UNIVERSITY OF Southampton
School of Ocean and Earth Science

Issue 6 | Autumn 2010

SOES News

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

National Oceanography Centre, Southampton

Lucky seven. Top tips for success in your career search

Daunted? Getting on the career ladder is always hard work - many would say a full time job. Taking advice and a strategic approach could save you valuable time and result in a more satisfying career. Diana Fitch, a Careers Advisor with the University of Southampton, helps graduates navigate the career search with these helpful tips.

What do you want to do?

The courses at SOES have some obvious career outcomes, but there are still many different options, and of course each year some graduates opt for something completely new. Books such as '*How to get a job you'll love*' by John Lees (McGraw Hill 2007) or computer aids such as 'Prospects Planner' on **www.prospects.ac.uk** will help you work out what you want and what jobs might suit.

Know yourself

Take time to analyse all the factors which will influence your career choice: your degree and work experience; skills, strengths and motivations; any limiting factors such as location; and your career drivers such as pay, training, variety and responsibility. This will help you identify with jobs, and make evidence-based applications.

Know your jobs market

What do employers want? Who are they? You need to know. This means putting in the ground work to understand job roles, company markets, and the sector in which you are interested. Sources of information include specialist publications and websites (including professional bodies and trade organisations), broadsheet newspapers, and specialist careers guides. Sign up to relevant sites for e-news and job alerts.

Target your CV

With clear job goals, you are now ready to put together your CV. There is plenty of advice available about writing effective CVs. Expect to make several drafts. A CV must be professional and targeted – can you do this specific job? If you want to be a marine biologist for example, then your CV should show this through relevant skills and experience. Use your degree based field trips, lab work, modules and projects, volunteering, plus any work experience. Include key events – you want the reader to be interested enough to find out more.

It's competitive out there

Help yourself by being organised:

1. Make a schedule, be realistic, but determined.
2. Use a log to record your activity, note leads for follow up, mind map your skills, etc.
3. Keep copies of all applications.
4. Review progress, analyse your performance (on paper and at interview) and make improvements.
5. Get feedback where possible, use Career Destinations
6. Address gaps, do you need some work experience? Do you need further study?
7. Evolve a Plan B, knowing your fallback approach will help you keep positive.

Invest in your future

By keeping abreast of sector and company news you will learn to spot opportunities ahead of the field. Extend your networking from Facebook to the professional arena and develop your creative job search skills. Information interviewing will increase your job knowledge and circle of professional contacts. These are skills for life and will help you tap into the many jobs which are never advertised.

Enthusiasm is your best friend

Look after yourself, have regular treats, keep fit. Follow up promptly on leads as well as applications and interviews - an enthusiastic candidate makes a positive impact and may be considered for another post.

SOES Alumni can get help from Career Destinations, the University of Southampton career services in person, by phone or by email. Alumni can use the centre, the careers library and attend careers events. **www.southampton.ac.uk/careers**

Good Luck!

Alumni return for annual SOES Alumni Careers Event.

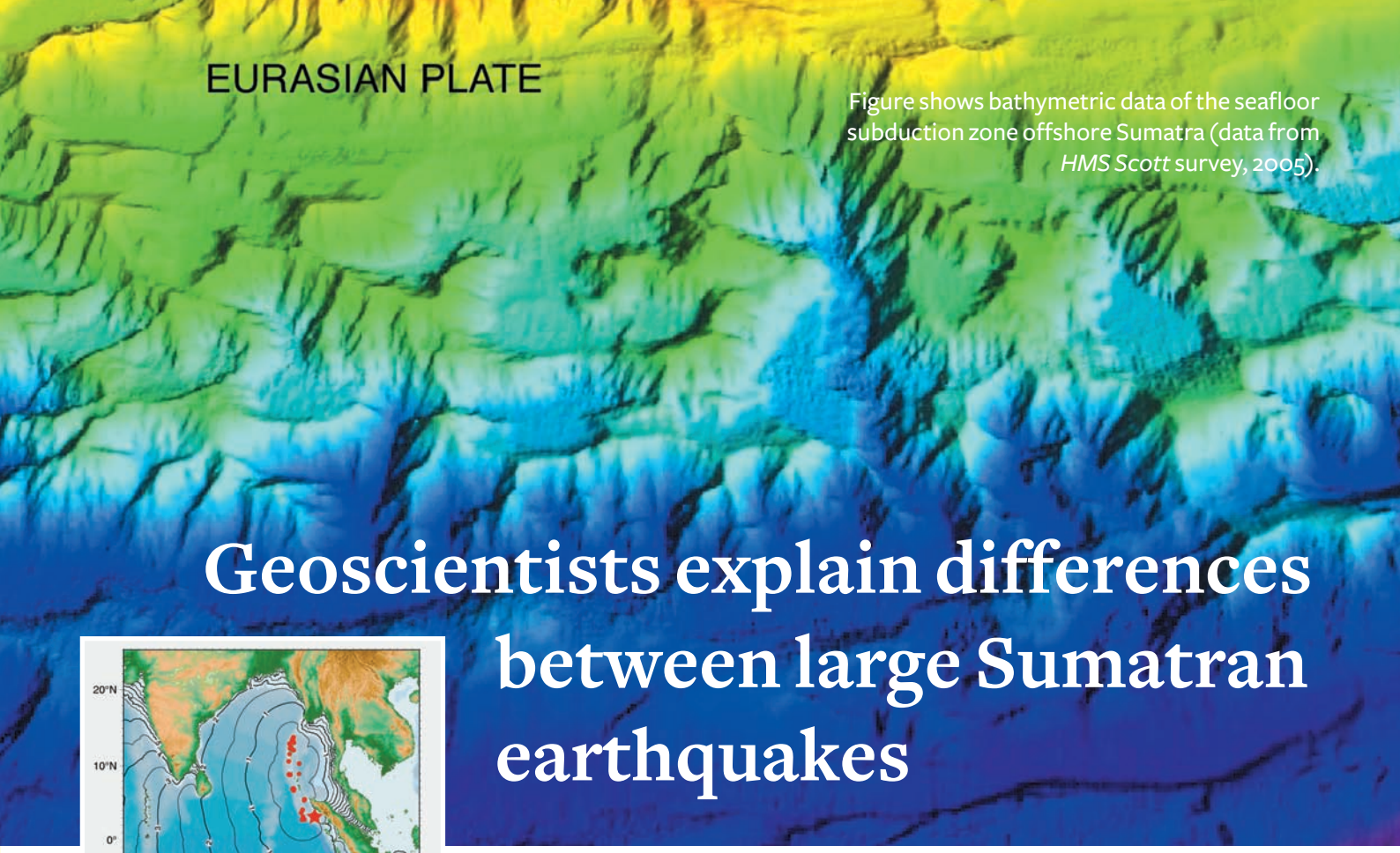
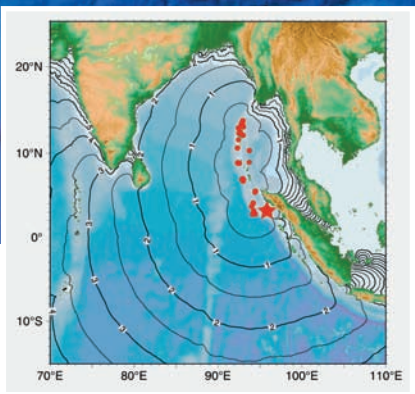


Figure shows bathymetric data of the seafloor subduction zone offshore Sumatra (data from *HMS Scott* survey, 2005).

Geoscientists explain differences between large Sumatran earthquakes



Map of the eastern Indian Ocean showing the earthquake rupture zone (around red dots and star) and tsunami waves propagating away from the rupture zone (contours represent arrival times of tsunami waves in hours after the earthquake). From Kenji Satake, 2005.

University of Southampton scientists based at the National Oceanography Centre, Southampton, along with US and Indonesian collaborators have uncovered clues as to why some undersea earthquakes generate huge tsunamis. Their findings, published in the July edition of the journal *Science*, may help explain why the 2004 Sumatra 'Boxing Day Tsunami' was so devastating.

Early in the morning of 26 December 2004, a powerful undersea earthquake started close to Simeulue Island off the west coast of Sumatra, Indonesia and extended ~1200 km to the north. The resulting tsunami caused devastation along the coastlines bordering the Indian Ocean, with tsunami waves up to 30 metres high inundating coastal communities. With very little warning of impending disaster, more than 230,000 people lost their lives and countless others were made homeless.

Nearly four months later, on 28 March 2005, another strong earthquake (although significantly smaller than the Boxing Day Tsunami) occurred immediately to the south, but triggered only a relatively small tsunami that claimed far fewer lives, most of them on the island of Nias.

The largest undersea earthquakes occur at 'subduction zones' where one tectonic plate is forced (or subducts) under another. Large sections of plate can get stuck, causing deformation, and eventual slippage or rupture with the release of vast amounts of stored energy.

"Both earthquakes occurred on the same fault system, initiating 30-40 kilometres below the seabed. Our results will help us understand why different parts of the fault system behave differently during earthquake slip which then influences tsunami generation. This is critical for adequate hazard assessment and mitigation," says Dr Simon Dean of SOES.

Seismic reflection profiles collected by Dr Dean and his colleagues crossing the Sumatra margin from northwest of Simeulue Island to Nias Island revealed differences between the plate boundaries of the 2004 and 2005 Sumatra earthquake ruptures.

Between the deep ocean sediments and the subducting oceanic basement of the Indian tectonic plate there is a surface, called the 'décollement' that forms the plane of slippage. At the plate boundary, the front edge of the overlying Eurasian plate acts rather like a bulldozer, scraping the material above the décollement up to form an 'accretionary prism'. The researchers discovered a number of unusual features at the rupture zone of the 2004 earthquake such as the seabed topography, how the sediments are deformed in the accretionary prism, and the locations of small earthquakes ('aftershocks') following the main earthquake. They also found that the décollement surface has different properties in the two earthquake rupture regions. These differences resulted in slip in the 2004 earthquake continuing further seaward and much closer to the seabed, potentially one of the factors causing a larger tsunami."

"By comparing our results with other subduction zones around the world, we believe that the region of the 2004 Sumatra earthquake is very unusual, suggesting that tsunami hazards may be particularly high in this region," said Dr Lisa McNeill, also of the University of Southampton.

Geology Class of 1990 Reunion goes 'glamping'!

Jacqueline Ford

The University of Southampton has over 180,000 alumni around the world and we enjoy helping you reconnect and stay in touch with your fellow graduates. For example, in September Alumni from the classes of 1960, 1970 and 1980 came back to campus to celebrate their 30th, 40th and 50th anniversaries since their graduation. Just a few miles down the coast, another reunion was being held by Geology graduates from the Class of 1990. Jacqueline Ford tells us about the reunion and her happy memories of Southampton.

Turning forty can do funny things to you and in my case, it made me nostalgic and reflective about my time at Southampton: the good old days when I had no real responsibilities; no mortgage; no nine-to-five job and an active social life despite having to get up for lectures in the morning! What happened to the class of 1990 I thought? What were my fellow geospodsters up to? (Geol Soc kind of morphed to Geo Spod one day and the term 'spodster' was born). I was still in touch, and met up with a handful of people, but there were a lot that I hadn't seen since graduation in July 1990. Having finally given in to Facebook, I came across the Southampton University Alumni site which enabled me quickly to reconnect with Marc Goodman and Mark Gibson – and the seed of an idea was sewn.

In Spring 2010 the Alumni Association kindly sent out a note to class of 1990 Geology alumni they have on record (a good reason for all of us to keep our contact details up to date) and, the emails started to fly! It seemed like every couple of days a new 'spodster' was found, and the banter and teasing was picked up with ease – it was like we had never been away from Southampton.

Spodsters at Stair Hole, Lulworth

The date was set for August 2010 to coincide with Paul Matthews' visit to the UK from Zimbabwe – and making it 20 years since we all graduated. The only thing to agree now was where we were going to meet. Back in the day it seemed that every other fieldtrip we had was to Lulworth Cove so it was a bit of a no brainer that we would end up somewhere along the Jurassic Coast.

Out of a possible 25 people, we managed to track down 22*, which is far more than we thought possible and out of the 22, 15 were free and able to come! One of my memories of Freshers' Week was having repeat conversations with people about where I was from, what A-levels I'd done, what Hall I was in, etc. To help counter the same thing happening in August, and to give those who couldn't come along the chance to be there 'on paper', I sent out a resume template asking: "After graduation I . . ." and for this to be returned with a recent photo. Thanks to Joanne Donahoe at Southampton for tracking down our mug shots from our first day in 1987 – just how 1980s was some of our hair –oh my!

The resumes were compiled and sent out a week before we got together. It was really interesting to see what everyone was up to, as well as to have a good giggle about what we used to look like. Six of us stayed in Geology in some way, shape or form, but most have deviated away; five Spodsters have PhDs; some are running their own companies; some work in the private sector; some in the public sector (two are physics teachers) - a real mix. One notable fact was just how recently (last few years) many had started families. Looking at the 1987 and 2010 photos side by side, it can be said we all look the same, just a little more 'lived in'.

- Geospod

Then and now: the Geology Class of 1990

And the reunion itself? Camping in August, in the UK, what do you think? Yes it rained – and Weymouth was shrouded in a sea fog for the whole of the weekend and we didn't get much of view beyond the neighbouring field. But this didn't dampen our spirits or stop us from having a real laugh. Paul Matthews, Jason Roberts, Phil Stephenson, Simon Woods, Andy Brown, Steve Ashbee and I arrived on the Friday. Sadly Marc Goodman, Caroline Hobson (guest spodster as was Oceanography with Geology), Andy Williams and Mark Gill had to change their plans at the last moment and couldn't come.

After cooking breakfast in the rain on Saturday morning we retraced part of a year one field trip from Osmington to White Nothe. Jason had his yellow Geology field notebook, embellished with pictures of Tina Turner (stickers from crisp packets) and was able to tell those of us who had forgotten what we were looking at!

Knowing we wouldn't get to Durdle Door and back before Julian Viggars (whose 'after dinner' Geology quiz we all did terribly at), Matt Rowlands, Tracey Minton (now Hughes) and Jon Trueman arrived, we headed back to the Smugglers Inn (see group photo). Eleven Geology graduates and beer, the rest of the story doesn't really need to be told does it?

We packed up (in the rain) on Sunday and headed to Lulworth Cove for one last group shot (in the rain) and goodbyes. Would we do this again – Yes we would. Would we camp – Erm, no! Will we leave it another twenty years - Absolutely not!

* We were unable to track down the following Spodsters: Ruth Duthie, Adrian Cuthburt and Gary Stevens. If you can help us find our former chums please get in contact.

Alumni Profile

Jane Francis

When Jane Francis began to think about her University options in the 1970s very few offered degrees in geology and geophysics and there were very few women in those degree courses.

Jobs for geology graduates were predominately for oil service companies, core logging and NGO's and it was not uncommon to see "Women need not apply" on job adverts. Now as a Professor of Palaeoclimatology at the University of Leeds, Jane reflects on the huge changes she's witnessed and experienced in the field.

Jane received her BSc in Geology and PhD in Geology/Biology at Southampton. Her field trips on the Dorset coast were some of the happiest memories and underpinned a growing passion for fieldwork and understanding the ancient past. "I was interested in studying what the world looked like millions of years ago and helping to visualise that ancient world." She continued to do research on the Dorset coast after her PhD and became an expert in fossil forests. "This helped to put a stamp on my career."

Jane held a NERC post-doctoral fellowship at the University of London and then went to the British Antarctic Survey for a year. "My experience at BAS lit a spark in me for polar research."

A post-doctoral fellowship in Australia allowed Jane to spend many months in the field in the central deserts of Australia, in order to reconstruct ancient climates of Australia at a time when the continent was positioned close to the south pole. She starting working in the Arctic with Canadian scientists on fossil forests, the topic for which she became well known. In 1989 she received an invitation from BAS to participate in an expedition to Antarctica—this would be the first of many trips to the southern continent.

In 1991 Jane returned to the UK to become a Lecturer at Leeds University and has since carved out an international reputation for her research into palaeoclimatology. "My research concentrates on the polar regions and what they looked like in a past greenhouse climate. By offering a window into the past—a time when the poles were warm, green and inhabited by exotic creatures—we might begin to understand future polar environments as a result of climate change."

To help in visualising what the past looked like, Jane often employs an artist to reconstruct the worlds she is studying. "Over 100 million years ago Antarctica was ice-free. The most common fossils we find in rocks of this age are trees and plants, which comes as a surprise to the public. The fact that ice now covers most of Antarctica is relatively new in our geological history."

Jane's contributions to the field were recognised in 2002 when she was only the fourth woman to receive the Polar Medal for 'outstanding contribution to British polar research.' "My years at the University of Southampton were very influential in shaping my research interests and I will always be grateful for the impact it had on my career."

Photo: Jane Francis amongst the penguins in Antarctica.

Schlumberger donation helps SOES students

Schlumberger Ltd, the leading provider of oilfield services and technology to the international petroleum industry, has donated specialised software valued at $450,000 to the University of Southampton.

The Schlumberger software, which is widely used in oil and gas exploration and production, will be installed in SOES. The donation of Petrel expands the School's use of industry-standard packages previously donated by Schlumberger allowing the School to integrate state-of-the-art tools developed for the oil industry into their teaching and research.

With the Schlumberger software suite, all work processes lead to one unified Earth model, enabling faster and better decision making. The Petrel software allows for the unified assessment of uncertainty. SOES will use the software to help teach undergraduate and master students of geophysics and geology.

Jesus Nunez, a geophysicist at Schlumberger Information Solutions, made the gift to Dr Simon Dean of SOES as part of an effort to increase industry-standard geophysics and geology software knowledge for students. This preparation will broaden the skill sets of University geoscience graduates, making them more attractive in the job market after completing their degrees.

"The software will enable us to instruct our students with cutting-edge technology which will support future career opportunities in the energy industry," said Professor Tim Minshull, Head of SOES. "Access to state-of-the-art, industry-standard software will help students to better understand the concepts they learn in the classroom, and will prepare them to enter the oil and gas industry as highly productive geoscientists."

Photo: Barry Marsh

Create opportunity. Make a lasting difference for Southampton

As a SOES 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 then 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 outstanding learning and discovery and providing support for our outstanding students, academics and researchers both today and for the future.

Photo: Ian Harding

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. Your gift will be matched under the Government's matched funding scheme and can also be Gift aided to make your support go further than ever before.

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

SOES celebrates the Class of 2010

On 20th July, 2010, one hundred and sixteen SOES graduates received their degrees from the University of Southampton.

Graduation is the highlight of the academic year and a tribute to the hard work of our students during their time at Southampton. It is also a time for students to express their thanks to their families and to the staff who have supported them through their endeavours.

After receiving their hard-won degrees, the new graduates along with their parents, families and friends joined academics and staff at the Waterfront Campus to celebrate their success with champagne and strawberries and to recognise student prize winners.

The School's roots can be traced back to 1862 when geology was first taught, and to 1964 when oceanography was first offered as a degree course at the University. Through the years, the departments of Geology and Oceanography evolved and in 1998 merged to become SOES. Today the School is one of the strongest in the UK for marine and Earth studies and students study along-side world-leading scientists in an unparalleled academic environment.

Our 2010 SOES graduates join a Southampton alumni community that is 180,000 strong and spans the globe.

Congratulations to the Class of 2010!

Class of 2010 graduates at NOCS.

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

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You may also give on-line at: ***http://www.soton.ac.uk/supportus/donatenow*** *and your gift will have immediate impact.*

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Front cover photo: Deploying the seismic source. Cruise SO198-2 Science Party