

Issue 8 | Autumn 2011 | Ocean and Earth Science

SOES News

Welcome to SOES News - the magazine for current and prospective students, alumni and friends of Ocean and Earth Science. We look forward to sharing exciting updates on our world-renowned scientists, features on cutting-edge research, profiles about our talented alumni, and fun stories about our students. Enjoy!

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National Oceanography Centre, Southampton

Professor Harry Bryden, FRS retires



Professor Harry Bryden, FRS

Friday 30 September marked the formal retirement of Professor Harry Bryden, FRS from the University. Harry joined the Institute of Oceanographic Sciences in 1993 and worked at NOCS from its opening as the Southampton Oceanography Centre (SOC) in 1995. From 2007-2011 he led the NOCS Graduate School through an exciting period of development and growth.

Throughout his distinguished career as an oceanographer Harry has experienced, in the words of Tim Minshall, the University's Head of Ocean and Earth Science, a series of "remarkable achievements". These range from the authorship and co-authorship of approximately 90 refereed scientific publications, to being awarded the 2009 Prince Albert I Medal by the International Association for the Physical Sciences of the Ocean, "in recognition of his fundamental contributions to understanding the ocean's role in the global climate system."

These achievements will be celebrated in a special symposium in spring 2012, which many of Harry's friends, collaborators and former students will attend. Speakers will present some of the most recent advances in their own research, which owe considerably to Harry's innovative work over the last four decades. Details of this event will be available shortly on the Ocean and Earth Science website.

Fortunately, despite this official retirement, Harry will continue to work at NOCS in a less formal capacity for many years to come.

Alumni explore the Southern Ocean

In January 2011, the NERC research ship *RRS James Cook* set sail from Punta Arenas, Chile on a 41-day expedition to explore newly discovered hydrothermal vents in the Southern Ocean. This expedition was linked intrinsically to the University of Southampton, not just through it being led by Ocean and Earth Science's Professor of Deep-Sea Biology, Paul Tyler, but by its inclusion of 10 Southampton alumni.

Here, in her own words, Professor Rachel Mills (BSc Oceanography with Chemistry, 1988) talks about the cruise.

"The NERC research ship *James Cook* sailed from Punta Arenas, one of the world's most southern cities, in January 2011. 21 scientists, including 10 Southampton alumni, flew south to join the ship to find the port paralysed by the Patagonian general strike and the city largely blockaded by the tax-hike protestors. Despite logistical difficulties we managed to sail with a full complement, heading south across the infamous Drake Passage towards Antarctica.

Our plan was to carry out a 41-day expedition to explore the newly discovered hydrothermal vents in this remote region. The expedition leader Professor Paul Tyler has vast amounts of experience of working in this hostile environment and he built a team of scientists with a range of experience in a variety of disciplines. The expedition took us south to the Bransfield Strait, Antarctica and then east to the South Sandwich Islands. Hydrothermal vents pump hot water into the deep ocean and we investigated both the chemical environment and the biological communities around the spectacular vent sites, culminating with the exciting discovery of a new, shallow vent site within Adventure Caldera on the East Scotia Ridge.

Southampton alumni led both the video surveying and mapping of the seafloor and the sampling of sediments and hydrothermal plumes around the vents. Studying at Southampton is clearly a springboard to a successful

scientific career, with global travel to fabulous destinations and great job satisfaction in pushing back the frontiers of science."

Alumni Involved:

- Cathy Cole (MSc 2010)
- Doug Connelly (PhD 1997)
- Jon Copley (MSc 1995, PhD 1998)
- Adrian Glover (PhD 2001)
- Laura Hepburn (MOcean 2009)
- Leigh Marsh (MOcean 2005)
- Rachel Mills (BSc 1988)
- Will Read (MSc 2003)
- Nikolai Roterman (MSc 2008)
- Veerle Huvenne (MSc 1999)



Rachel Mills and her fellow alumni on-board the *RRS James Cook* research ship.

The newly discovered site at the mid-Atlantic Ridge: the Moytirra vent field at 303m below sea level. Image from: ROV *Holland 1*.

University scientists involved in 'alien' life discovery

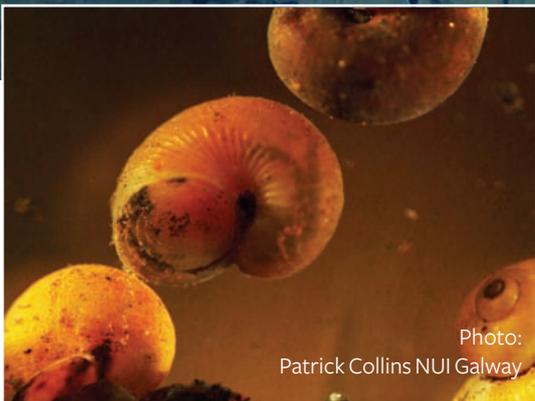


Photo: Patrick Collins NUI Galway

Snails from outside the hydrothermal vents.



Photo: Provision

Minister for Agriculture, Food and the Marine Mr Simon Coveney TD flanked by Dr Andy Wheeler (left) and Dr Bram Murton and Prof Patrick Fitzpatrick (right) plus the VENTuRE scientific team, the ship's Captain Denis Rowan and Dr Peter Heffernan, CEO of the Marine Institute (far left).

Undiscovered 'alien' life forms that thrive without sunlight in temperatures approaching boiling point have come to light thanks to a ground-breaking marine research mission aboard the Irish research vessel *RV Celtic Explorer*. The Irish-led VENTuRE mission was led by Dr Andy Wheeler of University College, Cork and involved scientists from NOCS, the University of Southampton, NUI Galway and the Geological Survey of Ireland.

The expedition discovered a previously uncharted field of hydrothermal vents along the mid-Atlantic ridge. Although people have been crossing this part of the ocean for centuries, the team was the first to reach this spot beneath the waves and to witness this natural wonder. These vents, which spew mineral-rich seawater heated to boiling point by volcanic rock in the Earth's crust below, are home to a rich variety of marine life that thrives in complete darkness on bacteria fed by chemicals. The investigation took place at 3,000 metres below the

surface of the sea using the Remotely Operated Vehicle (ROV) *Holland 1*.

The investigation was supported by the Marine Institute and by the National Geographic Society, who filmed the work for inclusion in an upcoming National Geographic Channel series, "Alien Deep," premiering globally in 2012. The mission also gained support from the Minister for Agriculture, Food and the Marine, Simon Coveney.

Dr Jon Copley, who is a lecturer in Marine Ecology within Ocean and Earth Science at the University of Southampton, is now working in collaboration with Patrick Collins from NUI Galway's Ryan Institute to catalogue and characterise the species found at the vents. He stated that "Using the ROV's high-definition video camera, we've watched unusual orange-bodied shrimp crawling around the chimneys, among clusters of tiny green limpets. Elsewhere there are writhing scale-worms, swirling mats of bacteria and eel-like fish – a riot of life in this unlikely haven on the ocean floor."



The alumni survey has confirmed that this year's Ocean and Earth Science graduates have bright futures ahead of them. Photo: Barry Marsh

Ocean and Earth Science alumni are going places !

One of the most important issues our students face is their future employability, and the University places a strong priority on preparing our students for “life after graduation.” We also recognise that our alumni offer a wealth of experience, which leaves them well placed to offer invaluable advice to the next generation of Southampton graduates.

Over the summer months of 2011 the University welcomed our first Alumni Intern, Lawrie Cowley (MSci Geology, 2011), to spearhead a survey to understand the career destinations of our Ocean and Earth Science graduates. The internship was funded by the Office of Development and Alumni Relations, Career Destinations and Ocean and Earth Science.

The survey was aimed at refreshing our Ocean and Earth Science alumni database. The survey results will help us

better understand the career paths of our graduates and how they would like to engage with us. Most importantly, we will now be able to promote the employability of our graduates much more effectively to prospective students, parents and employers.

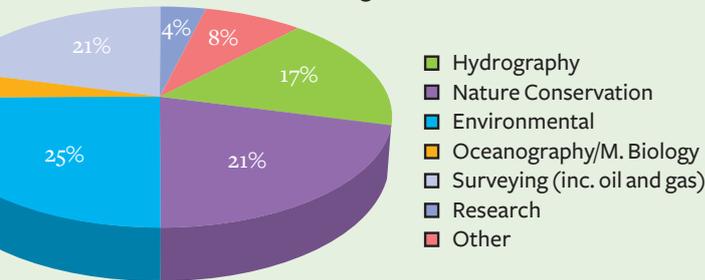
We extend our sincere thanks to all of our alumni who took the time to complete the survey — the results have been fantastic!

Did you know?

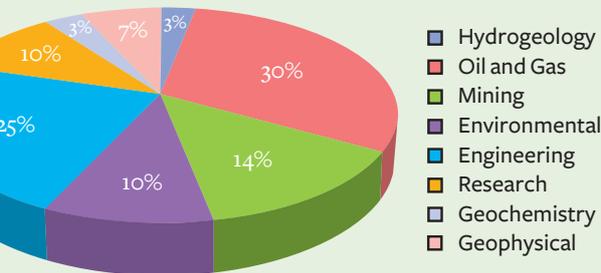
- Our alumni are highly employable. Of those who responded, 63% of graduates were employed within six months with another 30% going on to further study. This meets, and in some degree fields exceeds, University averages.
- Our alumni perform well in terms of the average salaries they receive. For example, for undergraduates of the past 10 years, 63% earn over £25,000 a year and 16% earn over £55,000 a year. Current and prospective students should be reassured that a degree from the University is worth the investment of time and resources they impart.
- Our alumni would like to get involved and further engage with the University. Over 50% of those who responded would like to attend class reunions with a similar amount agreeing to provide alumni profiles.

- Our alumni would like to come back and help current students, from attending the annual alumni careers event, to giving careers talks and even providing industry placements for students. All of these types of engagement will increase services to our students and help to cement our growing relations with important industry sectors.
- The survey also helped us to identify both known and new industries that employ our graduates, which will help us with curriculum development and employer engagement. The survey highlighted the growth and importance in engineering, teaching and finance-based roles for our graduates and confirmed the importance of sectors such as: oil and gas, mineral resources, environmental, nature conservation, surveying and research. This information will be used in planning for the next annual alumni careers event, making it larger and more representative than ever.

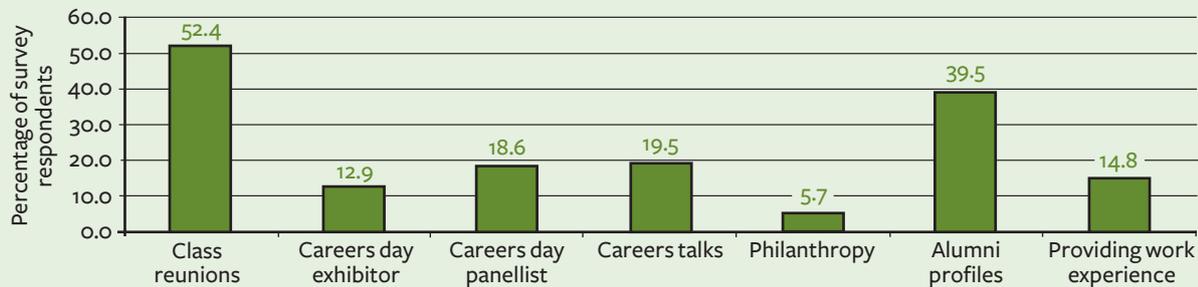
Current industry sectors of oceanography and marine biology undergraduates n = 44



Current industry sectors of geology and geophysics undergraduates n = 24



Engagement opportunities that our alumni are interested in n = 210



We thank you, our alumni, for taking the time to tell us how you are doing and for helping us to stay connected with you. The Southampton alumni community creates a dynamic space for alumni within the University and provides endless opportunities for alumni, students and the University as a whole to find and build their places in a global community.

Our alumni are an influential force in advancing the University's wider impact on society and in helping us to better serve our current and future students.

Thank you again!

Your gifts at work

In the last year, gifts from alumni and friends have helped the University to make a difference to the planet through cutting edge research, improved facilities and support for students where funds are needed the most.

In August 2011, NOCS completed a major refurbishment of the National Oceanographic Library at Southampton. The building project created a new mezzanine floor on a new level that incorporates five bookable rooms for meetings or group study and an open space available for all users of the National Oceanography Centre.

Ocean and Earth Science alumni gifts helped to purchase a new plasma screen for one of the meeting rooms in the library. The new screen is mobile and gives students greater flexibility for

studying and for delivering presentations. Gifts also purchased a range of new textbooks for student use in the library.

Further to this, alumni gifts have also supported the purchase of equipment for our oceanography and marine biology students carrying out project and field work. Salinity and temperature are key variables in understanding marine processes and the measurements are best made in the field. Alumni helped to fund a new portable temperature-salinity probe, which is now in regular use on our vessels and in the lab. We were also able to buy charts of the Falmouth area which are essential for planning safe and efficient work on the water during our summer field course. Students on this course gain important skills in using charts whilst setting up and carrying out work on the water.

We thank our many alumni who helped to fund these important enhancements for Ocean and Earth Science.

Before (left) and after (right) the refurbishment of the National Oceanographic Library at NOCS.



Oceanography and marine biology students in Falmouth carrying out fieldwork.

Alumni profile: catching up with Lucy Wells

BSc Marine Biology with Oceanography Year of Graduation: 2006

As soon as I saw the National Oceanography Centre, Southampton on an open day, I knew it was the only place for me to study. The facilities were all state-of-the-art and the boats allowed hands-on fieldwork to enhance the lecture series. Since graduating with a first-class degree in marine biology with oceanography in July 2006, I have worked in both Thailand as a marine biology consultant and in the Turks and Caicos Islands (TCI) in the British West Indies. In TCI I spent a year in the tourism industry narrating about Caribbean marine life onboard a semi-submarine and I was then headhunted by the Department of Environmental and Coastal Resources in the government of TCI. I subsequently began a job as Reef Restoration Project Manager in January 2008, managing the artificial reef projects in place. During this time I also co-wrote a scientific paper, which was published last year.

I have now returned to work in the UK and have put my marine assessment skills to use in the energy industry. This type of work utilises my understanding of the relationship



between marine developments and sensitive habitats and species.

The multitude of skills I have needed in all of my employment so far were enhanced through my time at the University of Southampton. My tutors also supported my desire to travel after university and provided me with excellent references and I know that they will always be there for further advice and guidance. I was also a student ambassador for the University, which required me to show prospective students around the campus. I was always proud to be a representative of such a fantastic institution. There is no doubt that a degree from Southampton will aid any good student in furthering their career in marine science as far as they want to go.

Create opportunity. Make a lasting difference for Southampton



As an Ocean and Earth Science alumnus and friend, you will have experienced firsthand the University's commitment to innovative excellence in teaching and research.

We are committed to recruiting the most talented students and increasing the opportunities available to every student, regardless of their background. We prepare our students to become confident national and international citizens and the potential leaders of an increasingly globalised work environment. We aim to provide each generation of students with financial support and the highest quality of education using the best equipment and resources to enable them to go out into the world and make a difference in their chosen field.

At the University we also make world-changing advances in research every day. We pride ourselves on being a place for opportunity and inspiration where our researchers can devise

innovative solutions to address the global challenges we all face. Our research is world leading and our reputation is one that you, as a graduate, can be proud of.

You can play a vital role in the University's future by making a gift to support the University of Southampton. Support from alumni is helping to cultivate a rich and varied environment for world-leading learning and discovery and providing support for our outstanding students, academics and researchers, both today and for the future.

A gift of any size makes an instant and lasting difference at the University and you can be reassured that you are helping to transform lives and investing in the next generation of great thinkers.

There has never been a better time to show your commitment to the University of Southampton.

Mark your calendars!

We are pleased to announce the dates for the fourth annual Ocean and Earth Science alumni "Life after Graduation" careers event and our popular open house Ocean and Earth Day. Both of these events will be held in March 2012.

We encourage all students and alumni currently seeking employment to attend the alumni careers event, which will be held at NOCS on **Tuesday 6 March 2012**. In recent years we have welcomed over 250 students to listen to a range of companies and panel speakers discussing employment opportunities in a variety of sectors relevant to Ocean and Earth Science.

If you would like to participate in this event on 6 March 2012 as an exhibitor or speaker, please contact:
alumni@noc.soton.ac.uk

In addition, please join us on **Saturday 17 March 2012** for our annual Ocean and Earth Day event. Each year over 2,500 members of the public attend this open house event at the National Oceanography Centre, Southampton. The free, popular event attracts children and adults and offers interactive exhibits, hands-on displays and the opportunity to tour one of the world's best centres for Ocean and Earth Science.



Ocean and Earth Day, NOCS 2011.
Photo: Barry Marsh

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If you would like to make a regular gift to the University please contact: **annualgiving@southampton.ac.uk**

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National Oceanography Centre,
Southampton

Front cover photo: Alumna Lucy Wells working off the Turks and Caicos Islands.