

THE BRIDGE

LINKING
PAST AND PRESENT
WITH THE FUTURE



August 2016



PRIFYSGOL
BANGOR
UNIVERSITY



The School of Ocean Sciences Association (SOSA) was founded in 1994 by Sinclair Buchan and George Floodgate. Its aim is to foster close links with all those who have passed through the SOS in Menai Bridge over the years. For further information:
www.bangor.ac.uk/oceansciences/alumni
www.facebook.com/sosbangor

If this newsletter is sent to a wrong address or e-mail, please notify us as soon as possible by going to:

www.sos.bangor.ac.uk/oceansciences/alumni

or contacting

b.w.perkins@bangor.ac.uk

President/Head of SOS

Chris Richardson
c.a.richardson@bangor.ac.uk

Chairman

Mick Cook
mick@mickcook.com

Associate/Founder

Sinclair Buchan
sinclairbuchan@gmail.com

Secretary

Paul Butler
p.g.butler@bangor.ac.uk

Treasurer

David Assinder
d.assinder@bangor.ac.uk

Alumni Development

Bethan Perkins
b.w.perkins@bangor.ac.uk

Editor

Kevin Deeming
kevin@kevjen.com

Chairman's Note

This time last year we were recovering from our very successful Alumni re-union that was planned to celebrate the replacement of Westbury Mount with the new Marine Centre Wales (MCW). When we started planning that event, we thought the building would have been completed in time for the re-union. Alas, it was not to be. Delays in completion resulted in the grand opening occurring on the 5th July 2016. Significantly, MCW was opened by HRH, Charles, The Prince of Wales - a great honour for the SOS and the university. A full story, together with photographs from the day will be published in the next edition of The Bridge. Regrettably, your Chairman was unable to attend due to a prior commitment but is assured by all that the sun shone, The Prince was extremely well briefed and engaging and the day was enjoyed by all who attended.



Believe it or not, the School of Ocean Sciences Alumni Association (SOSA) is 21 years young this year and this has set your committee thinking about its role and what actions we need to take to ensure another 21 successful years. With this in mind, we recently conducted an on-line survey of SOSA members soliciting opinions using the SurveyMonkey web-site. The results of the survey are detailed on pages 10 and 11 of this newsletter. Some of the results were somewhat revealing and unexpected. I am very interested to hear your feedback on these. Please e-mail at mick@mickcook.com with any thoughts/suggestions you may have. It would be good to hear from you before our next committee meeting in September.

Here in the UK and Europe we are just digesting the results of the UK In/ Out European Union Referendum where the Brexit vote came as a bit of a surprise to a lot of people. It has certainly sets the tongues wagging. Rarely a day passes when I don't have in-depth discussions about what it all means. It has certainly shaken up the political establishment. At the time of writing, we have a new Prime Minister, a possible change of leadership in the official opposition and inevitable threats from Scotland to leave the UK. This period of uncertainty coincides with a period of on-going uncertainty in the offshore energy industry; a significant employer of SOS alumni resulting in a double dose of uncertainty for some of those working in the marine science sector. A significant number of economists are forecasting imminent doom but there again they are on a par with weather forecasters in the UK when forecasting our notoriously changeable weather - and about as successful in their predictions! Life moves on...

In these austere times, we have not been able to raise sufficient sponsorship to print and post this edition of The Bridge. Hence, it will only be sent to those members for which we have an e-mail address. If you suspect you know Alumni that may not have provided us with an e-mail address, can you please forward them to Bethan Perkins (b.w.perkins@bangor.ac.uk).

Many thanks,

It is always refreshing to receive an e-mail with an article or some personal news. So, next time you have something to share, remember THE BRIDGE!

THE BRIDGE is a SOSA publication, free of charge to undergraduates, graduates and staff of the School of Ocean Sciences (SOS) and available to others through registration with the Secretary. Advertisements are carefully vetted but neither Bangor University nor SOS can take responsibility for them. The articles printed here, to the best of our knowledge, were correct at the time of going to press. The opinions expressed in THE BRIDGE are those of the contributors and are not necessarily shared by Bangor University, the SOS, the SOSA committee or the Editor.

Cover
Photograph
by

© John Hallet
www.dreamstime.com

ROAD TO ICTHYOLATRY

In the autumn of 1973 when I arrived at the Marine Science Labs in Menai Bridge for the M Sc in marine biology, I intended to take a thesis project on macroalgae. By Christmas all had changed and I had become ichthyolatrous. This is a calling I have followed to the present day.

I had taken a BSc joint degree in Botany and Zoology at Hull, and had followed this with a year of teacher training. Although my leanings were more towards the world of plants than animals, my undergraduate studies had re-awakened a childhood interest in marine life. Taking the MSc in marine biology on offer at Bangor seemed to be an ideal way to get some extra academic ballast. I applied late and was offered a place on the course only because somebody dropped out at the last minute. As a result, I resigned from my school-teaching position after less than 6 weeks in the job, much to the chagrin of the head, and set off for Bangor.

How was I converted to ichthyolatry? The answer starts with the unlikely combination of a hockey stick and the Marine Labs carpark. One lunchtime, I was messing about in the carpark doing a bit of hockey practice and was seen by an eagle-eyed observer looking for recruits for the recently



Ichthyolatry in action: at the altar (Olga Shavrina)

formed Menai Bridge male hockey team; at the time the Marine Labs provided the backbone of the team. I made my debut for the team the following Saturday. During the obligatory post-match pint (or two) at the pub I was sitting at the same table as Dave Grove, and thus began my conversion from plant ecologist to fish physiologist.

Within weeks, I was spending quite a lot of time in the Nuffield Fish Lab. I

did my MSc project, not on macroalgal ecology, but on feeding and gastrointestinal function in the dab, *Limanda limanda*. The work from my thesis gave me my first scientific paper (published in J Fish Biol in 1977). I was in Bangor for only one year, and then moved on to Glasgow to continue to work on fish for my doctorate. This time a different flatfish: *Pleuronectes platessa*. Following on from a sojourn of just over 4 years in Glasgow, I had a chance move to Tromsø, in the north of Norway, and have been an incumbent at the university ever since.

Throughout my time in Bangor I lived on Anglesey, in Dwyran, at the south-east corner of the island. I live on an island today, but one much smaller than Anglesey; a perimeter of about 20 km so the round trip takes less than an hour by bike. Various bridges provide connections to the mainland and other islands. They are modern, mundane constructions. None of them have the celebrity or charm of Telford's or Stephenson's Bridges. Malcolm Jobling
malcolm.jobling@uit.no
M.Sc. (Marine Biology) (1974)



Tromsbrua Bridge, connecting Tromsøya to the Mainland (Randi M Solhaug)

From Welsh dancing to Caribbean snails

After a great time being an alumnus of SOS, experiencing some great Welsh weather, dancing and language, it was time for me to leave for a new adventure. This new adventure was in the Caribbean: Anguilla, British West Indies!

My name is Larissa Ayumi Kuramae Izioka from the Netherlands, and I am a student of Coastal and Marine Management, specialising in marine biology. Crazy about tropical marine ecosystems, and of course the sun, I got an internship position with my previous supervisors Erik Boman and Martin de Graaf from the Institute of Marine Resources and Ecological Studies.

I have been in the Caribbean for almost 6 months undertaking research on the *“Population status and reproductive biology of the queen conch (Lobatus gigas) in the waters of Anguilla”*. The queen conch is a large marine gastropod (snail) found in shallow waters on seagrass (*Thalassia*) beds. They have shell length of up to 30 cm and they do not occur in waters deeper than 25 m due to light limitation. Their distribution ranges from the Gulf of Mexico up to Bermuda and down to Brazil.

In the wider Caribbean, the queen conch has a nutritional and traditional value. They have been fished for decades because they reside in easily accessible waters and, after all, they are not the fastest animals. They move only 0.5 miles a month! Due to the high fishing pressure and a decline of the populations, it is classed as an endangered species.

Anguilla has a small-scale queen conch fishery. However, up to date, no research has been done on its population status in Anguilla. My research was to estimate the queen conch population by finding out where they are, in which habitat and in which depth they are found in Anguilla.



Me standing on a natural bridge in Western Anguilla made of limestone and formed by wave and wind action.

Using a variety of techniques, including towed video, I was able to assess the population densities in various locations. Measurement of selected individuals, caught by local fishermen, gave me valuable information on age and reproduction.

After following marine biology classes at Bangor University I understood a lot more of the marine ecosystems and processes, the physiology and behaviour of animals. These are powerful skills that I have used in my research in Anguilla.

I am now heading to St. Eustatius, Dutch West Indies. This time I'll be

doing research on solid waste, beach debris and an evaluation of the waste management on the island. Hopefully this will lead to an MSc in Marine Biology at Wageningen University! In the meantime, I am writing a chapter for the book *Geomorphological Landscapes of the World* from Springer and it is an honour to write for *The Bridge*!

Read more about my experiences in the Caribbean and many other places in this world at www.ayumik-kuramae.weebly.com.

ayumi.kuramaeizioka@wur.nl

The Spy who stays out in the cold

Sea Ice off De Kastri – Eastern Siberia



Colin is a geo-survey specialist, providing consultancy and offshore Client Representative services to the offshore oil & gas, telecom & HVDC cable, pipeline and renewable energy sectors. Initially as a geophysicist with Wimpol Ltd, Colin took a year sabbatical in 1990 to achieve an MSc. in Marine Geotechnics in 1990/1991 at SOS and in 1995 started his self-employed career, which has kept him in gainful employment ever since. He lives near Newton Abbot in Devon and is married to Sarah. His two teenage children keep him on his toes. His daughter Millie thinks he must be a spy due to the seemingly exotic and distant countries Colin visits for work on a regular basis. She could be right....

"It's 0530 (UTC+11) which means I must be East of Greenwich – a long way East. Almost East enough to be coming back home again. I've just switched on my laptop to start my day's work and see an email has pinged in overnight from Bangor, asking for contributions to The Bridge. I'm up early as a small survey boat is about to be launched from its mother ship and I've got to make sure of their plans for the day. I'm on the research vessel R/V Ivan Kireev and we are in Chikhachyova Bay – where? Well, Eastern Siberia to be exact; near the local port of De-Kastri.

From a processing plant onshore a considerable amount of oil is exported by a subsea pipeline to a Single Point Mooring (SPM) to which tankers routinely call from Japan to fill up.

De-Kastri's SPM is largely ice free in the winter allowing year-round operations. I'm here on behalf of Exxon Mobil's Russian joint venture ENL. We're here to inspect the pipeline using echosounder, sidescan sonar and sub-bottom profiler and have a close look at any anomalies using a Remote Operated Vehicle.

The sea ice has now gone for the season but I was here last December supervising Met-Ocean equipment deployment – the sea was largely frozen with the vessel having to circle to make its own slush before we could drop the equipment to the seabed. Outside air temperatures were minus

be installing throughout this year into next. Lots of good seabed geology out there and burial into the seabed to prevent damage from trawlers is proving challenging...

Where will I go next? The simple answer is I don't know. Would I be here without my MSc. in Marine Geotechnics? – doubtful. 'In my day' I was schooled under the wing of the inspirational Sinclair Buchan – with whom I still exchange Christmas cards. Fundamental engineering science which has lasted me to this day was drummed into us. I well remember the practical sessions in the geotech lab with Sinclair and Geraint. Not forgetting too Angie, Denzyl, Dei, Jim, Dave, Tony and Alan, who all played their part in allowing me to progress my career path. I am indebted to them.

What does the future hold for new graduates in applied geo-sciences? Certainly the outlook just now is challenging But a solid academic background, a willingness to learn and accept that constant change is the 'norm' is mandatory. Make sure your CV is up to date and the spelling in it is correct...



Cable lay vessel 'Giulio Verne' – Western Link HVDC Power Cable

30°C; sea temperatures minus 3°C at the surface and 'warming' to an impressive minus 1°C at the seabed.

Exxon Mobil is just one of my Clients. I have been lucky enough to travel throughout the world for a large number of Companies – Oil and Gas, Telecom, Cables and Pipelines. Before this assignment I was burying a power cable in the Irish Sea – Western Link – which runs from Scotland to the Wirral. The cable burial vessel 'Go Pegasus' and the main cable lay vessel 'Giulio Verne' are still there. They will

I must away - as the small survey boat is coming back and there will be a pile of data to sift through...

До свидания! (Goodbye for now – in Russian)"

Colin Poat

colin.poaat@cpgeoservices.com

Cable burial plough on the back deck of 'Go Pegasus' for installation of Western Link HVDC Power Cable



A letter to Professor James Scourse



Photo by Peter Harmsen

James,
How are you? I graduated from Ocean sciences in 2008—you supervised my Msc project on Heinrich events from core data acquired from the R/V Marion Dufresne.

I am currently on a scientific voyage in the southern ocean and I thought of you and my time in Wales! We are here at Heard and McDonald Islands in the sub-antarctic for 2 months. I have just started work for CSIRO living in Tasmania. We are mapping and searching for hydrothermal plumes.

After completing my masters in Wales I worked in the UK for 2 years offshore, then left for Australia and studied another Msc in Petroleum Geoscience. After that I processed seismic data for 2 years - then was made redundant. I worked offshore for around 8 months on a seismic vessel, flying out to the Gulf of Mexico from the Pilbara (WA), until I was made redundant again!

I thought I'd get myself out of oil and gas as I didn't particularly enjoy my job or being made redundant. I feel that I am in a much more suited job now, working with lots of interesting people, who are very passionate about their work. I have always been interested in climate change, especially ice-ocean interaction and the project I completed in Wales I very much enjoyed. You may have seen a news report about us on the BBC, and our rare sighting of Australia's erupting volcano, Big Ben.

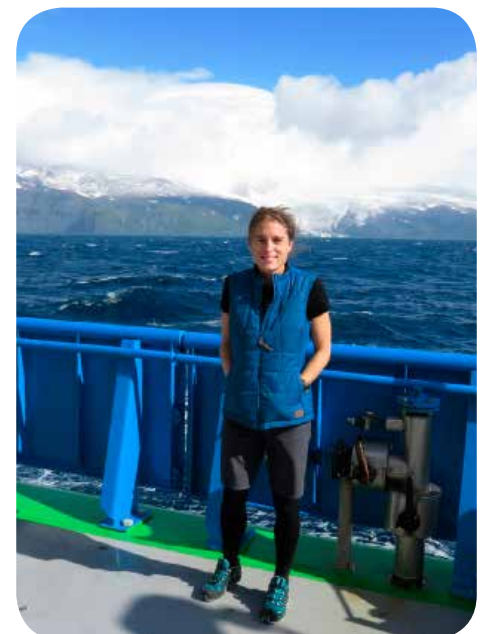
I had wondered if you had been on any more scientific voyages since the Marion Dufresne trip all those years ago?

You may be interested in the following: high frequency seismic lines around the Heard McDonald area show amplitude blanking in areas where there were plumes sighted by the echosounders. I presume that the amplitude blanking is a result of gas,

but what the gas is we don't know, or whether it is gas at all. We have put down the camera and CTDs but each time there is no sign or further evidence of plumes!

Cheers,
Frances

frances.a.cooke@gmail.com



Obrigado, Bangor



My name is Franco. I'm 24 years old and I'm from Niterói (Greater Rio), Brazil. I'm currently finishing an education degree at the Federal University of Rio de Janeiro.

In 2014, I went to study abroad and decided to choose Marine Biology, as this was – and still is – the part of biology that I enjoy the most. Among many countries, I thought the UK was an interesting destination and, among several universities, Bangor and the SOS seemed to be the one to go to. Nearly 18 months after having returned to my home country, I can say it was one of the best choices I've ever made.

In Bangor, I was able to experience a whole different Higher Education system, much more focused on home assignments and research rather than long lectures. I also took practical modules where I got involved with different procedures and field trips, which were essential in my one-year education in Marine Biology. The role as co-chair of Endeavour Society was also extremely rewarding, as it provided me with amazing moments. The personal experiences in Bangor and in the UK as a whole were also delightful. Thank you.

Despite the fact that my love for Marine Biology was very much confirmed in Bangor, the return to Brazil presented me with a new passion: Marine Science Education. In Brazil, there is an academic research gap in this area, where I hope to make a difference in the years to come.

This is the Presidente Costa e Silva Bridge, which connects Rio to Niterói. It is the sixth longest bridge in the world and carries nearly 140,000 vehicles daily. The bridge is located over Guanabara Bay, where part of the aquatic games of the Olympics is going to take place. How do I relate to it? Well, I cross it twice a day and five days a week.

Franco Biondo

francobiondo7@gmail.com



Seaweed & Shrimps



Since graduating from Bangor in 2010, I have had a variety of jobs and experiences. I am a freelance ecologist, but

I have been involved with geophysical surveys and processing and I teach diving. The diving jobs have given me the chance to participate in scientific surveys in Vancouver and Australia.

I moved back to the UK in 2015 to update my skill set since leaving university. I am coming to the end of a Masters of Research in Biodiversity, Evolution and Conservation at the University College of London (UCL). This comprises one taught semester and two marine-based research projects. The projects are collaborations between UCL, the

Zoological Society of London (ZSL) and the Natural History Museum.

My first research project was through UCL and took me to Bermuda, working with the Natural History Museum to assess the temporal changes in calcifying species abundance and composition on *sargassum fluitans* seaweed as a result of increasing ocean acidification. I had the chance to go out into the field to collect my own data. I used different methods to assess the abundance of the species and drew on the oceanographic studies in the area for the changes in oceanic composition.

My second research project was through the ZSL. It was in collaboration with the Hafro Marine Research Institute in Iceland. This project is looking at the impact of shrimp trawling on benthic organisms in Northern Iceland. I went to Reykjavik to work with researchers there to do the taxonomic identification with people familiar

with the species. While there, I also analysed the grab samples collected around the stations I was investigating to assess another level of biodiversity that can be affected as well as analysing the sediment types. The aim in the end is to determine if the site needs to be protected from fishing activities. I am currently at the statistical analysis and write up stage of the project.

Jennifer Choyce

jschoyce@gmail.com



Sargassum fluitans

Bridges of the World

College Station, Texas, doesn't really have any bridges as it is set in flat cattle country north of Houston. So, here's a picture of a much better bridge, from Flinders University, Adelaide, South Australia, where I am presently completing a 6-month sabbatical while writing a book on upwelling systems and working on the upwelling system off the local coast. This bridge crosses a deep gorge in the middle of the Flinders campus and there is occasionally water underneath it when the rain decides to come.

Since visiting Bangor last summer for the open day for the new building (which I hope is proving as successful as was anticipated), I have not met any more alumni other than Peter Liss, who passed through Texas A&M en route to the AGU meeting in San Francisco last December.



Other than this, I am still a professor in Texas A&M's Department of Oceanography, working on the chemical oceanography of the Gulf of Mexico, though contemplating reducing my hours in a year or so. I recently led a consortium of about 20 researchers from all over the U.S., plus one from Cardiff, that has just completed a multi-million dollar project on oil spill research paid for by BP after their disastrous experience with the Deepwater Horizon well. One of the things we did was to release a dye at 1150m depth in the Gulf of Mexico and follow it over the course of a year. For some reason, the path the dye took was not totally in agreement with the models!

Piers Chapman

piers.chapman@geos.tamu.edu



With the downturn in Oil & Gas, Petronas in Kuala Lumpur has terminated most of its expat contractors, and my turn came in February this year. Now I'm retired again, and living once more in Bandung, West Java. I guess I've hung up my hat as a fee-earning metocean specialist.

My Indonesian wife, Heni, is fully occupied in running our new venture, The Lodge Maribaya [<http://www.thelodgemaribaya.com/>], a camping resort in the mountains north of Bandung. We have 25 permanently erected tents, 2 cafes, a villa, and we get many day visitors from Bandung and Jakarta and beyond, with a sprinkling of westerners. I keep busy helping with accounts, planning new attractions, and leading day treks from the Lodge following the many tracks in the adjacent forest.

Our two teenage girls keep us busy too, and I am now on the Board of Governors at their school. The only regret about life here is that we're a long way from the Ocean, north or south. But I can include a bridge picture: to get to the forest at The Lodge, there are a number of footbridges across the river, mostly made of bamboo, some with hand rails, some not.

Adrian Smith

adriansmithuk@yahoo.com

Bridge over the Neva



I gained my PhD from SOS in 1979 as an external student, while working in a government research laboratory in Conwy, North Wales. When that closed in 1999, I moved to Weymouth, Dorset and continued my career with CEFAS until 2000 when I went to work for Seafish and moved back to North Wales.

For almost another 10 years I worked closely with the aquaculture industry in the UK and beyond until I retired

in 2009. My research had focussed mainly on the hatchery production of bivalve shellfish and I was lucky enough to travel the world in that capacity.

In my retirement, I am still involved with the shellfish industry on a voluntary basis. I chair the Menai Strait Fishery Order Management Association which oversees the commercial production of mussels in the Menai Strait. I also chair one of the Shellfish

Association of Great Britain's Committees (the Technology & Training Committee).

My love of travel continues and my husband and I take every opportunity we can to visit other countries. A trip to Russia was one of the recent highlights and my bridge spans one of the canals in St Petersburg.

Sue Utting

sutting003@btinternet.com

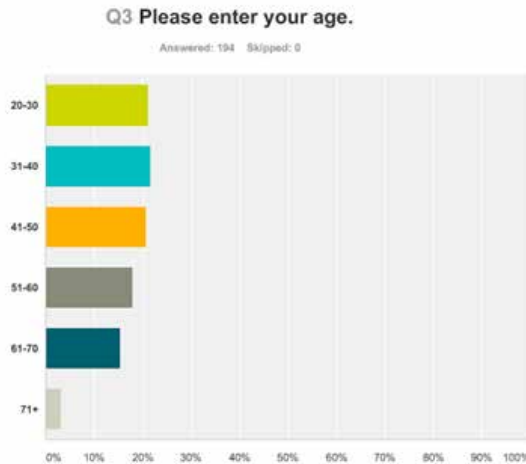
**If this is your first time to see one of our newsletters,
take a look at back issues on
<https://www.bangor.ac.uk/oceansciences/newsletter.php.en>**

SOSA Membership Survey

The School of Ocean Sciences Alumni Association (SOSA) was formed ~ 21 years ago and earlier this year we decided to undertake a members' survey to provide us with data to help plan for the next 21 years. We used the internet-based SurveyMonkey application to carry out the survey and invited all members for which we have an e-mail address to complete the survey. The survey comprised 15 questions in total. Some questions were designed for personal information gathering but most were designed to gauge members' views on various issues we have been considering. We are very pleased to report that we received 194 responses to the survey which is 19% of the 1022 members that opened the e-mail invitation – a great response. A summary of our findings is provided below:

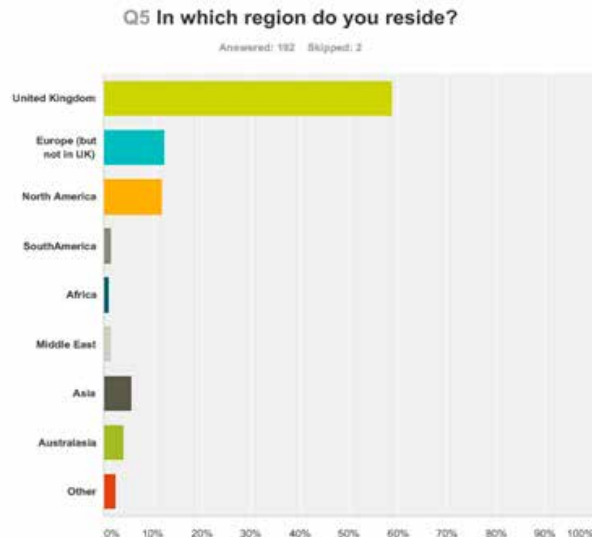
Age Profile

The graph below shows a well balanced profile tailing off towards the upper end as we would have expected.



Geographical Profile

Question 5 asked members where they currently reside. The results are shown below and show that the vast majority of members (>80%) live in the UK, Europe and North America with ~ 60% still living in the UK.



Interest in SOSA

Question 7 asked members about their level of interest in SOSA on a scale of 1-5 with 5 being very interested. More than 60% of respondents indicated that they were interested or very interested in SOSA and a further 30% were neutral on the subject. The weighted average score was 3.8.

The Bridge

Question 8 enquired as to members' level of interest in the SOSA newsletter, The Bridge. Using a scale of 1-5 with 5 being very interested, the survey revealed a weighted average of 3.9 which is very encouraging and supports the importance of The Bridge in communicating with members. Less than 10% of respondents expressed little or no interest in The Bridge.

SOSA Membership Survey

Digital vs Paper Copies of The Bridge

Members will be aware that in these austere times, we struggle to raise funding to support the printing and circulation of paper copies of The Bridge. Each edition costs ~£4,000 to print and post to members. As a result, Question 9 asked “If you currently receive a paper copy of The Bridge, would you prefer to continue to receive paper copies rather than electronic copies in the future?”. Less than 20% of respondents answered Yes to this question. I believe that this will radically change our approach to The Bridge in the future.

Payment for Paper Copies of The Bridge

Following on from Question 9, the next question asked “If you answered Yes to Question 9, would you be prepared to pay for a paper copy of The Bridge through an annual subscription for membership of SOSA?” Interestingly, only ~30% of respondents that wished to continue to receive paper copies of The Bridge were prepared to pay for this through an annual subscription for SOSA membership.

Reunion Events

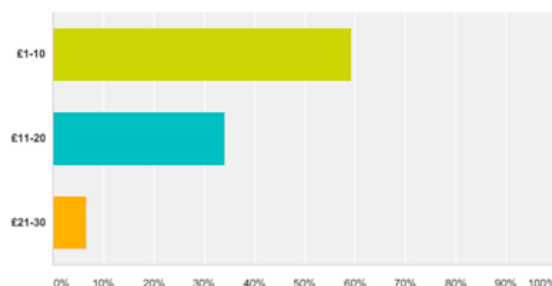
Question 11 asked members to express their level of interest in SOSA reunion events on a scale of 1-5 with 5 being very interested. Only ~35% of respondents indicated that they were interested or very interested in reunion events and the weighted average response was 3.1.

SOSA Membership Subscription

Question 12 asked members if they were prepared to subscribe for SOSA membership. Currently, SOSA is run on a voluntary basis with occasional but dwindling financial support from the University/School and an increasing reliance on sponsorship from industry; particularly for printing and posting The Bridge. Responses to this question were split nearly 50/50 with “No” having a slim majority. Following on from this, we asked that “If you responded Yes to Question 12, what annual subscription would you be prepared to pay (UK£ Sterling)?”. The question offered three price bands and the results are shown below. The vast majority of those prepared to pay would wish to pay £20 or less per year.

Q13 If you answered Yes to Question 12, what annual subscription would you be prepared to pay (UK£ Sterling)?

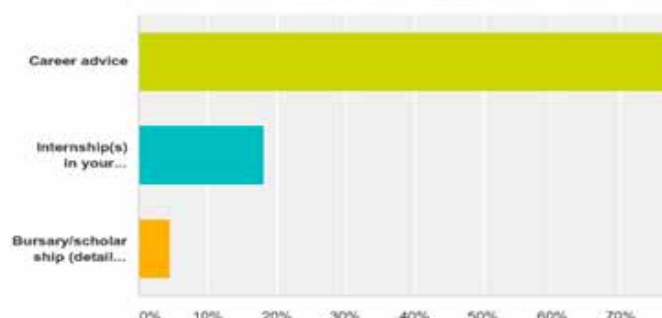
Answered: 91 Skipped: 103



Support for SOS Students

Finally, we asked about members’ preparedness to support current SOS students and the results are illustrated below. Almost 80% of respondents were prepared to provide career’s advice and ~20% said that they could possibly offer internships to students. Less than 5% were prepared to offer financial support through bursaries/scholarships.

Answered: 110 Skipped: 64



I would like to say a huge thank you to all who responded to our survey. This has produced some very interesting results and we intend discussing these and how they can be used to shape the future of SOSA at our next committee meeting. I will keep you informed on progress. **Mick Cook – Chairman, School of Ocean Sciences Alumni Association**

The Happy Wanderer

On finishing my MSc, I worked at SOS as a volunteer with the sclerochronology team; undertook a research cruise around the Isle of Man on the Prince Madog with the Isle of Man Scallop Fisheries and Fisheries; and got the odd additional qualifications to make myself more employable -- such as marine mammal and protected species observer; powerboat licence 1&2 and also a TEFL. But wanderlust called. I went to Honduras (Central America), working as an intern on AWARE PADI projects (such as the Fish ID course), as well as beach clean ups, liaising with the Roatan

Marine Park Officials to promote conservation efforts and a special shark diving programme.

Then on to Operation Wallace in Madagascar as their Marine Coral Reef Ecology Lecturer and Divemaster. This gave me a great opportunity to use my marine science knowledge, which I had gained from my degrees as well as my diving skills from Honduras. I taught 16-18 year olds and university students who were assisting with conservation work in the area. I taught coral reef biology, identification skills, taxonomy, and conservation knowledge on a local and global scale. This also involved taking the students out on mangrove walks and leading divers and snorkelers on dives/swims

Eventually, I headed for Germany to start a PhD in chemical oceanography. I am now based in Kiel, in the north of Germany, working with a company (KM



Contros) and GEOMAR (Helmholtz Centre for Ocean Research), which is one of the world's leading institutes in the field of marine sciences. This PhD (funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement) is joint with other Universities and companies. It trains 'earth scientists', who are focusing on the carbon cycle. I get to train and travel across Europe and the world, with the opportunity to live in Zurich for part of my PhD. So the next adventure has just begun!

Anna Canning



A job for life

I left Wales soon after completing my MSc in Marine Biology in 1968 for a job in New Zealand, and I retired from my 'job for life' in 2009. Retirement came after working for the New Zealand Government as a fisheries research scientist for the traditional 40 years.

My MSc on oyster biology was what got me the job with the New Zealand Fisheries Research Division, but inevitably over a 40 year career there were numerous other species on which to focus my research: shellfish such as mussels, abalone and rock lobsters, and finfish such as turbot, butterfish and kingfish -- even brine shrimp and seaweed. Always from the perspective of their potential for aquaculture or marine farming.

Without doubt my most commercially successful and personally satisfying research was into the New Zealand green-lipped mussel (*Perna canaliculus*), which has since become a multi-million dollar

export aquaculture industry -- but under the trade name Greenshell mussel, since it was felt that there would probably be consumer resistance to eating something with green lips!

My work took me all over the country and also to numerous countries in the South Pacific region, including Chile, which has many environmental and aquaculture similarities to New Zealand. Work even brought me back to North Wales in the mid 1990s to collaborate with colleagues at the Conwy Shellfish Laboratory. Somewhat ironically, we were working not with the UK flat oyster (*Ostrea edulis*) but rather with the New Zealand Bluff oyster (*Tiostrea lutaria*) of which there is a small but resilient population in the Menai Strait.

Apropos of nothing in the foregoing narrative, but in response to the editor's request for "a bridge" story, the accompanying picture is really more of a "no bridge" situation. It



shows the washed out Waikawa Stream Bridge on State Highway 1 after a weather-bomb in June last year hit the rural area, turning a normally placid stream into a raging torrent. Its closure had an impact on the Hickman family. The day of the washout was also the day on which we were due to celebrate our 40th wedding anniversary. All the people coming were unable to do so. As a consequence mid-winter's day, 21st June 2015, is firmly etched in all our memories as a bad bridge day!

Bob Hickman
oysmusturbut.man@xtra.co.nz

Summer Bursaries

Each year, the School of Ocean Sciences offers a series of summer bursaries to 2nd year undergraduates to enable committed and able students to work alongside and assist members of staff undertaking research or outreach activities. This can be for a period of 5-8 weeks.

Here are the students and their research projects for 2016

Student	Bursary	Project
Hannah Byrne	Carless	Tidal conversion at tropical and subtropical Pacific Island Chains
Charles Clinton	Gavin Winsborrow	Laboratory simulations of underwater landslides
Emma Fletcher	Sea Zoo	Interactions between dolphins and wildlife tour boats in Cardigan Bay
Ellie Goodfellow	Leslie Cooper	Wave energy potential of the Iberian Peninsula
Emma Keen	Barry Paine	Investigating functional links between physical oceanography, prey characteristics and top predators (seabirds and cetaceans) in south-west UK — what creates foraging hotspots?
Laura Holmes	Barry Paine	Investigating functional links between physical oceanography, prey characteristics and top-predators (seabirds and cetaceans) in south-west UK — what creates foraging hotspots?
Dilhani Goonesekera	Barry Paine	Interactions between dolphins and wildlife tour boats in Cardigan Bay
Eleanor Pawley	Barry Paine Memorial Film	Monitoring the reef forming worm using high-resolution survey methods in Llandulas and Morecambe Bays
Lily Stokes	Piers & Lesley Chapman	Reports of recreational yacht activity in Chagos Marine Reserve.
Michael Thore	Leslie Cooper	Fish population dynamics -- aging fish

Nautilus Scholars



The Nautilus Scholars for 2015/2016 are Abhishek Datla (MSc Physical Oceanography), Kasey Ryan (MSc Marine Biology), Harry Davies (MSc Applied Marine Geoscience) and Chyanna Allison (MSc Marine Environmental Protection)

Phew!! It is finally over.

Of course, I don't mean it! During my five years and 3 months term of office, as Head of School of Ocean Sciences, so much has happened. What I can say is that it has been an interesting, at times very rewarding, occasionally frustrating, and challenging experience.

Little did I think that when I first arrived as a fresher to Bangor University in October 1972 on a packed Bangor-bound train from Euston, London, that I would have the privilege and honour to lead such a fantastic and collegiate department as the SOS. During my tenure, I oversaw and suffered considerably from noise and disruption as the old Westbury Mount was demolished and a new building erected in its place. Drilling into the pre-Cambrian rocks beneath my window went on for months on end! In its place like a Phoenix from the ashes, a 21st century state of the art building – Marine Centre Wales -- has arisen.

Recently opened, (5th July and photographs in the 2017 edition of The Bridge), by HRH The Prince of

Wales, the building and its facilities have greatly enhanced the Ocean Sciences site. The added bonus of a Royal visit is that all those decades of niggling defects on the buildings and around the site have been rectified, often at the last minute!



Being responsible and managing the 82 scientific, technical and administrative staff, 43 research staff, and 40 PhD students, as well as 50 MSc and around 350 undergraduate students, has been a great experience and I could not have effectively managed SOS without the considerable help from all the staff.

Ocean Sciences is a unique place to work within the University and I take this opportunity to thank all the staff and students for their considerable co-operation, unwavering support through financially lean times and their conscientious hard work to achieve what we have done in such a short time. Student satisfaction is up considerably; student recruitment has increased dramatically; research income has increased; and additional academic staff recruited.

As my period as Head of School comes to a close another important and long-serving member of staff and alumnus, Professor David Bowers's academic career is drawing to a close. Dave retires at the end of July and we all wish him well in his retirement, but with Emeritus Professor status we will certainly continue to see him around the corridors and in the coffee room.

What will I do now? Well, devote more time to my research and continue to teach but without the large load of administration.

Professor David Thomas is the new Head of School from 1st August.

Celebrating the student-led teaching awards



Postgraduate Teacher of the year, alumnus Connor McCarron, receives his award at the Student-led teaching awards ceremony in PJ Hall on 13th May 2016.

Connor who is studying for his NERC-funded PhD under the supervision of Dr Katrien Van Landeghem, took a 6 month break from his research to provide teaching cover during Katrien's maternity leave. The award recognizes Connor's considerable teaching ability.

Further congratulations are also due to Connor.. He was awarded a prize for the best oral presentation at the 5th Marine & River Dune Dynamics conference. The title of his talk was *"Sediment transport and bedform morphodynamics in sand-gravel mixtures"*.

Dean, Colin Jago, (fetching in pink feather boa), Head of School trying to act incognito alongside nominated "new lecturer of the year", alumnus Gareth Williams, looking very brainy and smug



A bunch of SOS Student Groupies at the Awards

Miscellanea



Take me back to New Orleans

This year the world's leading Ocean Sciences academic conference, AGU Ocean Science, took place in the Crescent City, New Orleans.

Many Bangor academics attended the conference with Dr Simon Neill helping to lead a conference session on Marine Renewables and Dr Yeung-Djern Lenn on mixing processes in polar seas. Amongst the other Bangor delegates, MOcean student Stacey Carless presented her work on the impact of sea level rise on tides.

Life-long jazz player, Prof Tom Rippeth, also made the most of the conference location sitting in with local jazz groups. He also found time to catch up with Anglesey born James Evans, one time clarinet player with the SOS linked jazzband, Dixie Dilemma, which also included Prof James Scourse (on double bass) and then MSc and PhD Physical Oceanography students Dr Tim O'Hare (now at Plymouth University) and Prof Jonathan Sharples (now at Liverpool University). James Evans is now a professional jazz musician in New Orleans.

Prof. Tom Rippeth playing the Askew Street Blues at BB King's Blues Club.



UK Marine Renewables Experts meeting earlier this year in the new Marine Centre Wales building.

“There is a tide in the affairs of men...”

Experts from across the UK converged on SOS earlier this year for a workshop to discuss the feasibility, challenges and impacts of the development of tidal lagoons for renewable energy generation. We were pleased to welcome a number of SOS Physical Oceanography alumni to the workshop including Dr Emma Litt, now with Natural Resources Wales (BSc, MSc, PhD) and Dr Ricardo Torres of the Plymouth Marine Laboratory (MSc and PhD). The workshop was organised by two Bangor alumni who now work in SOS, Dr Peter Robins (BSc Maths and Physical Oceanography), PhD) and Dr Matt Lewis (BSc Marine Biology and Oceanography and MSc Physical Oceanography).

Polar Visitor

SOS was pleased to welcome world leading polar Physical Oceanographer Professor Mary-Louise Timmerman of Yale University, USA, as this year's Kirby Laing Scholar.

As a result of the visit Mary-Louise is currently collaborating with SOS's Dr Yueng-Djern Lenn in trying to unravel the mysteries of *double diffusive convection*, a mixing process which is rare globally but which dominates the Arctic Ocean.

Physics comes back to Bangor

For the first time in nearly 30 years Bangor University is to offer an undergraduate physics programme starting this October. Made possible by the Vice-Chancellor's recent investment in numerical sciences the new BSc Ocean and Geophysics course will benefit from ties with the School of Ocean Sciences.

It will provide students with the key skills to either enter the offshore industry or undertake climate research. The first two years of the course will focus on the observation, identification and quantification of the key physical processes driving the ocean and linking to the atmosphere, the cryosphere, and the continents, with the students going on to specialise in either Ocean Modelling or Marine Geophysics in the 3rd year.

Miscellanea

Come on, come on, do the loco-MOcean with me!



The first students graduating on the new MOcean 4 year Master's degree: Eric Fitton, Zoe Roseby, Katie Scarff and Bonita Barrett-Crosdil.

The first students on the newly revamped MOcean 4-year undergraduate degree course graduated in July 2015. Of the 5 students graduating, 3 immediately secured funded PhD studentships at top UK Ocean, Atmospheric and Geoscience departments, whilst a fourth opted for the world of working, getting a job with CEFAS.

The new route to a Masters degree was created in response to the implications of the new undergraduate fees structure and the loss of funding for MSc students back in 2011. The new course utilises modules from the long running and internationally renowned MSc courses in Physical Oceanography and Applied Marine Geosciences. As a result, SOS has bucked the national trend of declining MSc numbers with an increase in the numbers of students taking the MSc modules despite cuts to student funding by NERC and by the Welsh Assembly Government.

“... which taken at the flood leads on to fortune.”

One of the UK's leading coastal flooding experts, Dr Jenny Brown, returned to Bangor earlier this year to give a seminar to staff and students on her research into coastal flooding and coastline evolution.

Jenny Brown arrived in Bangor as a first year undergraduate in 2001 to undertake a BSc in Physical Oceanography & Mathematics. Unfortunately, this turned out to be the penultimate year of a successful course that launched the oceanographic careers of a number of our former students (including Prof Judith Wolf, National Oceanography Centre; Prof Toby Sherwin and Dr Phil Gillibrand, Scottish Association for Marine Science, Dr Pete Sykes, Met Office, Dr Pete Robins, CAMS, SOS).

Jenny achieved a First Class degree and was the best graduating student in Ocean Sciences in 2004. She then continued as a PhD student under the supervision of Prof. Alan Davies, taking on an ambitious project involving morphodynamic modelling of the Dyfi Estuary, mid-Wales, funded mainly by the EU.

On receiving her PhD Jenny joined the National Oceanography Centre Coastal Ocean Processes group in Liverpool where she has worked on a number of projects focused on flood and erosion risk management. This has involved modelling waves, circulation and their interactions across the European Shelf and, more recently, flood inundation modelling at locations of UK energy infrastructure.

More generally, Jenny has been very much to the fore in promoting marine science, not least as a Committee Member of the Young Coastal Scientists and Engineers Conference (YCSEC), acting as the main local meeting organiser in Liverpool in 2011. In 2012 she received a Challenger Society fellowship for her research in Physical Oceanography and has appeared several times on local radio talking about extreme tidal levels and coastal circulation. She also became involved with a marathon charity swim, providing kayak safety to the participating swimmers, in addition to the tidal predictions that helped the swimmers plan the route.



Alumni Dr Jonathan Malarkey and Dr Jenny Brown with Professor Alan Davies

I'd like to get you on a fast boat to China

School of Ocean Sciences has entered into a Memorandum of Understanding (MoU) Dr SunYat-sen University, Guangzhou, China. The aim of the MoU is to establish and develop a strategic collaborative relationship in order to promote academic and cultural exchange and research collaboration between the two institutions in the areas of teaching and research. The MoU came about following a visit to Guangzhou by Professor Tom Rippeth earlier in the year.

Commenting Tom said: *"The research interests of the oceanographers at Sun Yat-sen University very much overlap with those at the School of Ocean Sciences with research collaboration already growing between the two institutions and a joint workshop planned for September 2016. The MoU is the natural next step in our collaboration."*

A Bangor MOcean student will spend her International Year Abroad at the University from October 2016. Sun Yat-sen University is rated number 1 in Southern China and according to the Times Higher Education World University Ranking the University was ranked in the top 200 in the world.



Professor Tom Rippeth with Professor Jiaxue Wu in January 2015

"On such a full sea are we now afloat, And we must take the current when it serves..."

To reduce greenhouse gas emissions and aid sustainable development, there is an urgent need to support our electricity generating capacity through the development of low carbon technologies, particularly those generated from renewable sources. Ocean waves and tides represent a huge global energy resource – it is estimated that waves and tides together contain around 4,000 GW of energy. Recognising this, SOS has created a new MSc in Marine Renewables.

Exploiting even a fraction of this could contribute significantly to low carbon electricity generation, and so this industry, and R&D into wave and tidal energy, is expanding at a rapid pace. In particular, tidal energy is entirely predictable. Unlike the majority of renewable resources — such as wind and solar — it can be accounted for within the larger global energy mix.

The UK are world leaders in the marine renewable energy industry, and researchers at Bangor University are at the forefront of international research into wave and tidal resource characterisation.

This MSc programme is designed to equip students with the skills necessary to identify and quantify the potential of specific locations for marine renewable energy generation installations, with an emphasis on the resource (waves and tides), time series analysis, numerical modelling, and the challenges faced when placing arrays of devices in the marine environment.



**Dr. Simon Neill
Course Director**

For further details visit: www.bangor.ac.uk/international/courses/postgraduate/marine-renewable-energy-msc



SOS's Dr Martin Austin appeared on the prime time TV show, BBC1's the One Show, earlier this year. In the show he explains a deadly phenomenon associated with waves lapping on beaches, "rip currents".

Rip currents are strong, very narrow currents, which run off-shore through lines of breaking waves. They occur to balance the onshore flow of water created by breaking waves and can occur anywhere there are breaking waves: in oceans and large lakes. Rip currents are responsible for more deaths each year than sharks or jellyfish!

Kiwi Bound

The Commonwealth Scholarships and Commission awards scholarships for postgraduate study and professional development to Commonwealth citizens each year, providing opportunities for students from developing countries to study at Bangor, and Bangor graduates to study overseas. MSc graduates Charli Mortimer, Amrit Dencer-Brown and Helen Cadwallader have won 3 of the 8 awards available to undertake their PhDs in New Zealand in 2016.

"To win a Commonwealth scholarship, a student must make contact with a potential doctoral supervisor, develop a project proposal and receive an offer of a place at their preferred university in New Zealand and then apply for the Scholarship" reports Professor John Turner, Director Postgraduate Taught Courses and Postgraduate Research in the School of Ocean Sciences.

"The awards are highly competitive, and the success of Charli, Helen and Amrit this year demonstrates the experience that they and many others gain while studying at Bangor, and often by working on our research projects around the world after graduation. The School has strong links with New Zealand universities, such as Victoria University of Wellington, where two of our graduates are now senior staff (Assoc Profs. Simon Davy and James Bell) and we have long supplied them with outstanding PhD students from our M.Sc courses (Laura Wicks, Gareth Williams, Katie Hillyer, Joe Marlow). It works both ways – Dr Gareth Williams did his Bangor MEP MSc research project and then a PhD in New Zealand, and after a period of postdoctoral work in California, has returned to Bangor as a new member of staff in the School of Ocean Sciences!"



**Charli
Mortimer**

"If there's one thing you can safely say about Bangor graduates: it's that we are everywhere! I'm currently sat at my desk at the Joint Nature Conservation Committee (JNCC) looking at the back of the head of one of my fellow graduates from MEP. There's just no shaking them! My supervisor Dr James Bell is a former Bangor graduate, as are two of the PhD students I'll be working with, and so is the Head of School there: are you starting to get the picture?"

In the last three years, I've researched carbon storage in mangroves in East Africa, done research in the Cayman Islands, helped coordinate a coral reef monitoring project in Indonesia, and helped advise the government about marine conservation in UK waters. In short, I've been busy!

Next February I will begin a PhD at Victoria University of Wellington working on sponges on coral reefs in the Indo-Pacific, and I can honestly say that the high quality learning and support that I received from my lecturers during my MSc (and for some time afterwards) have made this all possible. I'm looking forward to the next three years of my career in Marine Biology and the countless Bangor graduates I will meet along the way."



Helen Cadwallader

"I'm working on the movement ecology of the short tail Stingray in a New Zealand estuarine environment and human impacts, based at the University of Waikato Coastal Marine Field Station in Tauranga, in the Bay of Plenty.

My project is part of the new Apex Predator Project at the field station (www.apexpredator.co.nz). I've also recently spent some time working as crew on fishing charter and dolphin swimming boats here in New Zealand before beginning the PhD course.

I could not have got here and won a Commonwealth Scholarship without the MSc Marine Biology course at Bangor University. I learned so many research and writing skills that I am now using them all of the time, I'm also indebted to the staff who were and continue to be so supportive."



**Amrit
Dencer-Brown**

"I am really excited to be moving to New Zealand and conducting my PhD research on mangrove socio-ecology. I will be studying at Auckland University of Technology, which has an active mangrove research group. I am looking at local perceptions of different user groups of the mangroves and how the current management practices are affecting the ecology of the area.

While studying the M.Sc in Marine Biology at Bangor, I conducted my research project on mangroves in Zanzibar, and got to know the Edinburgh collaborators, who work with Bangor in Kenya. I began working on a chapter of a book on mangrove services and this turned into a full-time role for me at Edinburgh Napier University. I have also been working with academics across the university on Teaching Fellows projects and running a first year lab in Environmental Biology.

Therefore having the opportunity to conduct my Masters research in Zanzibar through Bangor University led to where I am today. Bangor staff have been inspirational to me and I hope that we have many chances to collaborate in the future".

Bangor research projects among top 20 contributing towards development

Kenya



A researcher at SOS is also a key member of a research partnership, which is protecting local livelihoods in coastal parts of Kenya, by supporting mangrove forest conservation and restoration in the region. Poor communities rely heavily on the natural resources that the mangroves provide.

Dr Martin Skov of is one of three key academics in the UK whose collective research has helped local communities initiate the world's first carbon trading project with a marine ecosystem: the mangroves.

The community project (www.eafpes.org) brings \$18,000 annually to people of Gazi Bay by trading certificates of the CO₂ that is captured by the mangroves, which are protected by them. The profits fund job generation and community projects, such as building new school wings and water supplies. The project is now fully community run, and includes a variety of supporting activities.

Chagos Archipelago

The World's Largest Marine Reserve: Policy, Protection, Conservation and Outreach

Lead: Professor John Turner with Prof Charles Sheppard OBE, Emeritus Professor, University of Warwick and Dr Heather Koldewey, Zoological Society of London

Partners: Zoological Society of London (ZSL), Foreign & Commonwealth Office British Indian Ocean Territory (BIOT) Administration UK Government (The Government of BIOT based in London) and the Chagos Conservation Trust (CCT)

The UK is responsible for the fifth largest area of ocean of any nation and has a duty to protect it. UK Overseas Territories contain 94% of the UK's biodiversity, and the Foreign Office is called upon to select and declare fully protected zones. The World's largest Marine Reserve of 640,000km² (equal to the area of France) currently surrounds the Chagos Archipelago in the Indian Ocean, a wilderness uninhabited for ~60 years and containing significant populations of 76 IUCN Red List species, including sharks, turtles and seabirds. Declared in 2010, the Reserve is threatened by illegal fishing and poaching; the potential impact of resettlement of people ('Chagossians') who originally worked coconut palm plantations closed in the 1960s; and is subject to sovereignty claims.



Professor John Turner (centre) being awarded the prestigious Best Impact on Public Policy Award

Chagos Marine Reserve is novel because it's near pristine waters and undamaged coral reefs serve as a global reference site, providing a benchmark for reversing damaged ecosystems elsewhere, and serves as a refuge for species that reseed degraded parts of an ocean on which millions of people depend. Collaborative research involves expeditions to this remote region, where Jon has had a rare opportunity to assess a naturally functioning ecosystem in the absence of human impact and to understand how resilient ecosystems are capable of responding to climate change. John's team provides the knowledge base for the UK Government and conservation organisations to justify and manage the Marine Reserve in response to international challenges. There is pressure to allow resettlement in Chagos, and their work with the Chagos Conservation Trust helps inform UK Government policy on environmental aspects of such plans. John remarks: *"We have engaged with Chagossian communities now living in the UK and Mauritius through an outreach programme to involve them in conservation, and we raise awareness of the importance of very large marine reserves in protecting ocean wealth for future generations."*

<http://www.bangor.ac.uk/news/research/three-bangor-research-projects-among-top-20-contributing-towards-development-24550>

In Memoriam

Dr Tony Jones, MBE, 1938-2016

Tony Jones, who died on the 6th of May taught geology and marine geology to students at Menai Bridge for 5 decades, from the 1960's to the 2000's. In the larger university context, he was warden - later senior warden, at the halls of residence on the Friddoedd site in Bangor. In the national and international context, he was an advisor on search and rescue techniques, whose opinions and advice were sought worldwide. He was awarded the MBE and appeared on the TV programme "This is Your Life" because of his outstanding contribution in this field.

Tony was a larger-than-life character in the department. He loved to take students out of the classroom on fieldwork to show them the geology of the mountains he knew so well. He was quick to use new technology when it became available, but could also go back to basics when necessary as evidenced in his second year "Surveying Course" where methods taught ranged from long established "plane tabling" to the more sophisticated satellite position fixing system. On one occasion, when a student used the incorrect protocol on a walkie-talkie, Tony's voice could be heard shouting across the mountainside: "it's either 'over' or 'out', not both!". The radio wasn't necessary to get that message across! Generations of marine science students who attended the marine management weekends at Gregynog will remember Tony's contribution from the back of the room (where he liked to sit to test the speaker's audibility). Challenging questions were then gently lobbed like grenades at the speaker and these often led to lively discussions. The Gregynog weekends also revealed the very kind side to Tony's nature. He always took his car (a long-wheelbase land rover used for mountain rescue purposes) and would use this to pick up late arrivals from the railway station, or for a run to the shops for forgotten supplies.

He may have appeared gruff and intimidating to first year Earth Science students but it soon became obvious to them that Tony was in fact scrupulously

fair-minded and exercised a keen sense of humour. His decisions were always based on sound common sense. He used to scrutinise first year test results thoroughly such that any student showing signs of weakness was interviewed and steps taken to remedy the situation. Many graduates today are thankful for Tony's early intervention and advice in their first year.

Tony was born in British India, the son of an army officer. He grew up in his mother's native South Africa and retained traces of his accent in later life. He suffered from polio as a child and this left him with a weak leg. He studied Geology in South Africa and then gained his PhD at the University College of Wales, Aberystwyth, before joining the staff of the Marine Science Laboratories in Menai Bridge in October 1968. Despite his weak leg, he was a very strong man. Tony still holds the record carrying the largest number of heavy box cores across Lavan Sands to the department car. He had an authoritative presence which served him well as warden of the halls, but underneath there was a kind and generous nature and a genuine interest in the welfare of the students in his care.

Tony's arrival at U.C.N.W. coincided with work in progress on the Nevado project, in which over 100 cores, 7.6 cm in diameter, of surface sediment had been collected by the British and Dutch navies from all over the North Atlantic Ocean using a hydroplastic corer. One problem with this type of corer was that incomplete penetration left a vacuum during core retrieval which in turn led to bottom sediments being sucked up into the barrel. Tony studied this problem and, in 1969, published a paper entitled "Disturbances in North Atlantic Cores" in the proceedings of the Society for Underwater Technology.

Tony's interest in mountains and mountain rescue began in the shadow of Table Mountain in Cape Town and grew on field trips to Snowdonia when he came to Wales. He was team leader of the Ogwen Valley Mountain Rescue Organisation for many years and remained chair of the North Wales Mountain Rescue Association until 2013. He was one of a small group



who brought the US style of search management to the UK and he became a sought-after speaker and adviser on search and rescue matters, often for very prestigious audiences, in this country and abroad. Sometimes he looked to share these engagements out amongst his colleagues. I (DB) remember being asked to give a talk to the Royal Navy about the role that physical oceanographers could play in improving search and rescue at sea.

Tony remained a bachelor and visitors to his warden's flat in Bangor will recall the book-lined walls (including many volumes of National Geographic Magazine) and the quiet sound of classical music on Radio 3 in the background. His pipe was never far from hand and, if the time was right, there would be a drop of malt whisky available. His favourite brand was Clynelish. When he retired, in September 2000, he moved to a house in Menai Bridge, taking the contents of his study with him. He continued to contribute to search and rescue matters in retirement, receiving visitors from all over the world. When the 'labs' received funding to provide marine science courses to the School of Coastal Marine Sciences in Mozambique, Tony volunteered to go there in 2008, 8 years after his 'retirement' and give a course (including fieldwork, of course!) on beach processes.

(Sinclair Buchan and Dave Bowers)

In Memoriam

Dr Kate Stansfield

It is with great sadness to report the unexpected death of SOS alumna, Kate Stansfield, earlier this year.

Kate arrived in Menai Bridge in 1988 to undertake an MSc in Physical Oceanography. Like so many of us, it proved to be a career defining moment. Following the successful completion of her MSc, she moved to Stony Brooke University, New York, to successfully undertake a PhD investigating island wakes and tropical reef fish ecology around Barbados, West Indies. This was followed by a post doc in Victoria University, Canada, with world-renowned physical oceanographer Christopher Garrett.

Kate then returned to the UK to a teaching position at Southampton University and a research position at the National Oceanography Centre, Southampton. During this time her research took her on expeditions to the Indian Ocean, the ice shelf of Antarctica and the Cayman Trough in the Caribbean, where oceanographers claimed to have discovered the world's deepest unknown volcanic vent (black smoker).

Throughout this period she shared a common interest in mixing with the SOS Ocean Physics group, participating in a number of collaborative ventures, including the Irish Sea "Autosub cruise" in 2006! (Tom Rippeth)



Long standing collaborator Dr Kate Stansfield (to the right of John Simpson) with the SOS Turbulence and Mixing Group on the Prince Madog following the successful 'Autosub' research cruise to the Irish Sea in 2006.



Three new marine aquaria containing moon jellyfish, lump suckers and seahorses were officially opened by Bangor University alumnus Mike Dilger (One Show fame) on the invitation from Frankie Hobro, Ocean Science, Bangor University alumnus and owner/Director of the Anglesey Sea Zoo.

Stop Press!

Phillip Hollyman, who is in the third year of his PhD (funded by BU and CEFAS), has been awarded the Oxford University Press Prize for Malacology and runner-up at the 4th Sclerochronology international conference in Portland Maine, USA. You can read the abstract of his talk on the Journal of Molluscan Studies website: <http://mollus.oxfordjournals.org/>

The UK fishery for the common whelk *Buccinum undatum* is one of the largest in Europe, with a value of £16.3million in 2014. The increase in overseas demand for whelks has driven an expansion of the fishery in recent decades, leading to several documented population declines.

Stock assessment is problematic as length-based age and maturity assessments are ineffective, highlighting the need for a robust age determination method.

The aim of this project is to validate the periodicity of growth rings present in the calcium carbonate statoliths located in the foot of the whelk. Analogous in function to the fish otolith, the statolith contains a high resolution archive of past growth. The results indicate that the visible statolith rings are a good indication of age. This validation of statolith growth rings provides a new age determination technique.

There's gold in them thar waves!

Suzie Jackson, alumnus and a lecturer in sediment dynamics in the SOS, was part of the GB women's white water rafting team that won the European Championship at Tacen, Slovenia. Between the 19th and 21st May 2016 the GB women's rafting team battled to maintain their title as European Champions after their success in Bosnia and Herzegovina in 2015.

The competition consisted of four races: a time trial sprint race; head-to-head racing; a slalom race; and, finally, a downriver endurance race.



The GB women's team started the competition in style; completing the fastest time trial sprint and winning all head-to-head races, and ultimately beating the Russian team in the final. The slalom race took place on the second day where GB finished a modest overall fourth place.

With three races completed, GB entered the final downriver endurance race overall second -- six points behind Russia. GB gave the final race their all, overtaking Russia and all other teams to win gold which led to an overall victory in the competition.

The team are now looking forward to the 2016 World Championships in Al Ain, United Arab Emirates this October.

Video of a drop on the final downriver race:

<https://www.youtube.com/watch?v=328W03-4fFE&feature=youtu.be>

The team is currently looking for new sponsorship to travel to the World Championships. If you are interested in supporting GB women's rafting team contact Suzie .

Suzanna_jackson@live.co.uk



Endurance Race: Suzie is sitting front left in the raft

Tribute to Chris Richardson

As a footnote to Chris Richardson's farewell note, can I, on behalf of the School of Ocean Sciences Alumni Association (SOSA), say a huge thank you to Chris for all his support over these past five years or so. Despite his heavy workload and numerous responsibilities as Head of School, Chris has supported SOSA wholeheartedly and with great vigour and humour. To my knowledge, Chris has attended all our committee meetings and contributed significantly to all we have done. Without his support, I know we could not have achieved what we have achieved. As is Chris's wont, he has agreed to stay on the SOSA committee when he steps down as Head of School and I know that we will gain enormously from this very kind gesture. We wish Chris well in his new role and are sure that his wife Carole will appreciate seeing more of a less-stressed Chris in the future.

Mick Cook

Remembering Professor Denzil Taylor-Smith



Denzil was born in November 1926 into a close-knit South Walian coal mining community. His early upbringing and experiences fostered an active interest in engineering which, on leaving school, led to his choosing to study for a wartime diploma in mechanical engineering at Newcastle University. On leaving Newcastle he joined a radar team in the Royal Navy experimenting with a radar-controlled Bofors gun until 1948, when he returned to university at Aberystwyth to take a degree in physics and geology. In 1952 he became a research student and subsequently lecturer in mining and engineering geophysics in the Department of Geophysics at Imperial College.

In 1964 Denzil moved back to Wales to take up a lectureship in the Department of Physical Oceanography at the then University College of North Wales (now Bangor University). Documentary evidence shows that Denzil's decision to apply for the post was far from straightforward (revealed after some skilful delving through the archives by a member of the secretarial staff!!). In the first instance it was members of his own research team who were interested in the post but, before long, Denzil's yearning to

return 'home' to Wales took over and he decided to sacrifice an already happy and successful career at Imperial College to take up new challenges within a recently established interdisciplinary marine science environment in Menai Bridge.

I'm sure Denzil wouldn't mind my taking the liberty and quoting some of his written comments at the time of application. He wrote: *"At the personal level, my wife, Meg, and I were both born and bred in the Welsh mountains and, even after 10 years we have never become assimilated in the somewhat sophisticated life of the south-east. We view with horror the increase in population density in the region and yearn for room to breathe"*. Very perceptive. I wonder what his views to living there would be now?!!

He also made comment on his own research interests and Imperial College's teaching expectations: *"My particular research field is marine acoustics, yet I spend almost every vacation running exploration programmes to train people in the methods of locating ore-minerals.....I should very much like to be talking about the distribution of sediments on the sea-floor*

Remembering Professor Denzil Taylor-Smith

and their general physical properties rather than how to find copper in Cornwall”.

Denzil certainly achieved his aims when joining UCNW. Over the years his work and effort provided a steady stream of students, research projects, and research backers and created wonderful career opportunities for many of his students. I, for one, am incredibly grateful that Denzil chose to make the move back to Wales! There are many more like me; he supervised 20+ PhD students during his time in Bangor, as well as many of the MSc students enrolled on the highly regarded, unique, and innovative Marine Geotechnics MSc course.

His unique geological philosophy and vision, rapidly gained international recognition and put Bangor in the forefront of applied marine geosciences. This reputation still remains today. Throughout his career, much of Denzil’s research activity was directed towards providing a better understanding of continental shelf sediment physical properties and engineering behaviour. To this end he was awarded a range of prestigious research contracts and grants with significant funding provided by the Natural Environment Research Council, Ministry of Defence, NATO, and others.

His contribution to the University was immense. He was largely responsible for the creation of the School of Ocean Sciences through the merger of the separate departments of marine biology and physical oceanography. From the outset, one of his major priorities was to forge interdisciplinary links within the School and create new opportunities both within teaching and research; not an easy task! The outcome of his efforts can clearly be seen in the continuing success of the School.

He was appointed the first Head of School and was greatly appreciated for his excellent man management skills, care, and compassion. A quote from one member of staff sums this up: *“Denzil was a gentleman and a gentle man. As Head of School he treated everyone equally no matter what their position. He never forgot the secretaries and always bought them Easter eggs!”*

Similarly, a quote from a former research student illustrates the impact he had on his life and career; as a young researcher Denzil helped to relocate him up to Bangor soon after Denzil’s own move back to Wales: *“Den saved my career after I had a very bad time at*

Imperial College and I have always been very grateful to him for that. He was also an excellent person to work with all those years ago”

In addition to all Den’s academic and research activities, he was also extremely active in the commercial sector, generating large amounts of income for the College and the School. He was instrumental in the creation of the geophysical group’s commercial unit “AUGER” Geophysical Services, and was always happy and willing to muck in and get his hands (and body!) dirty when we were undertaking site investigations for CEGB and others. Every time I hear mention of Sizewell, which is quite often at the moment, I have ‘fond’ memories of freezing cold December evenings packing up after a 12 hour shift. The team of three - Den, Jim Bennell and myself - clad in oilskins and covered in thick sticky mud, used to hose each other down before retiring back to the hotel in Aldeburgh for a G&T and much needed rest! At last, and about 30 years on, the outcome of our efforts look like they will be put to good use in the design of the proposed new power station at Sizewell!

Life was always interesting in Den’s company. I have vivid memories of Den’s heroics in Amsterdam when he chased a mugger who ripped my handbag off my shoulder. Unfortunately, but maybe fortunately, he didn’t catch him. He reckoned he was about to have a heart attack after the sprint! Others (many unknown to Denzil) will have memories of when he was responsible for blowing up a water main in South Wales, whilst undertaking a site survey for Soil Mechanics!!

After a short period serving as Dean of the Faculty of Science, Denzil retired in September 1994. For a few years he and Meg enjoyed their caravanning expeditions in UK and on the continent, and Den managed to devote time and effort to the Parys Mountain Project -- essentially a return to his mining engineering routes. Sadly, his much deserved and planned retirement all too soon fell by the wayside as ill health prevented him pursuing his interests.

I feel privileged to have worked with, and been a friend of, Denzil and his family. My thoughts go out to Meg, his three children Huw, Kate, and Gareth, and their partners, and to his two grandchildren. I will cherish the many happy memories I have of our times together and am sure that many others will feel the same way.

(Angie Davis)

The sharp-eyed among you may have spotted something strange going on around the UK coastline recently. There have been sporadic sightings of groups of quadrat-wielding, wellie-wearing members of the public out on the rocky shore. The sight of these enthusiastic, intertidal surveyors could become a common occurrence over the next two and a half years. Why? Because the Capturing our Coast project has officially launched!

People with a passion for the UK's coastline are being invited to help make history by being part of one of the largest coastal marine citizen science projects in the UK. The £1.7m Capturing Our Coast project, funded by the Heritage Lottery Fund, is designed to further our understanding of the abundance and distribution of marine life around the UK. The aim of



Leonie training CoCoast volunteers at Bracelet Bay

the project is to recruit and train more than 3,000 volunteers to help build a more accurate picture of marine life all around the UK coastline.

Led by Newcastle University, the project is a national collaboration with project hubs at Bangor, Hull and Portsmouth universities, the Scottish Association for Marine Science, the Marine Biological Association of the UK and the Marine Conservation Society. It also involves a number of organisations including Earthwatch Institute, the Natural History Museum, Northumberland Wildlife Trust, the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), the Coastal Partnerships Network and the North West Coastal Forum. However, the citizen scientists are the keystone of the project and without them a venture on this scale just wouldn't be possible.



Four School of Ocean Sciences (SOS) alumni are on the Capturing our Coast team: Dr Siobhan Vye, who graduated with a BSc in Marine Biology and Oceanography in 2011, is the Project Officer in North Wales based at SOS; Dr Leonie Richardson who completed her PhD at SOS in 2005 is the Project Officer at the Marine Conservation Society in Ross-on-Wye; Dr Katrin Bohn, who undertook her PhD at SOS until 2012, is the Project Officer at the University of Portsmouth; and Debbie Winton, who completed both her undergraduate and postgraduate studies at SOS and graduated in 2007 with an MSc in Marine Environmental Protection, is coordinating volunteer management nationally in her role of Programme Manager at Earthwatch.

All four are recruiting citizen scientists in various parts of the UK to



Katrin introducing a group of volunteers to the shore at Southsea in Portsmouth

undertake intertidal surveys on rocky shores and to get involved in answering key ecological questions about the UK coastline. They provide training and ongoing support to volunteers to maintain interest and ensure high-quality data. Capturing our Coast will also be available to those who cannot get out to the shore, with the establishment of web-based citizen science options.

Since the launch in January, there has been an amazing response from budding scientists around the UK with over 2600 people registering with the project across the 7 hubs



Siobhan chatting seaweed at Church Island

With no prior scientific knowledge needed to get involved, the CoCoast team run training days to equip the citizen scientists with all they need to know, including an introduction to the marine environment, species identification skills and survey techniques. To date, over 1000 people have undertaken this training nationally. In North Wales alone, the team has trained over 250 people at the School of Ocean Sciences.

As researchers, a project like Capturing our Coast presents a great opportunity: not only does it allow scientists to work with a large network of citizen scientists to increase our understanding of how UK shores are responding to environmental change, but it also presents opportunities to raise awareness of marine science and pass on enthusiasm for marine environments.

If you would like further information about Capturing our Coast, please see our website, www.capturingourcoast.co.uk. You can also follow the project on Twitter, @