

Department of Geography & Earth Sciences

Issue 9

“Ni hao” “Hello”

Emily Strub,
 Postgraduate Student

Last Easter I took the chance to immerse myself in three amazing weeks of unforgettable Chinese Culture! I was lucky enough to have been chosen for the Study China programme, which is government funded. I spent three weeks at Zhejiang University, which was a charming place about an hour south-west from Shanghai. Shanghai is renowned for its natural beauty, and is home to the famous West Lake which the Chinese refer to as ‘heaven on earth’. We spent our first day in China on a boat exploring the West Lake. The lake has a number of islands with beautiful pagodas in the middle of each. This was followed by a water and light show with music that gathered a huge crowd it was so mesmerising!

One of the aims of the trip was to learn Mandarin and in our first lesson our teacher taught us how to pronounce and write our names in Chinese. The language was quite hard to start with as it is a tonal language, meaning that if you pronounced a word with the wrong tone you could accidentally say ‘horse’ instead of ‘mother’! However, our language and pronunciation skills were sharpened up pretty quickly when we realised that none of the taxi drivers or shop owners spoke any English at all, which led to some quite amusing conversations!

On the first weekend a group of us decided to head for Shanghai. The city is completely different from anywhere I had been before. Its rapid development during the last 10 years has created an amazing, buzzing atmosphere, despite the layer of smog you can see above the city. We went up the Shanghai World Finance Centre, the tallest observatory in the world, for some incredible views overlooking the Bund!



On our return we took a trip up to Mogan Mountain where Chairman Mao once lived. I was quite surprised to find the house rather plain and without decoration considering his vast wealth and power. This was followed by a very traditional Chinese meal of chicken feet, fish eyeballs and duck tongue! I ordered a chicken soup and was greeted with a bowl of hot water and a floating chicken’s head....safe to say I lost my appetite!

Back in Hangzhou we visited local families to really engage in their day-to-day lives, and we were taught how to make dumplings. The families also tested us on our Mandarin knowledge, something that was extremely useful as it ensured that I passed my HSK Level 1 exam, a Chinese proficiency test. We were also taught kung-fu and tai chi something I really enjoyed, as well as having the opportunity to try traditional Chinese arts such as calligraphy and mask painting. Nearing the end of the trip, we visited a tea plantation and tried our hand at tea picking whilst wearing traditional hats. My three weeks in China flew by, in a blur of learning Mandarin, experiencing breathtaking views from the mountains and immersing myself in the Chinese culture and cuisine, but I wouldn’t have had it any other way. I would jump at the opportunity to return to China as it was such a fantastic experience and I highly recommend applying for the program - you won’t regret it!



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The news story that dominated the headlines over recent months was the devastation wreaked by Typhoon Haiyan in the Philippines. A bit closer to home, Aberystwyth itself has been hit by a series of storms, which have left their mark on the promenade. We all witnessed the power of nature to destroy settlements and lives. More broadly, the event demonstrates the significance of Geography as a discipline in helping us to understand the major challenges facing our world, whether in relation to the physical processes operating within the ocean and atmosphere or the human processes, which means that certain countries are more vulnerable to 'natural' disasters than others. Importantly, Geography and geographers can also help to provide solutions to some of these problems; by finding better ways of predicting the future.

Our research in the Department of Geography and Earth Sciences continues to understand some of these key challenges facing both humanity and the natural world. There are several new research projects starting this academic year, which will examine, among other things, the understandings that people have had of extreme weather events (Drs Sarah Davies and Cerys Jones), the impacts of globalisation on communities throughout the world (Professor Mike Woods), as well as the different mechanisms that can be used to change people's behaviour, not least in relation to environment damage (Professors Mark Whitehead and Rhys Jones).

Part of the significance of this research, of course, is that it helps to inform and improve the quality of the learning environments that we create within the Department. First-year modules, such as Climate Change, The Atmosphere and the Water Cycle, Global Environmental Issues, and Power, Place and Development, seek to understand some of the key themes reflected in Typhoon Haiyan. These first-year modules are complemented by further modules in the second and third years, which focus in more detail on issues such as Sustainability and Resilience, Geohazards, and Governing Uncertain Futures. In all of these modules, our teaching staff provide expert analysis of the challenges facing the world, as well as exploring potential practical solutions for these challenges.

We are very excited this year, in particular, about the introduction of two new Masters schemes, starting from September 2014 onwards. The first is an MSc on Environmental Change, Impact and Adaptation, while the second examines River System Dynamics and Management. These two new MSc schemes, as well as our undergraduate and other Masters schemes, show our on-going commitment to arming our graduates with a range of academic knowledges and practical skills with which to address the fundamental challenges facing humanity.

Professor Rhys Jones, Head of Department

Undergraduate Experiences

Geography and Earth Sciences at Aberystwyth offers fantastic opportunities for students to explore our World by studying abroad, spending a year in employment, gaining summer work experience, conducting exciting research, or just going on an adventure for the joy of it!

From Germany with love

Laura Gerrish,

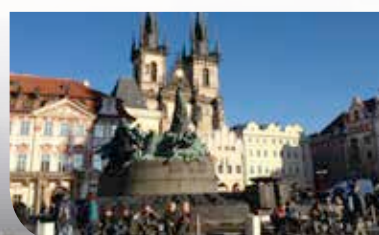
Undergraduate Student

Studying physical geography and German meant that I had to spend a year abroad last year as part of my degree. This was something which although I was looking forward to, I was extremely scared and nervous about. However, after a couple of days surrounded by friendly, welcoming people I could not wait to throw myself into the year.

I went with the British Council programme and spent the year teaching English in a school in Karlsruhe, Baden-Württemberg. Seeing the passion and willingness the children had to learn English was extremely rewarding and I felt like I made a real difference to the classes I helped out with. I found the work very helpful and I know that both the life and work experience that I gained will help me in the future.

One of the best aspects of my year abroad was being able to travel to so many new places around Europe. I visited the Czech Republic, Austria, and Liechtenstein amongst other countries, and also explored many areas of Germany which I had not seen before. Seeing the different landscapes and cultures in these countries was fascinating and some of the places I visited, such as the Swiss Alps, truly captivated me. I have always known that I want to travel as much as possible and the last year confirmed this for me. It was a fantastic opportunity and I was glad that I was able to participate and then carry on my geography studies when I returned to Aberystwyth.

I would highly recommend the programme to others and given the chance I would more than happily go back and do it all again, even the moments of feeling completely lost in a foreign country and the days where I seemed to forget all of my German!





Vive la France!

Lizzie Wignall,
Undergraduate Student



Studying a Joint Honours BSc degree in Physical Geography and French at Aberystwyth University has opened up many opportunities to discover new cultures, make new friends and learn new skills abroad.



Last summer, I worked as a Eurocamp and Keycamp Childrens' Courier on Camping La Pergola, Jura, France. Alongside another girl, I ran sport and art activity sessions, treasure hunts and discos for children aged between 4 and 12 years old.

Later that summer, as part of my compulsory Year Abroad, I started work as an English Language Assistant in three primary schools in La Voulte-sur-Rhone, Ardeche, France. Alongside about ten other language assistants, we all decided to live in Valence, the capital of the Drome and commute out to work. Together, we visited Val du Rhona chocolate factory where you could sample chocolate ravioli pasta and Valence's ice-skating rink, sound and light festival and Crussol castle. Other highlights through the year included visiting Grenoble's Christmas market, the Pope Palace and famous bridge in Avignon as well as seeing university friends at Lyon's light festival.

With the confidence, independence and problem-solving skills I gained from living abroad, I signed up to work as an au-pair in Salvarosa, near Venice, Italy for a month during the summer this year. The family and two children, aged nine and five, were lovely and lived next door to their grandparents' farm. Together we visited Venice, the foot of the Italian Alps and the coast.

I've had an amazing time over the last year and can't wait to put my new skills into use during my degree.

Behind the Scenes in DGES

**Rhodri Bevan,
Undergraduate Student**



Hywel Griffiths, Simon Foulds and Rhodri Bevan in the Nant Cwm Du catchment.

After the relief of completing my first year exams in May, I quickly realised that my thorough revision had resulted in my neglecting to plan my summer holidays. My experiences from the first year had stimulated my interest in the physical aspects of geography, and I was anxious to secure an opportunity to expand my research experience and develop my practical skills through fieldwork. My tutor suggested that I contact Dr Hywel Griffiths from the River Basin Dynamics and Hydrology Research Group, to enquire about any available opportunities in the department, and fortunately he replied that I was welcome to assist with some projects over the summer.

I was pleasantly surprised on the first day to discover that I had been assigned my very own desk and computer in a roomful of busy PhD students. My first task was to map the river channels of rivers near Bala and the Ystwyth Valley using the Arcmap mapping software. Although I took some time to familiarise myself with the software, it was a valuable opportunity to develop relevant information technology skills for my subject and to reacquaint myself with various fluvial landforms.

I then assisted Dr George Petropoulos in his efforts to develop a computer model (SimSphere) which simulated and predicted climate according to various parameters. I was responsible for assessing and organising the relevant statistical information using Microsoft Excel. In order to run the model, it was necessary to hijack the B23 computer room for a whole evening to utilise the computing power of almost a hundred computers.

The highlight of my work experience was the opportunity to take part in the fieldwork for various projects, which allowed me to learn and then apply my new found skills in some of Wales' most scenic areas.

I helped Dr Hywel Griffiths and Dr Simon Foulds with their research at Cwmystwyth. There, we used GPS to map the slope of stream channels and measured fluvial landforms including boulder berms to assess the frequency and magnitudes of historical floods. I was introduced to the technique of lichenometry, whereby the size and abundance of lichens on boulders are measured and then dated by comparing them to lichen found on gravestones at nearby cemeteries.

I was also given the opportunity to assist in the fieldwork of PhD student Jo Matthews, as part of her research into suspended sediments in the drinking water reservoirs of the Brecon Beacons. I learned how to utilise various equipment and techniques for assessing sediment in streams, as well as how to protect expensive equipment using no more than sticky tape, freezer bags and Tupperware!

I believe my period of work experience with the River Basin Dynamics and Hydrology Research Group was hugely beneficial and provided me with a useful and enjoyable introduction to the world of research.



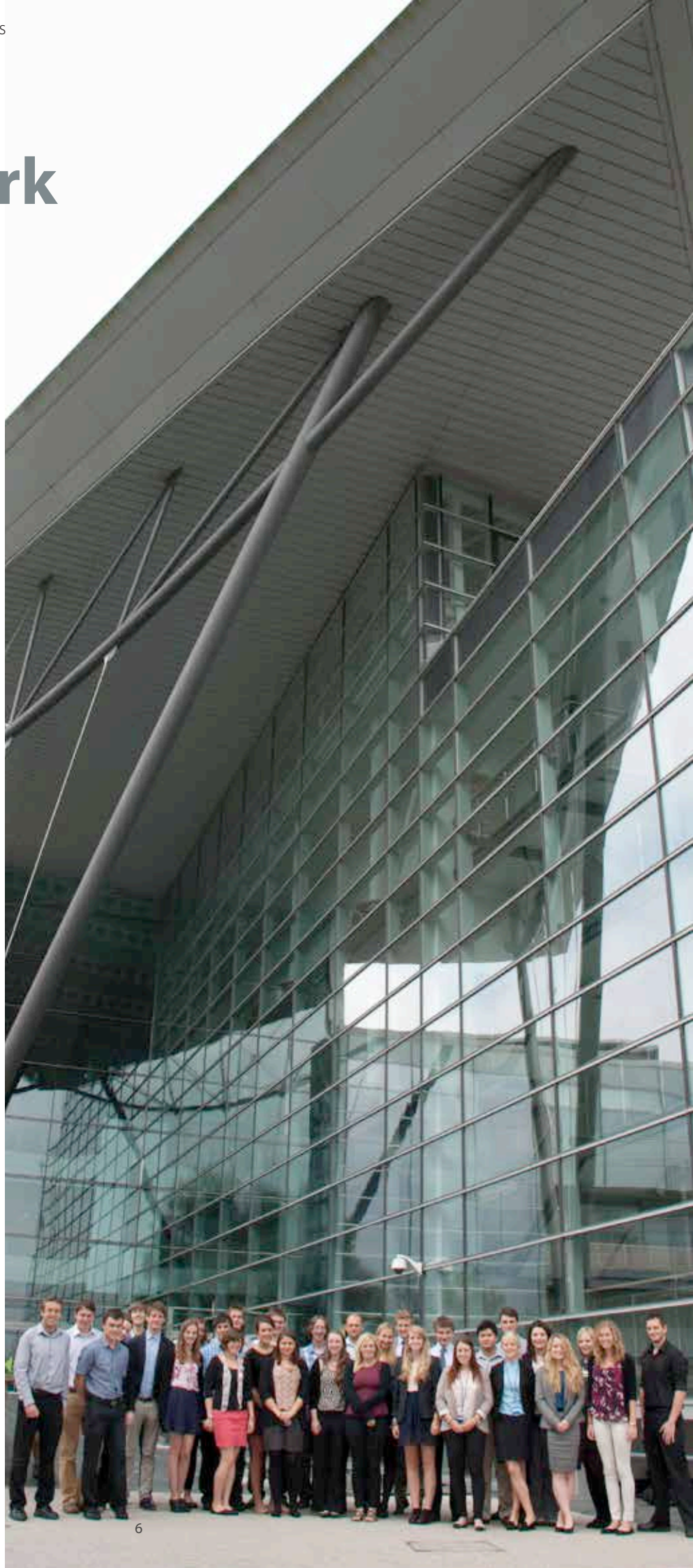
Weather Work

Jessica Wood,
Undergraduate Student

During the summer I took part in the 12 week summer placement scheme at the Met Office based in Exeter. Overall there were around 40 students on the summer placement scheme ranging from A level students to those who have recently graduated, all with varying interests from business and marketing to maths and meteorology. Whilst there, I worked within the Digital and Global Media team creating and writing website content to aid users in learning more about the weather, on topical subjects such as heatwaves and humidity. As a summer placement student, I was treated like a fellow staff member and quickly thrown into the 9-5 working life attending team meetings and having to meet deadlines.

As well as working within the Digital and Global Media team, I had the chance to spend time within the studio understanding how the green screen process works. I was given the opportunity to shadow a forecaster and understand the process from how they interpret the raw weather data, to how it eventually ends up in the media as part of the daily weather forecasts, as we see on the television.

Also during my placement, I worked across the office with other placement students to promote the Met Office's own weather app. within the organisation and as part of this we even created our own promotional video. To conclude my summer placement, I produced an extensive report based on competitor analysis of the numerous top weather apps. This report will be used to aid the future development of the Met Office' own weather app. As a whole, it was an enjoyable summer and an interesting learning experience working within such a huge and important organisation. Overall, I would definitely recommend the Met Office summer placement scheme to anybody.





Amazonian Adventures

Sophie Tumber,
Undergraduate Student

During the summer I was invited out to Brazil for a 7 week internship for the company Bunge, with a focus on sustainability and environmental management which then formed the base of my final year project.

I arrived into São Paulo's international airport then got straight on another plane to Balneario Camboriu where I would be based. The visit was brief as next day I flew to Rio Grande in the South of Brazil to take part in a conference. The conference covered a variety of topics from engineering to sustainability.

From Rio Grande I travelled back to São Paulo to spend a couple of days in the company's central office. I was able to take part in the environmental working group meetings where we discussed the company's 2013 targets.

Finally, after a busy 2 weeks I was back at base for more than 12 hours! This week was spent in the operations office which focused on getting to know what goes on in the PQSE (productivity, quality, safety and environmental) department as well as being involved in the company's nature project.

The following week I was based in Nova Mutum in the West of Brazil. To get there I took two flights and a 5 hour drive - Brazil is big! The main reason for us to be in Nova Mutum was to carry out an environmental assessment of the plant and check up on their waste water management. One evening I had alligator and chips for dinner!

Back at base I spent time with people who work on the company's nature project; this was probably my favourite part of the internship. I was taken to the Figura Branca nature reserve and walked several trails, which employees and school children are taken on to learn more about the environment.

I then had to prepare for my trip to the project in the Amazon Rainforest where I would be carrying out another environmental assessment. To get to Belem took a whole day and to get to the project from the city we had to get a car-ferry across the River Para. I was taken on a tour of the project which was really interesting as it is still in construction and I was able to observe what they are doing in order to maintain cultural and environmental values, especially important here as the project is in the middle of the Amazon Rainforest.

This experience has been truly rewarding; being able to work in a different country whilst learning more about its culture and gaining the experience and information to complete my university project.

Dissertations

Each year our third year students are required to produce a dissertation of independent study supported by a member of staff with expertise in their research field. Here some of our final year students tell you all about their dissertation adventures.

Kalahari Nights

Helen Morgan

Towards the end of the summer this year I was fortunate enough to gain experience as a research assistant on a project undertaken in the Kalahari Desert in Botswana. The research was part of a wider project led by Dr Andrew Thomas from Aberystwyth and academics from the University of Leeds and the Universidad Rey Juan Carlos University in Spain. I had previously visited South Africa with college and always wanted to return to discover and understand the variety of landscapes Africa has to offer. My research, undertaken for my dissertation, aimed to quantify the amount of CO₂ produced by the desert soils and to see how much of this was captured by biological soil crusts before escaping to the atmosphere. Uniquely, desert sands are covered in a thin crust of bacteria and fungi, including cyanobacteria. These crusts are known to stabilise the dunes and prevent wind erosion, but they also affect the carbon cycle. As soils are the single largest source of CO₂ to the atmosphere it's important to understand how much they store and release and how they are likely to be affected by different land use and climate changes.

The majority of the research was undertaken at Berrybush Farm near Tsabong, where Jill Thomas has hosted and facilitated the research for over a decade. We also worked at remote sites, far from villages in the SW Kalahari. For my research I set up a series of chambers in order to collect the gas emitted from the sand at different depths. We then used an infra-red gas analyser to determine how much CO₂ was in the gas. By comparing these values from the different depths we were able to determine that the biological crusts were "capturing" between 40 and 50 % of the CO₂ coming from the sands before it could be emitted to the atmosphere. The amount captured was higher at sites which hadn't been grazed compared to heavily grazed sites, demonstrating the importance of looking after the desert biological crusts if we want to reduce soil CO₂ emissions.

Working out in Botswana was very different to that undertaken with Aberystwyth University in New Zealand earlier in the year. A number of differing challenges were to be faced which I had no prior experience of; such as the use of new equipment, working within an intimate group of specialised academics and new language/cultural barriers.

Both prior to travelling to Botswana and throughout the research trip, Dr Andrew Thomas has helped both plan and prepare me for the trip, by developing my academic understanding of the research to be undertaken and developing various scientific skills when in the field. During this research I have been able to develop scientific methods, learn various Setswanan words and greetings, along with understanding various issues academics face when in the field. Throughout my time in Botswana that wasn't involved in collecting data and soil samples I was able to experience true Botswana life through travelling to a game reserve and bush-camping where a number of close encounters were had, including a lion and deadly scorpions. These experiences have focused my mind and now drive me to pursue a career in academia as well as lead me to appreciate wildlife in a whole new understanding.



Considering Conservation

Leigh-Anne Bullough

Last year, I was awarded with an institute travel award of £400 which helped towards the cost of travelling to South Africa for 16 days – this allowed me to have the most enjoyable and valuable experience of my life.

As a geography student, I am always keen to travel to new places and discover other cultures. I have been lucky enough to have travelled a little previously – but South Africa is somewhere that had always appealed to me. My ambition for conservation, coupled with a desire to experience the 'wilds' of the African bush led me to a volunteer trip in Kwa Madwala Private Game Reserve. While in the reserve I was able to get an insight into how the reserves are run and the day to day lives of rangers who escort tourists on safari drives and ensure the smooth running of the reserve as a photographic safari destination.

I chose to spend my time in Africa on a photographic reserve, where when on safari the vehicles would approach animals as close as possible, but never intrude. I was able to get up close to Rhino, Elephant, Impala, Bushbaby, Hippo, Crocodile and many other animals living within the same grounds as I. I was even able to meet and greet the reserve's resident elephant, that lived in a camp used to educate people about the plight of the African elephant. My group and I also partook on night drive safaris where we were able to star gaze in complete darkness at Southern Hemisphere stars.

Anti-poaching walks through the bush were another important part of our work, where we managed to remove over 20 snares that had been set to trap antelope and other animals to feed the illegal bush meat trade. Kwa Madwala Game Reserve actively seeks to conserve as many large mammals in as natural a habitat as possible within a fenced reserve. These animals were fenced, but the size of the reserve meant that they could live as close to fully wild as possible, whilst still being protected. I was also able to visit the world famous Kruger National Park – a large, unfenced national park that spans 3 countries. Here, I finally caught a glimpse of a pride of lions and a herd of Elephant around 30 strong. This was a highlight and a moment I will never forget. We also found plenty of time to relax around the pool.

What surprised me the most though, was that within a mile of the reserve I was volunteering at there was a trophy hunting reserve – a vast fenced area stocked with game that could be legally shot in exchange for money. The larger, rarer and more allusive the animal, the more expensive it was. As I was in Africa, I was able to try and understand this practice by talking to the rangers who worked to protect the animals in the photographic reserve. I talked extensively to several rangers to gain their opinions about trophy hunting and understand how it was carried out.

I became fascinated with the subject that harked back to colonial times of white dominance and exploration in Africa. I was intent on finding out how this had a place in a modern world and it quickly became my dissertation subject. In my research, I have endeavoured to discover how humans have used non-human animals as a commodity throughout history, with a particular focus on trophy hunting in Africa. Humans use animals for medical research, companionship and as targets for 'sport' hunting – our capitalist society uses animals and animal products on a daily basis, my research begs the question – is this use detrimental to the non-human animals we share this planet with on a long term scale. I also aim to assess the validity of trophy hunting as a 'conservation tool' which it is claimed to be by many pro-hunting activists. I intend on collating several sources of information to consider whether utilising non-human animals for our own means is both ethically and economically viable – concentrating on uses of African wildlife and their relations to conservation.

The institute travel award aided me in discovering a topic I am truly passionate about, and hope to continue into postgraduate study, as well as helping me visit a country I had long been intrigued about and wished to visit.



The W J Edwards Award

Bill Edwards (1944 – 2007) was passionately interested in Wales – particularly in community, politics and participation. He was also fascinated by the links between Geography and other disciplines such as Art, History and Literature, as well as the social and physical sciences. As Director of Teaching in Geography and Earth Sciences at Aberystwyth and as Dean of Arts, he made a great contribution to improving the experience of students in Aberystwyth.

Arsenic in the Mountain?

Leanne King, Environmental Earth Science

Parys Mountain, the Bronze Age copper mine which intrigues with its red glow at sunset and its auburn ponds, has always been a site of interest to me. Through my dissertation project I was able to combine this site with my passion for hydrochemistry. The copper mine, which closed in the early 20th Century has been contaminating the local rivers (Afon Goch North and South) with acidic mine drainage – this is one of the most polluting mines in the UK and so has a very detrimental effect on the surrounding environment.



My dad helping to collect the samples on Parys Mountain

I spent two days measuring the acidity of the surface waters both on and around Parys Mountain, whilst collecting over 45 water samples with the help of an enthusiastic field assistant – my dad! We spent our time filtering

water samples on site whilst measuring the pH, Eh, temperature and ORP of each of the fifteen sites studied.

I then analysed these samples in the university laboratory using instruments such as the Ion Chromatographer, ICP-MS, HPLC and AAS and also the technique of cation exchange. I obtained a range of amazing, albeit worrying, results. Concentrations of iron and lead as expected were fairly high, however, the arsenic concentrations of the surface ponds were unexpectedly high. This led me to further research to establish the speciation of arsenic present in the more toxic waters, investigated through the use of combination HPLC-ICP-MS. Fortunately, the arsenic is mainly present in its least toxic form (AsV), although it is still a potentially harmful contaminant, suggesting that the site should be remediated sooner rather than later.

In some ponds on the mountain itself, AsIII is present, although the concentrations are much lower than those of AsV. This suggests that the oxidation potential of these ponds is much lower than sites further away from the mountain, and thus are less likely to contain any form of pond life due to a higher contaminant level.

Over the past century water shortages have become ever more common and so research, such as that I have carried out, is vital in helping to determine the right chemicals to remove varying contaminants from surface waters and identify areas which could potentially provide a water resource in future years, such as the Afon Goch North and the Afon Goch South. However, researchers must be aware of the extent of contamination as a result of acid mine drainage, before a method of remediation can be found.



Filtering the samples at a site connected to the Afon Goch

Living in Manchester, the WJ Edwards Award provided travel costs to and from the site which is based in Anglesey, North Wales. This award has allowed me to pursue my own interests and has

provided me with invaluable experience for both the third year of my Environmental Earth Science Degree, and future career prospects.

Barnacles, Breakwaters and Biodiversity

John Dixon, BSc Geography

Since moving to Aberystwyth for University I have become fascinated with the coastline of Cardigan Bay. Through studying Geography and volunteering with the Cardigan Bay Marine Wildlife Centre in New Quay I have learnt a lot about this environment, so when it came to choosing my dissertation topic, I jumped at the chance to gain a greater understanding of this coastline.

To combine the knowledge I have gained through my degree in Aberystwyth and my love of the Welsh coastline I have decided to look at the ecology of the coast and the problems that face it. Coastal areas around the world are increasingly being threatened by rising sea levels and increased storminess, induced by climate change. It is estimated that by 2025, 75% of the world's population will live within this coastal area, creating greater development and activity. Together, the pressures of climate change and human development have forced authorities to build coastal defences, such as breakwaters, groynes, and seawalls, to protect from flooding and destruction. By doing so, these defences have caused dramatic loss of natural habitats. It is therefore crucial to mitigate against this habitat loss and create ecologically friendly coastal defences. This problem has therefore led me to investigate how to increase the biodiversity of coastal defences, making them more ecologically friendly.



Me collecting data on the Warwick Place breakwater in Tywyn

To collect data for my dissertation I conducted fieldwork in the seaside town of Tywyn, situated on the Cardigan Bay coast in mid-west Wales. The town's coastal front has a history of damaging storm events, which led the Welsh Assembly Government to build several artificial defences along the Tywyn coastline. I focused my fieldwork on the Warwick Place breakwater, built from a combination of flat surface rocks and rocks with man-made grooved surfaces. In order to study the ecology of the structure, I used a quadrat random sampling method to estimate the percentage of different species spanning the entirety of the defence.

Since returning to Aberystwyth I have been analysing my data and found some interesting results. Grooved rocks appear to have a greater species diversity than flat rocks, suggesting they are more ecologically friendly. As the grooved rocks are more 'complex' than the flat ones, this supports the idea that an increased habitat complexity gives greater biodiversity. These findings also suggest a new cost effective way to create an ecologically friendly defence.

By adding to the growing research in this topic I hope to help reduce the environmental degradation of the coastal zone and add to the understanding of a complex coastal ecosystem. I am very grateful to Aberystwyth University for awarding me the WJ Edwards Award. Without it, my fieldwork would not have been possible. I have learned a great deal about the physical environment of Wales by doing this research and by meeting and talking to many local Welsh people in Tywyn and visiting towns along the way, such as Machynlleth and Aberdovey.



Honouring Bill's love of Wales and his commitment to supporting the academic and personal development of our students, this award is designed to support dissertation or Joint Honours project work which contributes to our understanding of any aspect of the physical and/or human environment of Wales.

River Ystwyth

Penny Clarke, BSc Geography

Brooker and Morris (1976) conducted a study investigating the distribution and abundance of macroinvertebrate communities in the River Ystwyth. My dissertation aimed to complete a 27 year comparison to the above study providing a temporal basis for analysis. The objective of my study was to determine if metal contamination is still affecting the Ystwyth. Mining is a serious environmental problem within historical mining catchments, and the Ystwyth's longstanding problems are well documented, yet the relationship between the environmental variable and response of the ecosystem is poorly understood. During data collection I measured many variables, as to eliminate all but that of pollution, to attempt to correlate such a relationship.

Since disuse in the 20th century, the Frongoch mine has discharged 20 tonnes of zinc into the River Ystwyth, with further input from the Cwmystwyth mine. Many studies into the pollution of this catchment have been completed in the past, with recent work by the Environment Agency Wales, investing in a phased approach to reduce such pollution. Improvements in macroinvertebrate communities would be expected, however, recent concerns have arisen regarding the possible leaching of heavy metals during the 2012 floods into the Ystwyth. With such events increasing in frequency with climate change, it is imperative to determine the effects of flooding.

There is currently no national body responsible for metal mine pollution control and remediation, thus the results from this study may support and prompt action to protect the rivers from flood pollution or, otherwise, determine the current riverine quality.

Many thanks to all involved in the WJ Edwards award; the feasibility of such a project would not have been possible without such funding.



Borth's Changing Shoreline

Gareth Vaughan Williams, Physical Geography

The proximity of Borth inhabitants to the sea, the great dune system of Ynyslas and the unique ecosystem of Borth Bog make the coastline a few miles north of Aberystwyth highly important in terms of its protection from future erosion and flooding. My dissertation investigates the impacts of the newly-constructed artificial coastal defence structure at Borth upon this magnificent coastline.

The artificial offshore structure at South Borth



The artificial structure emplaced in the sea at South Borth was constructed in 2012 as many properties along the coastline are highly vulnerable to winter storms. The aim of this £13 million project was to dissipate wave energy; allowing accretion of sediment in the lee of this structure. As the scheme by Ceredigion County Council is still in its infancy, the knowledge of its wider impacts is limited and there is a need to understand the present local coastal dynamics.

The WJ Edwards award funded my travel costs to and from Borth in order to conduct my research over a 6 month period. Whilst at Borth, I studied the shoreline's beach profiles, sedimentology and mineralogy to understand the effects of the structure during those 6 months. Primary results reveal that large accretion of sediment has occurred in the lee of the coastal defence structure, whilst erosion was observed on the surrounding coastline. I'm looking forward to conducting further analysis and statistical analysis on my samples which will, hopefully, reveal more about Borth's changing shoreline.



The alteration of the beach, evident from a photograph of the sand extrusion at South Borth. A sand bar extrudes to the sea in the lee of the offshore structure

Awards and Societies

Every year there are a range of awards to fund travelling, learning and for our students to experience life abroad as well as in the UK. With these and the number of societies and events within Geography and Earth Sciences and across Aberystwyth University, there are plenty of opportunities to make new friends and develop valuable skills.

Photographic Competition 2013

Discover, Engage, Excite, Inspire

This is what we, as a department, believe Geography and Earth Sciences are all about. This year for the Institute photographic competition, we wanted our students to show, and tell us, what these things mean to them in terms of Geography and Earth Science. There were four categories:

Discover – Finding that something different, something that someone else just may never have found, or an image that expresses the joys of discovery.

Engage – Show people engaging directly with Geography and Earth Sciences, or images that will engage people.

Excite – Exciting images that show that Geography and Earth Sciences isn't just about colouring in!

Inspire – Images that inspire you in your study, and you believe would inspire others to study Geography and Earth Sciences.

This year again we included not only the fieldtrips students go on throughout their studies (New Zealand – North and South, Crete, New York, Ireland - all trips, North Wales and Cornwall), but images they may have taken this year in Aberystwyth and during the summer vacation. We knew so many of our students undertook amazing adventures during 2013 that we wanted to see and hear about them.

Prizes were awarded as follows:

First Prize for Best Overall Photograph - £50 Amazon Voucher

First Prize for each listed category - £30 Amazon Voucher

Maximum of three photographs, Highly Commended - £20 Amazon Voucher

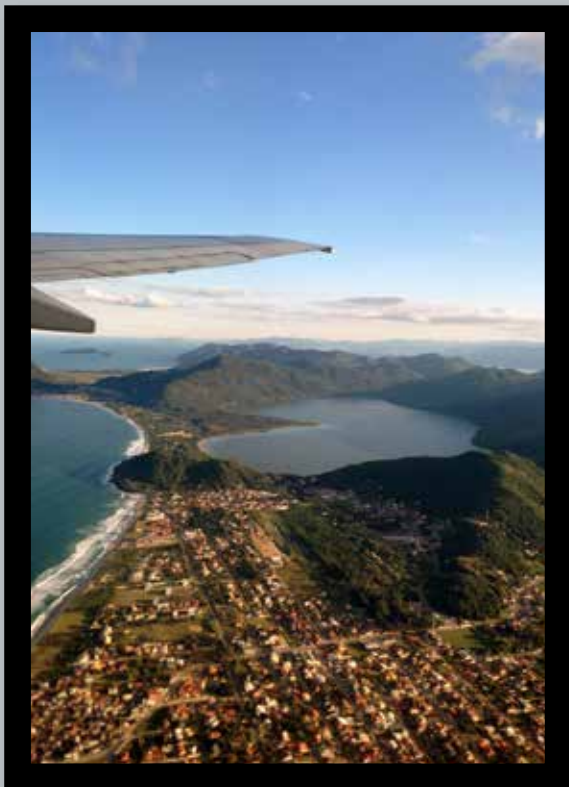


Nicholas Simmons - Overall Winner

Photograph location: Svalbard

This image inspires geography because it captures many typically geographical features in one photo, the snow-capped mountain, the meandering river and the sunlight reflecting off the river just makes it a perfect photo to inspire geography.

Sophie Tumber - Discover Winner.
Photograph location: Brazil



Laura Read - Engage Winner.
Photograph location: North Beach, Aberystwyth



Helen Morgan - Excite Winner.
Photograph location: Kalahari Desert, Botswana



Sophie Tumber - Inspire Winner.
Photograph location: Central Park, New York



Zoe McWilliams - Discover, Highly Commended.
Photograph location: Lampeter, Mid Wales



Nicholas Simmons - Discover, Highly Commended.
Photograph location: Mt Cook, New Zealand



Aberystwyth GeogSoc So Far!



Mark Sutton - President

For those of you who don't know what Geogsoc is, we are Aberystwyth's very own Geography Society. We run a range of events including socials around Aberystwyth, trips to geographically relevant places around the country and educational events to help students with projects and assignments.

This year has been crazy for us at Geogsoc, and we are only 2 months in! I have seen Geogsoc grow from a small society to one of the biggest within the university in the space of 2 years! Being president of such a society has been an amazing experience for me and I am thrilled to be part of such an active society within the university.

In these two short months, lots of events have taken place within the society. Every week we meet up on Tuesdays to do a pub crawl around town. At our first social of the year, we had over 100 people out! Every night has been unforgettable, with fantastic themes to make everyone dress up and have a great night out! We did a trip up constitution hill on bonfire night to see Aberystwyth at its best and also been to see films at the commodore, including the latest Avengers film, Thor: The Dark World.

Halfway through last year, some members of Geogsoc organised weekly football through the sports centre as an unofficial kick around. This year, we have made it more official and cemented it into a weekly event every Wednesday from 2pm til 3pm. This has brought a lot of the society members together in an informal football setting. All abilities are welcome so if you fancy giving it a go, come along!

We have also organised trips, with a Christmas shopping trip and a visit to Borth Animalarium which had a number of us pining over the meerkats and lemurs (I'll confess I was one of those people). Educational events were also held to help first years with their big main project before Christmas and to help second and third years meet up to discuss revision methods and share notes. We don't want people to feel left out within the society and we all help each other when it comes to our education.

We did several events within the department as well to improve relations with staff. A number of us helped on the C3W and department's National Science and Engineering Week stands. We also helped out at the University Open Days this year at the request of Dr Andrew Thomas. This was thoroughly enjoyable and it gave us a chance to reminisce to those scary days of when we were making our university choices. We are in the process of organising a Staff vs. Students football match to bring a bit of competition to the department amongst the staff and students (hopefully it won't be too much competition for some!).

In these few short months we have accomplished a lot, with 140 paying members and weekly events which make our university experience once in a lifetime, thanks to geography. We are not even half way through this year and I have full confidence that this year will be Geogsoc's best ever! **If you want to know more about us, contact us at SCTY02@ABER.AC.UK. We will be happy to answer any questions to have about the society. Equally, come along to our socials on a Tuesday to meet your fellow course mates and have some unforgettable fun in Aberystwyth. See you all soon!**



Travel Awards

Every year the Department of Geography and Earth Sciences offers up to 13 travel awards worth up to £400 each to students looking to explore the world. Here are some of the stories from those who made it back!

“My Indian adventure was a life changing experience, and I would like to thank Aberystwyth University and the Gareth Thomas travel award for making it all possible.”

Aimee Hutchinson



Abigail Russon – 3rd Year BSc Geography, went to Thailand

Over the summer I spent 4 weeks in Thailand, learning about sustainable and organic farming techniques within the rural areas of Chang Dao. During this time, I was taught about wildlife conservation, as well as working on the farm itself including both planting and building work. I also spent some time teaching English in a local school.

Academically, I got to experience first hand the issues faced within organic and sustainable farming techniques in this rural area, and how the climate in this country greatly determines the output of produce for these farmers. Personally, I gained a sense of achievement in knowing that the foods we planted will provide income for that farmer. I also immersed myself within this new culture, to understand their beliefs and their way of life, and feel I gained a better understanding of the country as a whole as a result of this experience.



Jess Reynolds – 3rd Year BA Human Geography, worked in Uganda

I was recently granted a Travel Award, which allowed me to fulfill my passion for travelling and charity work in Uganda. I spent two weeks at the Kyoga Church of Uganda Primary School in the Mukono district. I was able to get involved with all school activities including teaching English as well as taking the children for drama games and playing sports.

Learning about different cultures absolutely fascinated me. I would recommend that everyone travel as much as possible because the experience is invaluable.

and in an environmentally responsible way was such a learning curve. Living basically teaches you the little we really need to live and enables you to challenge the way we live back home, at least allowing yourself to make, if only small, promises to change. Thank you again to the Gareth Thomas Travel Award!



Sophie Ellerker – 3rd Year BA Human Geography, worked with autistic children in Vietnam

I went to Hanoi, Vietnam for 3 weeks to volunteer in the Morning Star Centre. This is a day centre dedicated to educating children aged between 2 and 11 who suffer from mental illness. The centre uses a number of special needs teachers, psychologists and other medical professionals to detect the early signs of mental disability. The centre rehabilitates many young children but since they need extra attention the 100 staff are simply not enough and volunteers from around the globe are welcomed to help with basic tasks such as feeding the children to mopping the floor.

Unfortunately due to the severity of autism, it was difficult to get the children to understand how to play with toys. So one of the things I helped with was trying to keep them interested in playing.

One of the great things about Vietnam was being able to immerse myself in a very different culture. The way of life is very different to here in the UK. During one weekend trip we rented a room in a family home sleeping on the floor under mosquito nets and eating traditional Vietnamese cuisine (rice, noodles and vegetables with chopsticks).

Overall this experience benefitted me in many ways. I was able to immerse myself in a culture very different to my own by living in a basic way, travelling to sights of cultural interest and experiencing local cuisine. I was also able to understand life in a third world country which was of particular interest to me as international development, poverty and aid is a possible future path I am considering taking.



Helen Duley – 2nd Year BA Human Geography, travelled through India

The first 3 weeks I spent living and volunteering at Sadhana Forest – a volunteer community involved in ecological revival and sustainable living work. The work in the young forest included water conservation measures that involved digging holes and building bunds to trap and hold surface water.

The next 5 weeks were dedicated to travel in which time we managed to cover pretty much the length of India by working our way up the east coast. Covering Tamil Nadu and Kerala visiting Fort Cochin, Kollam, Varkala. From here we headed north to Goa, Mumbai and then into Rajasthan visiting Udaipur, Pushkar and Jaipur before heading further north to Amritsar in Punjab where we stayed within the Sikh Golden Temple. Next was McLeodGanj, Dharamsala in the foothills of the Himalayas and back down to Agra.

This trip has opened my eyes in so many ways both academically and personally, many themes in human geography were made more real through witnessing them first hand – overpopulation, economic inequality, poverty, displacement were a constant presence. Furthermore living in a sustainable community



Stephen Williams - 2nd Year BA Human Geography, visited Disneyland Theme Park, Los Angeles

I applied for the Gareth Thomas Travel Award after having decided to do my third year dissertation on the representation of the future that Walt Disney employed in his Disneyland theme park in Los Angeles. LA was the original park, and the only one to have had Walt's full design input. My aim was to conduct visual and textual analyses of the park and, if I could, to have informal discussions with Cast Members and guides who worked for Disneyland.

I spent the first day getting used to the heat in California in Universal, and of course doing all of the rides and shows! The next five days were spent in Disneyland and Disney's California Adventure, where the crux of my research was taking place. After getting the hang of the park, I went into Tomorrowland and spent hours walking around, visiting attractions, photographing every inch of the park and talking to cast members and tour guides who specialised in the park's history and future. Going and doing the fieldwork there was a fantastic experience – Disneyland has been written about and photographed many times in the past but experiencing the park, the buzz about it, the scale of the buildings and design could not be replicated on paper.

Academically, I got a fantastic basing for my dissertation that I could not have achieved hadn't I gone there and done it. Talking to staff and visitors gave a real, first hand experience, whilst the visual analysis being in the park allowed could not be replicated outside of Disneyland.



Aimee Hutchinson - 2nd Year BA Human Geography, volunteered in India

During the summer of 2013 I spent 2 weeks in Faridabad, nr New Delhi in India. I was on a volunteer programme with Plan My Gap Year (PMGY) working on a women empowerment scheme and teaching English and Maths in a slum school. Whilst in Faridabad I stayed with an extremely welcoming host family.

While in India, the stark contrast between those who 'have' and those who don't was constantly evident. Even though 29.8% of the population live in poverty (World Bank, 2010), working in the slum school was a pleasure. Despite the poor standard of the school and 40degree heat, all children were always eager to learn. However, the language barrier meant that teaching was not as straight forward as it should have been- all the children spoke fluent Hindi, a language I had no previous knowledge of. Because of this, my communication skills improved dramatically.

My Indian adventure was a life changing experience, and I would like to thank Aberystwyth University and the Gareth Thomas travel award for making it all possible.



Robert Hayden - 2nd Year Environmental Earth Science, explored Ireland

Having been awarded a travel bursary, I decided to use the money to undertake a 2 week excursion to East Ireland. The main aim of the trip was to collect samples for my dissertation, which is based on the remediation sites of the Avoca copper mines. On top of this main aim, it would have been a shame if the beautiful countryside of the Wicklow Mountains was unexplored, so I took along two friends and went on to navigate some of the mountains.

Once my sample work was out the way, we spent our time exploring the Wicklow Mountains. The best was Lugnaquilla which is the 13th highest peak in Ireland. The ascents of the mountains were simple, with walking routes plotted on each one, which saved getting lost in the sometimes foggy conditions.

This travel bursary gave me a fantastic opportunity which I would definitely recommend to anyone else thinking of travelling to another country.



Alyssa Paterson Murphy - 2nd year BA Human Geography with Education, immersed herself in the US 'deep south'

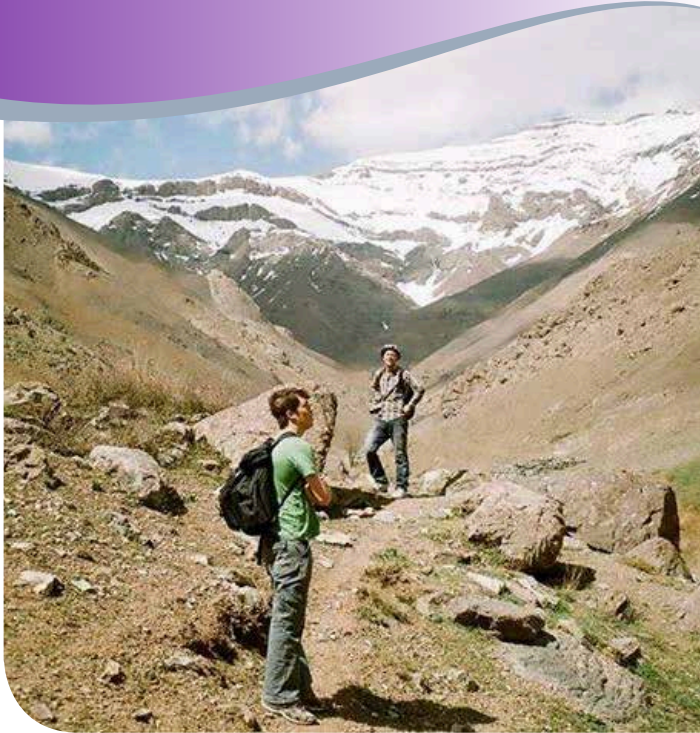
This summer for seven weeks I was based in Mississippi working in an underprivileged camp for children from the feeder states; Alabama, Louisiana and Mississippi. The majority of children who attend the camp come from deprived backgrounds and some coming from homes and families which were directly impacted by the 2005 Hurricane Katrina, which has been described as the costliest natural disaster in US history.

While in New Orleans I partook on a Hurricane Katrina bus tour. On the tour we were taken around the city with a tour guide narrating her experience of the day and pointing out areas which had been affected and in some cases destroyed. It was really interesting to see the ruins in person as it brought textbook and media portrayal to reality allowing my insight into the disaster to expand and really appreciate the impact of the disaster but also allowed me to appreciate the work, such as the Pitt Project, led by Hollywood actor, Brad Pitt, being done to regenerate the area.

I would like to thank DGES for granting me the Gareth Thomas Travel Scholarship as overall I feel the travel award has allowed me to have the summer of a lifetime. It has given me the opportunity to experience such an interesting and fascinating culture filled with so much history and importance and I feel that many of the sights and things I have seen, felt and learnt, including, seeing the different wildlife to interacting with locals and trying the cuisine have enhanced my knowledge of the 'Deep South' of America and I can definitely say I now have a much wider and more accurate representation of what the South is like which is essential for a Geographer.

Postgraduate News

From postgraduate study to graduate experiences, once you have your undergraduate degree in Geography and Earth Sciences the world is your oyster!



Sam Fensterheim, BA Human Geography

It is funny the directions life can take you in. After completing my BA in Human Geography not even one week had gone by when I hopped on my bike in the direction of New Zealand. During the entire two and half months that it took me to cover the 6000-mile-route between England and what ended up being my final destination, Iran, I stayed only with people whom I didn't know. I either used Couchsurfing.org, a hospitality website with which a person can stay for free in others' homes, or tried my luck with villagers, showing them a letter describing my life story and desire for a place to pitch my tent which my friends had helped me translate.

I finally made it to Iran and fell in love with the country. Straight away I decided to stay and teach English, but with the tight visa restrictions was unable to get a work visa. Instead I enrolled on a Persian course and as time ebbed by found myself learning a language, something that I had never envisaged possible! A year later, with itchy feet and a newly kindled passion for language I decided to pay a visit to Afghanistan. I wanted to be an interpreter, but found that the majority of jobs were military orientated and that the country was a little restricted for my liking.

I gradually made my way home passing through Tajikistan, Russia and Latvia before boarding a 2-day bus that brought me back to England. Once again, itchy feet got the better of me and I jumped on a plane for New Zealand. I spent four months there before applying for a teaching job in Korea. Application accepted and in dire need of money I began teaching in Korea. I endured a year and a half of grueling hours, working overtime and giving private classes. I learnt Spanish at the same time, taught by a Colombian guy who lived in my place for free on the condition that he spoke Spanish with me. Enough money in the bank I said goodbye to Korea and after a jaunt through Europe and quick trip back home I flew to Colombia.

That is where I am now. I continue studying Persian for three hours every morning and dedicate the rest of my time to Spanish. In a few short months I hope to start a course in linguistics in a Colombian university with the aim of becoming an interpreter between the three languages.

Graduate Biogs



Jennie Orrell, BSc Geography

During the summer before my final year studying Geography at Aberystwyth I took part in an internship in my hometown with the environmental charity, Peterborough Environment City Trust. This enabled me to gain essential skills in the workplace, the data for my final year dissertation project and make lots of connections in my hometown, which I didn't think would help me as much as they have. When I graduated in July I headed back to Peterborough and had no idea what I was going to do. All I knew was that I wanted to do something in the environmental sector and hopefully to do with sustainability. After unsuccessfully applying for several opportunities one of the contacts I made during the internship sent me the details for funding that was available for a masters course. I applied and was successful, meaning that I received a fully funded place on a masters course in sustainability that I started last month. This is a distance learning course (with residentials) through Anglia Ruskin University and in partnership with the Eden Project. Not long into my course, Peterborough Environment City Trust approached me and asked me to manage a project for them. This means that I am getting paid for two days a week in the environmental sector and also shows that my voluntary work was truly worthwhile and beneficial. As well as this, I am also volunteering one day a week for the Climate Change Team at the local council, which may lead to further employment. It is a great feeling being able to have all of the things that I am currently doing related to what I am genuinely interested in and it is even nicer knowing that I don't have to pick up cleaning jobs to keep me going. Although I have been lucky in the sense that everything has fallen into place, the fact that I volunteered initially has underpinned everything I am currently doing, so this is the one thing that I would definitely recommend doing during your time at university.



Computer image of proposed tidal lagoon at Swansea Bay



Owain (left) exchanging presents with a colleague at the Valorem in France

Owain Morris, BSc Geography

After graduating from Aberystwyth in 2012, I was successful in getting a place on the Leonardo Da Vinci scheme, an EU and HEFCW funded scheme for Welsh graduates to study a language and undertake a work experience placement in an European country. I went to live in Bordeaux in France for fourteen weeks. This included four weeks of intensive French lessons followed by a ten week work placement. I worked for a renewable energy company called Valorem where I provided technical support assisting with the translation of documents, reports and the company's website in addition to helping with English communication. I highly recommend this scheme to anyone who isn't sure on exactly what to do after graduating.

Fortunately, by the time I returned home to Swansea, I managed to get a job as a Stakeholder Coordinator at Tidal Lagoon Swansea Bay working on a significant renewable energy project which is closely linked to my undergraduate dissertation. While the project is currently an ongoing proposal, if successful, the lagoon will be the first of its kind in the world. As well as producing clean energy, the lagoon will also provide other benefits such as job creation and sporting, education and tourism opportunities.



Paul Edwards, BA Human Geography

After graduating I got a job in Finance at General Electric's Aviation division and beat other candidates purely because I was a graduate. I moved to Berkshire immediately after graduation because my girlfriend's from the area, did a few temp jobs then found my feet at IHS whilst reading my MA in History of Art at Reading part-time. My thesis looked at the Canadian artist called Bill Reid and how he came to represent the identity of British Columbia as a province post-WWII...it was very 'place-based' and I referenced a lot of geographers which was a shock for my very prim and proper art history lecturers!!

I now report to the Director of EMEA Procurement and provide the team and colleagues with cost analysis reports and other metrics. I liaise with suppliers to negotiate contracts and agreements and work with colleagues to save the company money. IHS "advances decisions that advance the world" and provide insight and analysis in four key areas: Aerospace, Defense & Maritime, Energy, Automotive and Electronics & Media.

Knowing the security threat-level of an oil pipeline in Oman at a given time or knowing how much the components of the new iPhone cost are but two basic facts which we'll know and from which will be able to assist organisations such as Shell or NATO with their business decisions.

Sam in Svalbard: an alternative perspective

Sam Saville is a PhD student, her project, 'Polarising nature-culture: an examination of value in Svalbard' is funded by the ESRC and DGES.



Longyearbyen main street (and me)



The Northern most Lenin bust looking out over the square in Pyramiden and towards Nordenskiöld Glacier



Recovered scrap metal and parts await shipping back to mainland Russia at Pyramiden's port

My research investigates the different ways in which value is produced, circulated and reproduced in Svalbard. I am particularly interested in how value systems relate to and are part of human relationships with 'nature' in this context. Svalbard has a history of natural resource exploitation; from whaling in the 16th century to present day coal mining. On the other hand, the governing state of Norway aims to preserve Svalbard as the last European Wilderness and has applied for UNESCO world heritage status. Thousands of tourists visit each year to experience the arctic weather and light conditions, explore the cultural artefacts, spot exotic wildlife and glaciers while they still can. Whilst hundreds of scientific researchers and students work here to investigate various glaciological, ecological and technological aspects of this icy realm, there is plenty here to interest a human geographer!

This summer I made my first field trip to Svalbard. After reading and talking about this Arctic Archipelago for so long, it was great to finally set foot there! For this short pilot visit I spent 10 days in the main Norwegian town of Longyearbyen getting to know people, conducting interviews and scoping out plans for my main field work trip next year. It was fascinating to talk to the wide variety of people living in this small town; although there are only 2000 people living here, there are people gathered from around 40 different nations for all combinations of reasons – political, economic... or because they love the barren but beautiful landscapes and wildlife here. The snow-capped scenery, 24 hour daylight and model polar bears around every corner certainly had their charms.

I was also lucky enough to escape the confines of town and join an interdisciplinary field trip with The Royal Institute of Technology Stockholm and the University of Illinois for a week camping in Petunia Bay, a few kilometres from the abandoned Russian mining town of Pyramiden. It was fantastic to explore the rocky terrain, get up close to a glacier and even spot some real live polar bears (we had plenty of rifles and some husky dogs with us just in case). If Longyearbyen is impressive for its modern facilities and semblance of normality, Pyramiden is equally interesting for its insights into a very different and not-so-distant soviet past. I am now looking forward to returning next spring for a more in-depth investigation into this unique and intriguing Arctic land.



Longyearbyen from Adventfjord with a cruise ship at port.

Sunny Spells with Steffan!

Steffan Griffiths, Postgraduate Student

Currently a weather presenter for S4C and a part-time MSc Glaciology student at DGES Aberystwyth University, my time studying for a BSc Physical geography degree at Aberystwyth has significantly contributed in ultimately being employed.

Personally, being from Wales and always wanting to study geography, I looked no further than Aberystwyth as the place to be due to its high-standard teaching, good reputation, vast experience of the teaching staff, and the opportunities on offer to each student. From the range of modules – one of which led to my current employment – to exquisite field trips, the experience and confidence gained from studying at Aberystwyth is priceless.

During my second year, I undertook the work experience module where I went to the weather department at S4C for a week. Here, I thoroughly enjoyed learning about weather models and seeing the process from forecasting through to presenting. As a result of this crucial module and keeping in contact through various means, I was fortunate enough to start a new job as a weather accuracy analyst for S4C weather in June 2013 before graduating in July 2013.

Four months on, I am now a weather presenter for S4C, and am very grateful to DGES and several other people, as without their help, expertise and the opportunities given to me, my current situation would not have been possible.

However, I could not leave Aberystwyth quite so fast and so I am also a part-time student with the centre for Glaciology at Aberystwyth undertaking the MSc Glaciology programme. Another great programme introducing a whole new set of ideas, experiences and challenges.

And so, to anyone embarking on the great university journey, my advice would be to make the most of your time, work hard as you will be rewarded, and take every opportunity available – you never know what will come from it!

S4/C

Haber Clic Amcyswrt Rhyngwlad Cw Sersit Adswart Cerbynnau Chwaraeon Drama Theatr

English

Tywydd

Hafn Tywydd
Fy Nhywydd
Balefn ar Rhyngwlad
Diweddaryd

Rhyngwlad 5 Newnod
Afordrol

Cyflwynwyr
Tywydd yn eich poced

Twitter
Facebook
Flickr

Blog Fflemio
Blog Y Cyflwynwyr
Colledion y Gwylwyr

Traillig a Theatr
Rhybudd Llifogydd
Llên Natur

Diweddaryd: Dydd Iau 12fed 13:30

Dydd Sadwrn 09:00

Parhau'n fwyn

DYDD GWENER
Glaw cymedrol a chysen yn ystod y bore yn troi i gawoddydd erbyn y prynhawn. Ysbeidau heulog tua'r gorllewin gan gyrraedd 12°C ar ei orau.

DYDD SADWRN
Sych ar y cylan yn ystod y bore, ond glaw yn cyrraedd ac yn ymlleu erbyn hwyr prynhawn.

DYDD SUL
Bore sefydlog gyda chlybodaau traf er mwy o law yn hwyrach. 9-11°C.

Rhyngwlad gan Steffan Griffiths

DGES launches a new MSc in Environmental Change, Impact and Adaptation

The MSc in Environmental Change, Impact and Adaptation is a new, bespoke, multi-disciplinary programme that addresses the challenges that climatic and other environmental changes pose to society. It draws on world-leading expertise in the department in both the natural and social sciences to cover a range of topics including: desertification; terrestrial carbon cycles; flooding; risk management; records of palaeo-environmental change; environmental hazards; policy response; sea-level rise and the impacts of warming and changing rainfall on ecosystem processes.

The course begins with an overseas fieldtrip in week one where students will learn to devise their own field-based experiments to investigate environmental change. Training will also be given in a range of advanced techniques such as quantification of CO₂ emissions from soils and interpretation of the evidence for past environmental changes in the landscape. There are no written exams, instead we use a variety of alternative assessment methods including short-film making, white papers, tender reports, computing practicals, field-based experiments, reviews and essays.

In devising the programme, particular emphasis has been placed on developing skills for employability and the programme will form a solid basis for future careers in environmental management or consultancy, development, disaster relief, risk management as well as future doctoral research. The first intake will be in September 2014.

For more information, including on the bursaries available to help cover fees, contact Dr Andrew Thomas ant23@aber.ac.uk or look for details on the DGES/Aberystwyth University website.



Staff Research

Geography and Earth Science staff like to get out of the lecture theatre and lab and conduct their own cutting edge research in the field. Here you can see just some of the cutting edge research going on in Aberystwyth – and also meet our very own television star!

In 2010 the world almost ground to a halt whilst an unpronounceable volcano erupted in Iceland placing fine volcanic ash into the atmosphere. This ash is glassy, heavy and chokes jet plane engines, easily the most expensive part of an aircraft. In 1982, a British Airlines Boeing 747 lost all four engines flying through the volcanic plume of Mt. Galunggung in Indonesia falling over 7 kilometres before restarting the engines. Shortly after, in 1989, during the eruption of Mt. Redoubt in Alaska, another 747 also had full engine failure, restarting them only minutes before colliding with mountains, and costing US\$80 million in damage to the aircraft; the second costliest volcanic eruption after Mt. St. Helens in 1980. Hence adopting a precautionary approach of not flying if there is volcanic ash detectable seemed a fairly sensible approach.

However, it was (and still is most likely) not known what concentration of ash causes engine failure, nor how to measure the precise concentration of ash over different heights in real time. It was a tough time for the UK Met Office who worked tirelessly to resolve the situation in 2010. After nearly six days of complete airspace closure following renewed explosive activity from Iceland's Eyjafjallajökull volcano, UK air space was finally reopened on 20 April 2010. As 'routine' conditions returned, questions were asked about whether the ban on flying had been necessary or had lasted too long, and whether changes in the UK flying regulations were justified? The crisis also demonstrated how interconnected and globalized our lives had become during this brief pause in normality. I was curious to learn more and to address these questions, along with understand the impact this eruption had in Iceland too. So during my sabbatical I took off to explore this issue in both the UK and Iceland.

Standing in front of Eyjafjallajökull was a phenomenal experience, with Katla to its side, and surrounded by other numerous active volcanoes, including that of Heimaey and Surtsey off the coast. Iceland provides a fantastic and direct connection to the raw power of the earth. Volcanoes erupt every 4-5 years here, but don't be fooled by the beautiful pictures of lava flows, or even of ash clouds, one of the world's greatest killer volcanoes resides here, Lakagígar, or Laki for short. Professor John Grattan of our very own DGES was one of the first people to realise the scale of devastation of this volcano. Not only did it erupt an estimated 14 km³ of basalt lava (which I drove over for more than an hour) but vast quantities of poisonous hydrofluoric acid and sulphur dioxide compounds that killed

Kicking Ash in Iceland

Carina Fearnley

All photos by Carina Fearnley



The lava fields stretch on, and on – taken near Kirkjubæjarklaustur



Eyjafjallajökull volcano: 2010 and 2013



Katla Volcano lies under the Myrdalsjökull Glacier



Beach at Reynisdrangar with black sands and basalt sea stacks

over 50% of Iceland's livestock population, leading to a famine that killed nearly 25% of the island's human population. This also led to crop failures in Europe and across North America, and John estimates Laki's killer cloud took the lives of 23,000 British men and women, making it the greatest natural disaster in modern British history. Whilst it is a matter of time before such an event occurs again, this time I was interested in ash.

Visiting the towns of Hvolsvöllur and Kirkjubæjarklaustur it became clear that the ash was not just a surprise to the aviation sector of Europe (although really it was not – scientists and Icelandic air traffic control had been warning about this for years) it also took the locals by surprise. The onslaught of the six-week eruption of Eyjafjallajökull placed huge challenges on the farmers most affected. Colour was removed from the landscape as it became choked in grey, and every day was a constant battle to keep the farms and infrastructure functioning. The Grímsvötn eruption of 2011 was only 5 days in total, releasing more ash in its first 24 hours than the entire Eyjafjallajökull eruption. The people who were caught out by the ash described that they could not see as far as their hand. They were completely blind, and deaf; the ash absorbs all the sound.

Whilst there were no deaths from the ash, it is clear it had a significant economic and psychological effect on the local people. I watched a fantastic film titled 'Ash' directed by Herbert Sveinbjörnsson whilst enjoying the traditional Icelandic delight of a hot dog. The film traces the fate of three families whose fortunes were changed for better and worse over three years, far from the monetary newsworthy story we experienced here in the UK. Cleaning 400 tonnes of ash from one farm is never going to be easy.

Whilst my research aims to understand and evaluate the early warning system used during the Eyjafjallajökull ash crisis, which is now being globally standardised by the International Civil Aviation Organisation (ICAO), it is clear that Iceland presents many threats, not only to the UK, but also the World. However, it also provides the rare opportunity to see and experience some of nature's greatest forces. Of all the people I interviewed, including some of those most affected by these eruptions, all were

in awe of the eruptions. These volcanoes and their interactions with glaciers (often resulting in fine ash) shape the landscape in a dramatic and pretty unusual way, making Iceland a truly geological treasure that is ever-changing. If you have not been, I would highly recommend it.

Patagonian Footsteps – Hywel Griffiths and Stephen Tooth

Hywel Griffiths and Stephen Tooth have been awarded a British Academy grant to research adaptations to hydrological extremes in Patagonia. The project 'Remembering a hydrographic society: flooding, drought, adaptation and culture in the Welsh colony of Patagonia, Argentina' will examine records of hydrological extremes in the writings (letters, diaries, poems) of the early Welsh settlers in Patagonia and their descendants. Hywel and Stephen will also interview members of the current Welsh speaking population in Patagonia to examine their perceptions of flooding and drought, the role of rivers and water in the region's history, and whether memories of floods and drought that have been passed down from generation to generation influence contemporary attitudes towards the environment. This project is opportune for two reasons: i) 2015 will be the 150th anniversary of the landing of the first colonists on the arid shores of Patagonia (1865), and provides a catalyst for re-examining this remarkable historical development; ii) in view of contemporary concern over behavioural and cultural adaptations to climate change, the experiences of the early Welsh settlers in successfully adapting to the alien Patagonian environment may provide some valuable perspectives.



The 'Operation Iceberg' experience:

an interview with
Dr Alun Hubbard

What was Operation Iceberg all about?

It was a BBC initiative filmed in summer 2012 in Greenland to do a "fly on the wall/shot from the hip" reality style programme documenting how big icebergs dramatically calve off the front of immense glaciers and how low scientists are willing to go to get themselves on TV.



Why?

Good question - because it's there? Because the BBC need to keep doing new stuff to attract ratings? Because I just don't know how to say no?

What was the best thing about filming for Operation Iceberg?

That the BBC paid (& insured!) myself, boat and crew to do some very exciting, cutting-edge science in and around the calving face of Store Glacier during the hottest summer on record when the ice-sheet was literally falling apart around us.

What was the most difficult/scary/worst thing about filming for Operation Iceberg?

Working with a big TV team - not any individuals - just that there were 28 of these media luvvies running around one of my favourite/chilled places on the planet... it's kind of heart-breaking but thankfully doesn't last for too long.





What was the film crew like?

Like any film crew... any big team... the best of the best and the worst of the worst.... some amazing people - Doug Allen, Chris Packham, the series producer - Andrew Thompson... incredibly talented and dedicated people who have infinite patience, sensitivity and respect for the natural environment, how to work in it and get the shot... and then there were the others. That's not exactly fair - I liked them all - they are all very good at their respective jobs - just that I didn't see the point in them all being there based at that camp scrabbling for a slice of the action. Small is beautiful and Operation Iceberg was just a tad OTT. They'd have bagged just as much great footage with half the crew... it was the glacier and the setting that was the star of the show... people tend to forget that when they're there - but you couldn't really go wrong given the amazing conditions we were fortunate enough to enjoy.

Have you been to Greenland before?

I have... much to my embarrassment - in the last 6 years I've probably spent a third of my time there... which is a pretty sad statement on my domestic life and summer holidays really.

Have you been asked for your autograph following your recent TV appearances?

Ummm.... thankfully not - one hairy glaciologist tends to look much like any other... I model my look on my guru, Prof Glasser... I know he's a bit of a hit with the ladies.

Having said that, I did receive some genuine hate email (regarding climate change) and also some rather forward emails asking me out on a date. It's a funny old world.

Would you do it again?

Operation Iceberg was a pretty successful documentary, which has now won a bunch of awards including Jackson Hole Film Festival 'Best Doco'... I guess in a couple years that's two award-winning BBC documentaries featuring lots of Greenland and Aber Uni that have come off - which is quite cool but I'm not sure it's wise to keep on doing it - I certainly don't go courting it. I did these programmes because I felt it was part of the outreach package for our NERC funded projects and in so far as they achieved that - then they were great. But when you get media people involved, it really is a pact with the devil & if you are not in complete control of what you're doing - they definitely take over and then it can go very pear shaped indeed. I think the secret of why Gambo - the boat and the Aber crew and sequences - come over so well in both 'Operation Iceberg' and 'Frozen Planet' - was that I made it very clear they filmed once & once only... no second takes, no contrived situations. Our work/reactions were all spontaneous, not put on - I'm no actor - hence when you are trying to do something stressful (like steer a boat in thick pack-ice or likewise, recover/deploy an expensive scientific instrument under difficult conditions) with a camera in your face - you tend to just say it exactly as it is - warts and all. I don't like being patronised by TV presenters and believe an audience can sniff out a contrived or set-up situation a mile off... hence, on the boat and with our work - the film crew got just the one take - with the action as it unfolded and then it was done... that way they did get real jeopardy and yes, at times we looked pretty wired but that's how it was and that way we could all get home earlier and much much happier... still, it was Store Glacier and Greenland that really performed in both shows. I feel humbled and pretty chuffed to have the privilege of working there.

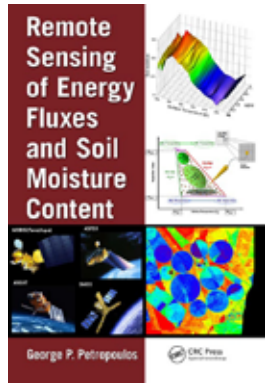


'Selfie' with Chris Packham

Departmental News

As one of the largest Geography departments in the UK we have plenty of news to share, and here are just a few selected highlights to give you a flavour for Aberystwyth.

On the Bookshelf:



Remote Sensing of Energy Fluxes & Soil Moisture Content

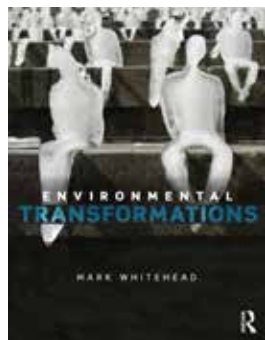
Edited by Dr. George P. Petropoulos

The book aims to provide an all-inclusive overview of the state of the art in the methods and modeling techniques employed for deriving spatio-temporal estimates of energy fluxes and soil surface moisture from remote sensing. Overall, the book integrates decades of research

conducted by leading scientists in the field and collects three types of articles: (1) comprehensive review articles from leading authorities to examine the developments in concepts, methods and techniques employed in deriving land surface heat fluxes as well as soil surface moisture on a field, regional and large scales paying particular emphasis to the techniques exploiting Earth Observation (EO) technology; (2) focused articles providing more detailed insights into the principles and operation of some of the most widely applied approaches with case studies that directly show the great applicability of remote sensing for the quantification and analysis of surface fluxes and soil moisture, or articles discussing specific issues in the retrievals of those parameters from space, and, (3) focused articles integrating current knowledge and scientific understanding in the remote sensing of energy fluxes and soil moisture highlighting the main issues, challenges and future prospects of EO technology in the domain the book is focusing on.

Environmental Transformations

Mark Whitehead



Environmental Transformations offers a concise and accessible introduction to the human practices and systems that sustain the Anthropocene. It combines accounts of the carbon cycle, global heat balances, entropy, hydrology, forest ecology, and pedology, with theories of demography, war, industrial capitalism, urban development, state theory, and behavioural psychology. This book charts the particular

role of geography and geographers in studying environmental change and its human drivers. It provides a review of critical theories that can help to uncover the socio-economic and political factors that influence environmental change. It also explores key issues in contemporary environmental studies, such as resource use, water scarcity, climate change, industrial pollution and deforestation. These issues are 'mapped' through a series of geographical case studies to illustrate the particular value of geographical notions, of space, place and scale, in uncovering the complex nature of environmental change in different socio-economic, political and cultural contexts. Finally, the book considers the different ways in which nations, communities, and individuals around the world are adapting to environmental change in the twenty first century.

Natural Hazards and Disaster Risk Reduction: Putting Research into Practice



Edited by Carina Fearnley, Emily Wilkinson, Catherine J. Tillyard, Stephen J. Edwards

Building upon presentations given during the conference on 'Disaster Risk Reduction for Natural Hazards: Putting Research into Practice', held at University College London in November 2009, the articles collected in this book examine how natural hazards research is accessed and used by practitioners and decision-makers, and conversely, how policy and

practice inform research. Bringing together views from humanitarian and development agencies, academia, business, government and funding bodies, the articles highlight the need for greater dialogue, understanding and collaboration between all these sectors if research is to be made relevant and generate significant impact on risk reduction policy and practice. These issues must be overcome to ensure that ultimately, and most significantly, discussions turn into positive practical actions so that research on natural hazards is relevant and applicable. The book represents a step in that journey.

The Routledge Handbook of Mobilities

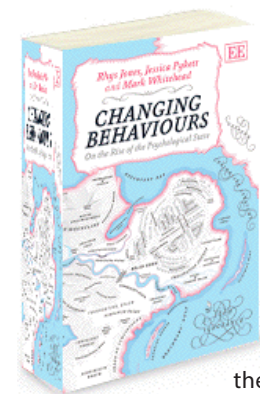


Edited by Peter Adey, David Bissell, Kevin Hannam, Peter Merriman and Mimi Sheller

In recent years there has emerged an increasing interest in mobility in the social sciences and humanities. Peter Merriman is one of five editors of The Routledge Handbook of Mobilities, an inter-disciplinary volume featuring over sixty chapters on themes ranging from the mobilities of railways, roads, children and tourists, to the movement of waste, food, disease and information.

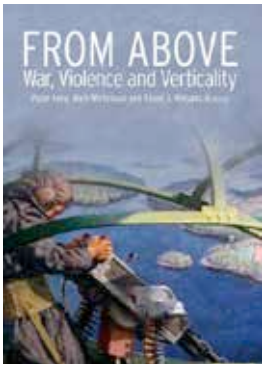
Changing Behaviours

Rhys Jones, Jessica Pykett and Mark Whitehead



Changing Behaviours charts the emergence of the behaviour change agenda in UK based public policy making since the late 1990s. By tracing the influence of the behavioural sciences on Whitehall policy makers, the authors explore a new psychological orthodoxy in the practices of governing. Drawing on original

empirical material, chapters examine the impact of behaviour change policies in the fields of health, personal finance and the environment. This topical and insightful book analyses how the nature of the human subject itself is re-imagined through behaviour change, and develops an analytical framework for evaluating the ethics, efficacy and potential empowerment of behaviour change.

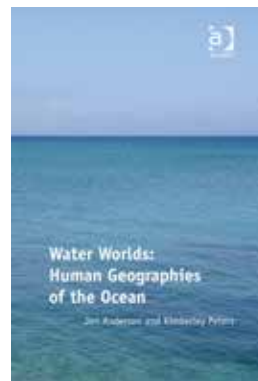


From Above

Edited by Peter Adey, Mark Whitehead and Alison J. Williams

The arrival of the aerostatic balloon at the end of the nineteenth century ushered in a new perspective on the battlefield, taking over from the mount—the hill at the edge of the field of combat—and the fortified tower positioned within it. Since then there has been no perspective more culpable in war, violence and security than

the aerial one. *From Above* explores the aerial view in new depth and clarity. It draws in vivid detail on studies of the aerial perspective today and on rich empirical investigations of the aerial view from the past. Chapters examine a range of case studies and examples, from Vietnam and the balloon prospect, camouflage, colonial policing, to today's drone wars. The contributors draw on perspectives from history, international relations, political geography and cultural studies in order to provide a truly interdisciplinary perspective on the view from above. They also consider the view from above in relation to its technologies, legalities, practices, doctrines, and visual culture.



Water Worlds

John Anderson and Kimberley Peters

This book challenges human geography's preoccupation with the terrestrial, investigating the terra incognita of the seas and oceans. Linking to new theoretical debates shaping the geographic discipline (such as affect, assemblage, emotion, hybridity and the more-than-human), this volume unlocks new knowledge

concerning the human geographies of ocean space. The book casts adrift stable, bounded and fixed conceptions of space and advances geographical understanding based on the world as 'becoming', changing, mobile and processional. This ontology supports the notion that the oceans are not simply fluid in a literal way, but also in a conceptual sense, suggesting that the seas have their own fluid natures – their own capacities and agencies – which are co-fabricated with social and cultural life.

New Staff



Mitch Rose is a newly appointed senior lecturer in DGES. Originally from Detroit, he came to the UK in 1998 to complete a doctoral degree at the

University of Cambridge. He has held previous positions at the University of Nottingham and the University of Hull where he taught cultural geography, landscape interpretation, cultural theory and the culture and politics of the Islamic world. His main area of research is on the cultural and political conflicts surrounding heritage preservation in Egypt, though many of his publications address his long-standing interest in cultural theory and the relationship between phenomenology and poststructuralism. For more information about Mitch and his research please visit his website at www.lostgeographer.com

Elizabeth Gagen joined the Department



in September, having previously taught at the University of Hull and University of Manchester. Her work examines historical geographies of childhood and

recreation, focussing in particular on the role of psychological knowledge in the construction of urban environments and governing technologies. Her more recent work turns to contemporary education policy to explore these themes. This work examines emotional education, in particular efforts to teach emotional literacy, as a governing technology which has implications for the ways gender, citizenship and class are imagined.



Richard Williams

was appointed as a Lecturer in River Basin Dynamics and Hydrology in February 2013. He has interests in numerical simulation of river

morphodynamics, and the application of novel technologies to monitor fluvial landform evolution, river restoration and flood risk. Richard completed his undergraduate degree at the University of Cambridge and a Master's degree at Lancaster University. He then spent four years at JBA Consulting, a specialist flood risk management firm. Richard commenced his doctoral work in 2009, in the Department. This doctoral work has been focusing upon developing numerical models to simulate flow, sediment transport and morphological change in braided rivers. This numerical modelling work is underpinned by high-resolution data obtained from a series of field campaigns in New Zealand that have monitored the evolution of the braided Rees River. Richard is a Member of the Chartered Institute of Environmental Management (MCiWEM), and a Chartered Scientist (CSci), Chartered Environmentalist (CEnv) and Chartered Water and Environmental Manager (C.WEM).

Sophie Wynne-Jones started working



as a lecturer in DGES after 3 years of working for the Wales Rural Observatory, where she undertook policy research on rural land-use for the Welsh Government. Broadly,

she sees herself as a researcher, writer and educationalist working in the fields of political-ecology; food and agriculture; governance and policy studies. She also has a background in

outdoor and environmental education, and has worked with the John Muir Trust, Transition Towns Movement, Climate Camp Cymru and the Common Cause Network. When Sophie isn't in the office she's usually found either in her greenhouse, wandering around in the mountains, or picking her way along the seashore...



Jesse Heley was appointed as a Lecturer in Human Geography, having previously worked in DGES as a Research Associate. With a BA, MA and PhD in Human

Geography—all completed in Aberystwyth—he has longstanding connections with the department and the university more broadly. Jesse's principal research interests are concerned with the changing nature of rural communities and the role of social class, although his work has focused on a wider range of related (and not-so-related) subject areas. These include regional governance and spatial planning, the politics of cross-institutional working, the connections between music and local economies, and the place of the researcher in ethnographic fieldwork. More recently, and building on his experiences as a member of WISERD, Jesse's research (in collaboration with Dr Laura Jones) has focused on the role of older people in maintaining and contributing to service provision in the countryside. Over the next few years Jesse will be teaching across a range of undergraduate and postgraduate modules, and working as a Co-Investigator with Professor Michael Woods on a European Research Council funded project concerning Rural Change and Development in Globalization.

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BSc Geography

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