
W Lee
X Liu
G Rawlinson
J Vaughan
R Zwinkels

Contact

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Education and Training



Chairman: Stephen Hall

Committee

S Hall *Chairman*
 Dr RL Allwood *Secretary*
 Dr C Ainsworth
 Prof L Boswell
 L Davis-Smith
 K Dinwiddy
 M Franklin
 JAT Grant
 R Harrington
 D Havard
 N Hall
 Prof S Huang
 G Jackson
 E Kinghan
 E Macdonald
 Dr B MacKenzie
 S Peplowski
 Dr J Potts
 D Prosser
 Dr D Purdie
 S Smart
 P Smith
 H Venables

The Society for Underwater Technology retains registered Charity status in the UK through our value to wider society as an organisation that educates, informs and promotes the broad field of Underwater Technology to the general public, schools and colleges, hence it is a key output for SUT to be able to demonstrate that we are doing so. We aim to help ensure a steady supply of young people into our sector, improve public understanding of what our membership gets up to in their day-to-day business or research activities, and inform decision-makers about the issues that need to be understood to ensure safe, sustainable use of subsea technology.

Our Education and Training Committee has members from the oil and gas sector, universities, research institutions, our sister Learned Societies, training organisations and special interest groups such as Sea Vision UK. We provide content on careers and education choices through the SUT web page, and educate and inform through contributions to SUT's YouTube channel, Facebook page and Twitter feed.

Attendance at Committee meetings hasn't been up to the usual numbers this year as the present downturn in industry has impacted member's freedom to travel, and we look forward to making better use of virtual meeting technology to enable wider participation of UK and International members in the work of the Committee. The October 2015 meeting took place on board the Royal Research Ship Discovery while she was in London for the Natural Environment Research Council's 50th Anniversary – it will be SUT's turn for a 50th birthday party next year.

The best-known activity within the UK remains our annual marine science, engineering and technology lectures to schools, delivered for some years now at the National Maritime Museum in Greenwich on the approach to Christmas, and repeated on an ad-hoc basis at other venues through the year, as well as finding a home on SUT's YouTube channel. We aim to cover a broad range of subjects, and for the December 2014 lectures covered offshore hydrocarbons, offshore renewable energy, underwater robotic systems, marine biology and how maths and physics are used at sea. I'm pleased to report that at least half of our presenters are female, helping show school-age attendees that our world is open to all, and offers a really interesting and ethically sound range of career options for today's environmentally-aware youngsters.

We've made a start to addressing the concern of Council that we should pitch more activities at a younger age group to fire-up enthusiasm before life-changing choices of exam subjects are made. One tangible outcome is that a group of SUT Members, led by former President Bil Loth, have been writing chapters for a new book to be published before Christmas 2015. Designed and edited by HQ staff member Emily Boddy, it goes by the catchy name '*Can a Lobster be an Archaeologist?*' (subtitled '*Quirky Questions and Fascinating Facts about the Underwater World*'). The book is aimed at 10-14 year-old readers and includes chapters on a selection of underwater technology areas that reflect the wide interests of the Society, such as deep-water search and salvage, renewable energy from the ocean, adapting to environmental change, the rise of robotic systems and how cables carry the internet across the great ocean basins. The stories are illustrated with attractive original artwork and we hope it will be a hit.

At the end of September the Chair gave a presentation to the European Marine Science Educator's Association on the role of Learned Societies in enhancing 'Ocean Literacy' – a term that is emerging across the global marine science community to describe the process of creating a public who understand the basics about ocean health and sustainable exploitation.

Education and Training

SUT is represented on the government's Marine Science Coordination Committee Communications Working Group, and jointly with IMarEST is linking with science educators in the developing world through our Observer Member status at UNESCO's Intergovernmental Oceanographic Commission (IOC-UNESCO) – it helps that the Chair of SUT's education and training committee was elected Vice-Chair of IOC-UNESCO in 2015, helping ensure that SUT has a high profile within the UNESCO system.

The IOC work highlights that SUT is rapidly internationalising, and as well as the Head Office activities there are very substantial education and outreach efforts in our Houston Branch, Perth Branch and Aberdeen Branch. Our younger SUT members are working through SUT+, and the USA student groups to help promote what SUT does to the next generation of subsea technologists. We've also initiated links with educators and industry in Qingdao, China, to enhance SUT's role in a region that is rapidly becoming the key marine science and technology hub for the Asia-Pacific region.

It's an exciting time to be entering our world as new challenges emerge not just in oil and gas but in carbon capture and storage, autonomous underwater vehicles of increasing capability and intelligence, integrated marine spatial planning, offshore aquaculture, renewable energy, subsea cultural heritage and many other areas.

Finally yes – a lobster can be an archaeologist – but you'll need to read the book to find out how!

Educational Support Fund Management

The Educational Support Fund (ESF) aims to identify high quality students and enable them to enter the marine sector – more specifically, underwater engineering, technology and science. In so doing, we endeavour to expose them to the challenges and satisfaction of a career in the offshore sector in its widest sense.

You will remember that funding is now available to suitably qualified students from all parts of the world to cover their studies on approved courses in any country.

As ever, the quality of supported students remains very high. In the undergraduate category six students graduated this year, all gaining 1st Class honours degrees.

The Fund has now supported in excess of 275 students since 1990, most of who have gone on to relevant and successful careers in industry sectors that are relevant to the interests of the Society.

We have continued to find it very difficult to attract significant donations from industry into the ESF. However, the Society will be transferring £24,336 that equates to the 10% of membership subscription income that is hypothecated to the Fund. There was also some £6,219 additional income to the Fund, most of which was raised in voluntary donations at our dinners in Aberdeen and London.

We shall of course continue our efforts in fund raising from an industry whose future sustainability is very much dependent on the recruitment of new talent

We should note that our overseas branches, when there is significant income available, also run similar schemes to support students.

We support full-time master's students for one year (taught) courses, or their part-time equivalent. For undergraduates, we do feel that we have a moral obligation to support them over at least two consecutive years, as long as the students' reports

continue to be satisfactory.

Extracting the information from the accounts, you will see that the funds carried forward at the end of the year were £240,922 of which a maximum of around £50,000 has been committed in grants for 2015–2016.

The accompanying table summarises the courses, with institutions, that our ESF supported students undertake.

Summary of Undergraduates graduating in 2015

Southampton	<i>Oceanography</i>	1st
Southampton	<i>Ship Science/Engineering Management</i>	1st MEng
SAMS	<i>Marine Science</i>	1st
SAMS	<i>Marine Science</i>	1st
SAMS	<i>Marine Science and Arctic Studies</i>	1st
Southampton	<i>Naval Architecture</i>	1st MEng

Summary of Undergraduates continuing in 2015-2016

SAMS	<i>Marine Science</i>
Bristol	<i>Mechanical Engineering (MEng)</i>
Southampton	<i>Geology with Physical Geography</i>
Liverpool	<i>Marine Biology and Oceanography</i>

Summary of Finishing Postgraduates

Cranfield	<i>Offshore Ocean Technology (Subsea Eng)</i>
Cranfield	<i>Offshore Ocean Technology (Subsea Eng)</i>
Aberdeen	<i>Subsea Engineering</i>
Stavanger	<i>Petroleum Geoscience Engineering</i>

Summary of Postgraduate students continuing in 2015-2016

Stavanger	<i>Environmental Technology</i>
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International

This year has represented a watershed for SUT. Since 1966, the Society has been a UK-centric learned society but in 2015, in preparation for its fiftieth anniversary and for the future beyond, it has become a fully-fledged international organisation with a constitution which, hopefully, is fit for that role. The International Committee has been deeply involved with the process of consultation with non-UK branches, drafting the amendments to the constitution, and assisting with the actions needed for the changes to be legally implemented. Others, of course, have been involved but the International Committee can take satisfaction from the fact that the Committee's primary purpose of assisting with the process of transforming SUT into a truly international organisation has made significant progress during the year.

The Committee will continue to have an important role in the future. Emphasis has switched during the last two or three years from providing encouragement and support for the formation of new non-UK branches to the need for integrating branches into a coherent world-wide organisation with shared ethical values and professional standards. That does not mean to say that the drive to establish branches in areas where SUT is not active at present will diminish. Ian Gallett in his role as International Business Development Executive is as active as ever. At last, it seems, SUT has an active branch in Singapore, and activity in Canada (St. John's) and possibly Qindao (China) is encouraging. In the future, it might be appropriate to have regional groupings with an established branch as leader in the region.

Much remains to be done to ensure that SUT functions in a truly international manner. The constitutional framework is in place but more active participation of non-UK members in policy making and implementation will be needed. SUT technical committees are already involved in direct co-operation at branch level. The International Committee is seeking to expand its membership with representatives from the larger non-UK branches. There will be non-UK representatives on the SUT Council in future. These initiatives bring into focus the need for effective communications, electronic aids for meeting participation when participants are distributed around the world, and the management of activity to cope with different time zones.

Another objective of the International Committee is to encourage or organise SUT participation in conferences, exhibitions, training courses and other international events, on its own or with other partner organisations. Again, Ian Gallett, as International Business Development Executive, has been as energetic as ever with activity in Canada, China, Norway and the USA.

Although the year just past has seen significant progress on internationalising SUT, the year ahead presents many challenges. Watch out for next year's report.

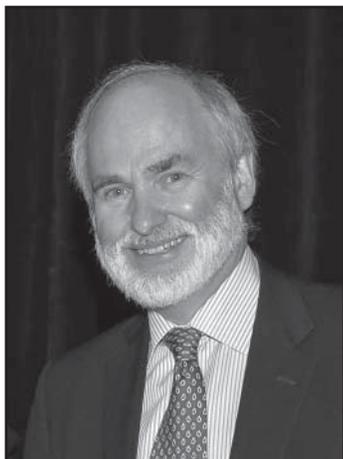


Chairman: Dr David Kirkley

Committee

Dr DW Kirkley *Chairman*
 INL Gallett *Secretary*
 Dr RL Allwood
 L Ayling
 R Binks
 J Cattanach
 C Dudgeon
 B Green
 B Jones
 D Jordan
 Dr WD Loth
 G Lyons
 P Metcalf
 J Roberts
 M Witton

Policy Advisory



Chairman: Prof Gwyn Griffiths

Committee

Prof G Griffiths *Chairman*

Dr RL Allwood *Secretary*

R Barrett

DA Brookes

ST Culshaw

Dr R Gatliff

S Hall

Dr DW Kirkley

Dr WD Loth

Lt Cdr RJ Rogers

Chaired by the Society's President, the PAC does not meet on a regular basis but rather convenes when a need is identified. When required, the core committee can be supplemented by additional resources.

In 2013, the PAC, under the chairmanship of Bil Loth, identified a need to attract talented young people to ocean science and engineering. Engaging readers in their formative, pre-teenage years was a particular target. Through the effort of a number of members, working with the Society's Publications Officer, Emily Boddy, an illustrated book of 28 essays, peer reviewed by an appropriate age group, has been produced. '*Can a Lobster be an Archaeologist? Quirky Questions and Fascinating Facts about the Underwater World*', will be available from November 2015.

As part of the Society's review of its governance and structures, Council has debated the role, method of working and membership of the PAC. New terms of reference have been agreed. These make it clear that the PAC could operate across all territories where SUT has an interest, that representatives of our overseas branches would be included on the committee, and that there will be a formal channel, through Council, for overseas branches to raise topics for the PAC agenda. The first meeting of the reformed PAC is to be in November 2015.

Publications

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

The annual publication rate of three issues of the journal was maintained during 2014-15 (November, March and July). The Journal still remains in a transitional phase caused largely by the challenges of re-joining the ISI (Institute for Scientific Information, now part of Thomson Reuters) Impact Factor rating system. The journal remains 'open access' with authors not presently charged for publication; it is published online at: www.ingentaconnect.com/content/sut/unwt. Past SUT conference proceedings continue to be published online at www.onepetro.org. An ongoing action for the Publications Committee is to invite a wider international membership of the journal's Editorial Board.

The SUT magazine *UT2*, which is a joint venture between the SUT and Dr John Howes, was published six times in 2014-15. The magazine continues to receive good feedback from the membership.

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

Other publications during the year included the new book for children aged 10-14 titled '*Can a Lobster be an Archaeologist? Quirky Questions and Fascinating Facts about the Underwater World*'. This book aims to excite and inspire children to learn more about the many different areas of underwater technology and, ultimately, to consider a career in the ocean. The book is comprised of 28 short articles written by members and friends of the SUT, and each one has been beautifully illustrated by artist Rachel Hathaway. Emily Boddy, Publications Officer at the SUT, has been working with the authors this year to create the book, which will be for sale in November from the SUT website.

The Publications Committee continues to receive excellent, enthusiastic and highly organised support from the SUT. Michaelagh Broadbent as Journal Officer now works exclusively on the Journal in a part-time capacity; Emily Boddy as Publications Officer works on all other SUT publications plus the website.



Chairman: Dr Martin Sayer

Committee

Dr MDJ Sayer *Chairman*
 M Broadbent *Secretary*
 Dr RL Allwood
 L Ayling
 E Azzopardi
 E Boddy
 Prof G Griffiths
 M Hibbert
 Dr R Rayner

Diving and Manned Submersibles



Chairman: Dr John Bevan

Committee

Dr J Bevan *Chairman*
 Dr RL Allwood *Secretary*
 G Anthony
 Cdr A Bax
 K Bazeley
 R Bull
 M Caney
 B Cole
 M Dunkley
 P Evans
 Dr O Firth
 A James
 G Laden
 S Marine
 A Marshall
 G Momber
 T Newman
 R O'Kane
 M O'Meara
 R Pirie
 Dr MDJ Sayer
 M Seares
 C Sherman
 DR Shiers

Our committee has met three times since our last report: 17 July 2014, 18 February and 20 May 2015.

A broad range of issues were dealt with including noting the important amendments to the diving Approved Codes of Practice (ACoPs). These were largely welcomed by the diving industry since they incorporated many of the recommendations including those voiced through this committee. Papers put forward for the SUT Journal included 'Trimix for Archaeology' and 'Maritime Archaeology and the Commercial Sector'.

On Scientific Diving, the SUT is contributing, with the European Scientific Diving Committee, to a fund for early stage researchers and students to attend suitable meetings and events.

Following the committee's expressions of concern over the policies enforced by the Marine Management Organisation (MMO), a meeting was held on 19 March at SUT headquarters in Fetter Lane with John Tuckett, newly-appointed CEO of the MMO. It was not a very productive meeting, with Mr Tuckett appearing to be in denial about any problem with the industry. Sadly, no improvement in the situation has been observed since that meeting and the outcome to date is disappointing.

This year the committee supported the nomination of Jane Bugler of IMCA for the Houlder Trophy.

Presentations were made to the committee including the underwater filming of 'The Abyss' and the 'Top Ten successful Underwater Treasure Operations'. The SUT has produced a book on underwater technology for 10-14 year olds, to be published for this Christmas, to which members of the committee have contributed several chapters.

Environmental Forces

The SUT Group on Environmental Forces held two events during the year 2014/5. The October (104th) meeting took place at Imperial College, with one technical presentation, by David Pizer of Pelamis, entitled 'An Overview and Update of the Pelamis Wave Energy Converter'. Dr Pizer described the main advantages of the Pelamis system compared to other wave power generators and how optimisation modelling using high power parallel processing is forming a major part of the ongoing development project.

Two summaries, by Prof Qingwei Ma of City University, on the 2014 ISOPE conference, held in Busan, South Korea, and by Dr Tom Adcock, of Oxford University on the OMAE 2014 conference held in San Francisco, were given, with an emphasis on papers of particular interest to the SUTGEF group.

The second meeting of the year (SUTGEF 105th) was held at City University in January 2015, at which two technical papers were presented. The first, by Dr Peter Lai, from Saipem UK on 'Engineering Forecasts and Monitoring for Offshore Construction Operations' dealt with Saipem's approach to the forecasting of engineering responses to varying environmental conditions such as sea state and wind velocity. He outlined how Saipem's approach had advantages over traditional processes, for example in predicting crane tip motion.

The second paper at the 105th meeting was presented by Dr Benedict Rogers of Manchester University on 'Smoothed Particle Hydrodynamics (SPH): Latest Developments for Violent Flows and Impacts'. Dr Rogers described how the SPH method of modelling particle tracks is helping in the interpretation of small scale hydrodynamic processes, such as in wave energy converters and turbines.

As has become the norm at SUTGEF meetings, speakers were presented with certificates in appreciation of their contribution to the work of the group.

SUTGEF is continuing its links with the 'Fundamentals and Reliability of Offshore Structure Hydrodynamics' (FROTH) group, with the autumn 2015 (106th) meeting to be held jointly with the forthcoming FROTH progress meeting in Oxford.



Chairman: Prof Qingwei Ma

Committee

Prof QW Ma *Chairman*
 AN Moore *Secretary*
 Prof T Adcock
 R Addelee
 Dr R Ahilan
 Dr RL Allwood
 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
continued below...

Dr R Gibson
 Prof D Greaves
 G Grewal
 Dr J Hamilton
 Dr G Jeans
 M Johnson

I Leggett
 Dr A Raby
 Dr R Sheikh
 Dr E Spentza
 Dr J Spinneken
 R Sproson

Dr R Standing
 Prof P Stansby
 Prof C Swan
 Prof P Taylor
 Dr P Tromans
 T van den Bremer

A Watson
 WTan
 R Webb
 Dr G Weymouth
 Dr J Zang

Marine Renewable Energies



Chairman: Prof John Sharp

During the past year, the committee has held its usual four meetings with presentations from John Sharp (Alderney Tidal energy), Nicolas Wallet (Ocean Energy, Europe), Kevin Black (Partrac , Turbulence in Marine Environments), Sian Wilson (Role of Crown Estate) and John Griffiths (Testing and Guidelines). The committee also reviews recent conferences related to marine energy. An increasing activity has been to engage with international developments in the area.

The annual plan of action was reviewed and updated at the March meeting. It was felt that more emphasis should be given to the topic of financing marine renewables. The committee was also pleased to note that the priority topic from previous action plans to include a marine renewable energies page as part of the SUT website has now been achieved.

The annual All Energy Conference was held in Glasgow in May; SUT is the Learned Society Patron to this event and was involved in its conception some 15 years ago. The committee assisted with the selection of the proposed contributions to the six sessions of the wave and tidal programme and members of the Committee chaired relevant sessions at the conference.

The Lennard-Senior award, initiated in 2011, was given in 2015 to Andy Hunt (Engineering Manager SME Ltd) in recognition of his work in developing the PLAT-O tidal energy system. As in previous years, committee members nominated candidates for the award and then voted on those put forward.

Committee

- Prof J Sharp *Chairman*
- Dr RL Allwood *Secretary*
- K Buckle
- S Cheeseman
- J Colby
- P Davies
- D Flood
- P Fraenkel
- INL Gallett
- Dr M Gillie
- J Grant
- J Griffiths
- J Hulm
- D Kerr
- M Lumsden
- Dr B MacKenzie
- Dr S Merry
- N Morgan
- M Murphy
- N Murphy
- R Newman
- continued below...*

Dr R Norman
D Nunn

J Patten MBE
G Plant

D Reid
Dr M Stanley

R Sykes
S Wilson
M Wrightt

Ocean Resources

Continued heavy workload for those members employed by both government and industry has meant that the Committee has not met during the period July 2014 to June 2015. However, it is recognised that the ocean's resources (other than offshore hydrocarbons and renewables) are becoming increasingly important to our well-being, and ultimately perhaps the sustainability of life.

The most recent review exercise undertaken by this Committee had seen the following subjects being the focus of its work in the future:

- Methane hydrates
- Mariculture
- Fishing
- Marine genetic resources
- Marine aggregates
- Marine archaeology/wrecks
- Law of the Sea
- Marine policy
- International Ocean Drilling Programme
- International Maritime Organisation
- OSPAR
- International Hydrographic Organisation.

With undersea mining activity now also becoming of interest to many nations, it is planned to re-convene the meeting of this Committee in the very near future.

Committee

TBA *Chairman*
Dr RL Allwood *Secretary*
Dr N Auchterlonie
C Carleton MBE
Prof D Cronan
J Hind
Dr Q Huggett
Dr P Jackson
Dr R Kirby
N Langhorne
Dr B MacKenzie
N Macpherson
G Plant
J Riby
S Shastri
Dr PA Verlaan
Dr K Whitelaw
J Wolfe

Offshore Site Investigation and Geotechnics



Chairman: Andy Barwise

Committee

A Barwise *Chairman*
 T Carrington *Secretary*
 P Allan
 Dr RL Allwood
 J Arthur
 P Baggaley
 M Baker
 A Benson
 M Brown
 N Carey
 S Chenicheri Pulukul
 W Cleverly
 M Cook
 D Coursey
 M Cowie
 K Dalton
 M Finch
 I Gallett
 K Games
 S Gooding
 K Hampson
 D Huws
 R Hobbs
 Prof R Jardine
 P Larkin

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

Short courses for industry and students

In June 2015, a one-day masters course was held at Imperial College, London, for the sixth successive year. The course was attended by approximately 75 MSc students from Imperial College and other institutions. The committee would like to thank Richard Jardine of Imperial College London and Tim Carrington of Fugro for organising the event. The event has become a regular event for the committee and fulfils one of our key aims of attracting students into industry.

Guidance notes and standards

The final version of, ‘Guidance notes for Geophysical and Geotechnical Ground Investigations for Offshore Renewable Energy Developments’ was published in 2014 and is now available for download from the SUT website and is becoming an important reference document in the growing offshore renewables market sector

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

- Top Hole Well Engineering Guidelines
- Geotechnical Investigations for Marine Pipelines
- Geotechnical Investigations for Subsea Structures

The next document to be ready for publication will be the Top Hole Well Engineering Guidelines, this document which has gone out to industry for comment and will be finalised and published early 2016. The other two guidance notes are expected to reach draft status in 2016.

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

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

Houston and Perth Branches of the OSIG Committee

The Houston and Perth OSIG Committees continue to develop their programme of events to strengthen their ties between industry and academia. The respective chairpersons for 2015 were Zenon Metina-Cetina (Houston) and Sarah Elkhatib (Perth) and UK committees regularly communicate, and had an OSIG meeting in Oslo in June 2015. The three Chairs have quarterly teleconferences to ensure the aims and objectives of a global OSIG are aligned.

Closing comments

The OSIG committee has continued to work hard on the short courses and guidance notes and is now starting preparation for the next main SUT OSIG conference in 2017.

V Latron	R Metters	J Powell	P Taylor
M Lawrence	N Morgan	T Powell	A Muir Wood
D Long	R Orren	R Rowland	G Wood
A Maconochie	J Osborne	O Ruden	G Xu
Z Medina	J Peuchen	R Salisbury	

Offshore Site Investigation and Geotechnics

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The venue is now booked for September 2017 and the call for papers will shortly be issued. The on-going energy, commitment and contribution of the Full & Associate Members have been superb. In my 2nd annual report as Chairman I would like to thank all committee members for their continued efforts and enthusiasm, especially to all those who give their time in organising and presenting at the various events. My particular and personal thanks go to Tim Carrington of Fugro, whose support as Secretary and Vice Chairman ensures that committee continues to run smoothly.

Salvage and Decommissioning



Chairman: Moya Crawford

The International Salvage & Decommissioning Committee (ISDC) has been operating in both the United Kingdom and the United States during the current financial year.

In the UK, the Committee has consolidated its multi-disciplinary ‘Case’ approach, and has added ‘Money’ to Life, Property and the Environment, by adding a Business Case to the Safety Case, Assurance Case and Stewardship Case.

During the year, Charles Hume from Shipowners P & I has stood down, due to retirement. We thank him sincerely for his sage advice, but will miss him as an individual. He has been replaced by Britt Pickering, who adds to the scientific knowledge base of the Committee, as well as the marine and liability base. Professor Ben Wilson from SAMS too strengthens research into the positive and negative impacts of marine renewables. Coverage of this sector is further strengthened with the addition of Miquel Angel Torres from Repsol.

Using this well-rounded base, the Committee has engaged once again with the Marine Alliance for Science and Technology Scotland, to organise a workshop at the Annual Science Meeting held at Heriot Watt University, Edinburgh. The feedback from this event is that it brings together a very different mix of people, and is well worth attending.

Committee

M Crawford *Chairman*
 Dr RL Allwood
 R Aspden
 K Broughton
 B Browne
 K Campbell
 A Chamberlain
 Prof M Elliot
 M Hoddinott
 C Falconer
 S Frisby
 N James
 N Jenkins
 J Lanting
 S McKenna
 D MacGeorge
 J Noble
 D Orr
 Prof N Owens
 Prof D Paterson
 B Pickering
 J Roberts
 H Shaw
 M Torres
 W Thornton
 B Twomey
 J Ward
 Prof B Wilson

Subsea Engineering and Operations

Over many years, the Subsea Engineering and Operations Committee has been responsible for organising the majority of events that have taken place in London and the south of England. With the formation of the London and South of England Branch in 2013 that would be taking on the role of overseeing all SUT events in the region, it was agreed by Council that the Branch Committee should co-opt key members of the SEOC to assist in this function for a limited period during which time the SEOC would be stood down.

In my last annual report, I mentioned the looming cost challenge facing the offshore oil and gas industry. With the price of oil dropping by more than 50%, technology development and smarter, value-based system engineering can be our contribution to improving the economic viability of subsea developments and providing fit for purpose facilities.

During the year the following events, in the area of subsea engineering and operations, were arranged:

5 Feb 2015 – Lunch & Learn meeting – Outlook for the Oil and Gas Sector

Alec Mitchell – Senior Analyst, Douglas Westwood.

19 February – Evening meeting – Outlook for the Oil and Gas Sector

Steve Robertson, Director, and Rod Westwood, Associate Director of Douglas-Westwood presented the firm's outlook for the next five years considering both the near-term macroeconomic outlook and specific sector drivers for a variety of offshore energy business services and equipment lines. Analysis was drawn from the firm's published research and extensive proprietary in-house data, in addition to the insight and experience gained from the many consulting and transactions engagements completed throughout 2014.

12 March – Evening meeting – Using Flow Assurance to ensure Fit for Purpose cost effective asset design and management

Dr Shaun Johnston, Wood Group Kenny. Given the current demands on the Oil and Gas industry to manage costs effectively, it is essential to minimise CAPEX and OPEX spends throughout the life of an asset. Flow Assurance is key to keeping a design fit for purpose, ensuring the right infrastructure and applying the right technology, while asset operation and management is carried out in a safe, efficient environment maximising production and revenue with optimum OPEX. The presentation featured some case studies of how flow assurance can be used to achieve this goal.

26 March – Lunch & Learn meeting - Metocean Issues

Mark Calverley, Global R&D Manager, Metocean at Fugro spoke on Understanding Metocean risks and ways of mitigating them during operational planning and execution of construction projects.

9 April – Evening meeting

Dr Russell B Wynn, Chief Scientist, Marine Autonomous and Robotic Systems (MARS), National Oceanography Centre, Southampton. The recent MASSMO (Marine Autonomous Systems in Support of Marine Observations) project saw a fleet of unmanned robotic vehicles patrolling the seas off southwest UK in Oct–Nov 2014. This ambitious 'demonstrator' project was led by the National Oceanography Centre, supported by capital funding from the UK Government 'Eight Great Technologies' programme, an Innovate UK 'Small Business Research Initiative' (SBRI), and co-funding from Defence Science and Technology Laboratory (DSTL).



Chairman: Iain Knight

Committee

I Knight *Chairman*
 Dr RL Allwood *Secretary*
 M Avent
 D Bruton
 Dr R Chandwani
 C Cross
 P Ferguson
 S French
 P Hawthorn
 M Hudson
 A Hunt
 Dr R Jain
 P Jordan
 R Luff
 J McGrail
 J Robson-Brown

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Subsea Engineering and Operations

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6 May – Lunch & Learn meeting

Arnstein Eknes, DNV GL spoke on Independent qualification for Decommissioning.

14 May – Evening meeting

Cranfield University student group project team members presented their work on the exploitation of naturally occurring methane hydrate deposits. Methane hydrate deposits are known to exist in both onshore permafrost regions and subsea in water depths exceeding 500 metres. However, there is still considerable uncertainty over both the locations of these deposits and the volume of methane that may be trapped, but current estimates are well in excess of all known conventional fossil fuels discovered to date.

11 June – Evening meeting

James Hall, Director, Infield Systems presented a Subsea Market Overview that covered the following topics:

- Exploring the offshore macro environment (breakeven economics and oil price expectations)
- EPIC and SURF Capex expectations
- Subsea OEM capacities, market share and geographic exposure
- Infield's tree order expectations
- Subsea project awards
- Major subsea trends: consolidation, strategic partnerships and cost saving
- Conclusions

International Underwater Vehicles and Robotics Group

The international Panel on Underwater Robotics (PUR) was successfully formed from the amalgamation of the Underwater Robotics Group (URG) and the Specialist Panel on Underwater Vehicles (SPUV) that worked under the Engineering Committee on Oceanic Resources (ECOR).

The inaugural meeting of the Panel was held in St. John's on 15 September 2014. In attendance were representatives from Australian Maritime College – University of Tasmania, Memorial University of Newfoundland, International Submarine Engineering Ltd., Kongsberg Maritime and the SUT executive. The meeting included a review of the histories of the former groups. The new unified Panel will continue to operate with an emphasis on face to face meetings of its international membership on an annual basis. The initial Panel membership includes those former members of both groups and initial correspondence/meeting minutes were distributed widely to those members. However, an upcoming UK based meeting is scheduled in September 2015 at the National Oceanography Centre, with a goal to ratify the Panel terms of reference and identify the active membership base. In keeping with previous SPUV initiatives, the Panel will reach out to the greater community to broaden meeting attendance and activities.

The Panel has decided to refocus its workshop/conference support efforts. Instead of supporting the Unmanned Underwater Vehicle Showcase, the Panel will explore some form of formal participation with the existing IEEE AUV bi-annual conference series and align itself with conferences or workshops that better capture the interests of Panel membership. The Panel is pleased to announce that SUT will be a technical co-sponsor for the upcoming IEEE AUV 2016 conference to be held at the University of Tokyo in November 2016. Implementation details of this arrangement will be discussed at the upcoming Panel meeting.

Committee

N Bose *Chairman*
 Dr RL Allwood *Secretary*
 Dr J Albiez
 P Bennett
 Dr J Evans
 M von Eye
 J Ferguson
 Dr A Forrest
 D Grant
 Prof G Griffiths
 D Hook
 J Jamieson
 C Karminski
 Prof D Lane
 R Lewis
 A Morse
 A Phillips
 M Postle-Hacon
 Dr V Rigaud
 D Shand
 A Tonge

Underwater Science Group



Chairman: Dr Martin Sayer

Committee

Dr MDJ Sayer *Chairman*

Dr RL Allwood *Secretary*

P Baker

R Forbes

Dr I Gibb

S Hall

Dr Q Huggett

Dr A Jensen

N Langhorne

Dr B MacKenzie

S Marine

G Momber

H Powell

R Powell

The Underwater Science Group has a large and varied membership. Although it has not met over the past 12 months, the facility provided by the SUT continues to afford a forum for discussion of underwater science, the review of diving technologies employed for the delivery of science and the appraisal of underwater scientific methods. One of the continuing strengths of the group is that it provides an opportunity by which academia and industry can cooperate on and discuss issues of common scientific interest but from differing operational perspectives. This is very much reflected in the membership of the group which has representatives from the university, research council, charity, industry and military sectors. In addition, the group has membership with scientific and archaeological interests. The group maintains its broad membership mainly through the addition of corresponding members to those who regularly attend the meetings and through links with other underwater science groups in Europe, the United States, India, Australia and New Zealand.

The raising of the scientific profile of the Society's journal *Underwater Technology* remains a key area for the underwater science group. The USG is working to generate a more consistent stream of submissions to include topical review articles that are pertinent both to the fields of underwater science and underwater technology, and through topical special issues. The group continues to support the editorial board of the Society's journal by maintaining a membership with a broad inter-disciplinary range of scientific knowledge which helps to underpin the formal peer-review framework for journal submissions.

Members of the USG contributed to the 1st European Conference on Scientific Diving which was held in Stuttgart in March 2015.