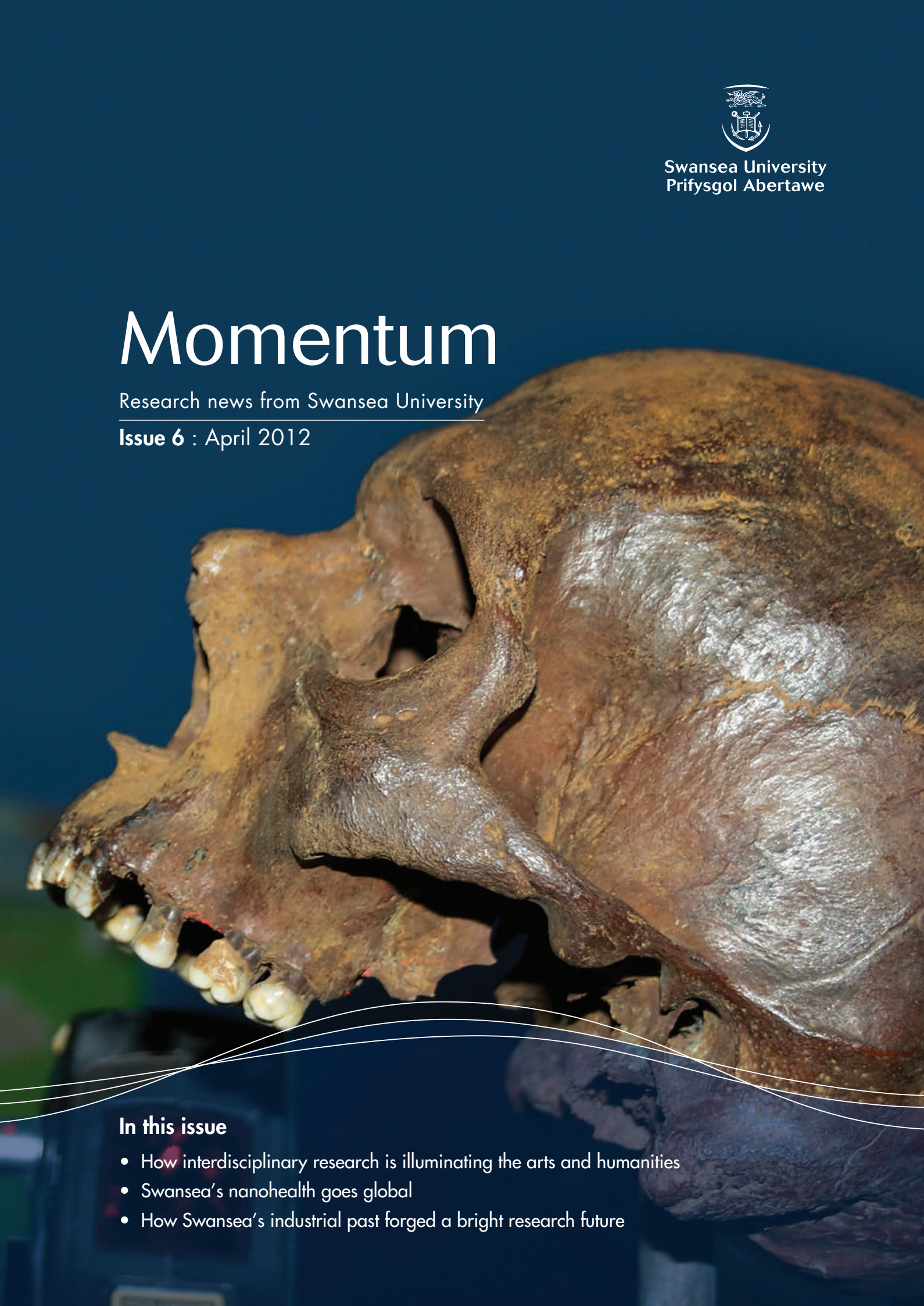
Swansea University
Prifysgol Abertawe

Momentum

Research news from Swansea University

Issue 6 : April 2012



In this issue

- How interdisciplinary research is illuminating the arts and humanities
- Swansea's nanohealth goes global
- How Swansea's industrial past forged a bright research future

Welcome to the April 2012 edition of *Momentum*.

This spring's issue looks to the future of research at Swansea with a report on how nanohealth is gaining pace through a new grant set to transform the University into a global nanohealth hub.

This issue also looks to the past and how Swansea's industrial and cultural history has helped shape the University's research.

Andrew Davies, newly appointed strategic adviser at the University speaks on his return 'home' to the University, and describes how Swansea's industrial legacy inspired the thriving scientific and technological community that the University is today.

Swansea's rich cultural heritage is explored in an interview with Professor Chris Williams, Director of the Research Institute of Arts & Humanities (RIAH), who also talks about how collaborative research is helping the Institute prepare for the Research Excellence Framework (REF) 2014.

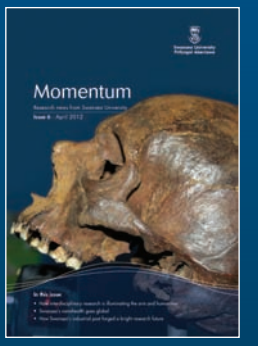
This month's research news showcases the breadth of interdisciplinary research being carried out across the University's six Colleges. Also highlighted is the fascinating and vital research being carried out by Swansea's PhD students.

In 'Great Minds', we celebrate the success of one of our most illustrious alumnae, author and presenter Mavis Nicholson, and report on the Department of Psychology's Professor Rodger Wood, recent winner of a lifetime achievement award.

On the cover

Skull from Mary Rose

The front cover shows a skull recovered from Henry VIII's warship, the Mary Rose. The image relates to a unique project conducted over the last 18 months between the Mary Rose Trust and sports scientists from the College of Engineering at Swansea University, to discover more about the lives of the medieval archers on board the ship. Read more in Research News, page 8-9.



In this issue

Momentum is produced by the Marketing Department.
Please contact **Mari Hooson** on **+44 (0) 1792 513455** or **email m.hooson@swansea.ac.uk** for further information.

For more details about Swansea University's research

The Beauty of Research

This year sees the third Swansea University Research as Art competition sponsored by the Swansea University Research Forum (SURF) and the EPSRC Bridging the Gaps programme. The competition requires entrants to submit a visual representation of their research along with a short description intelligible to non-specialists. It has in previous years been a tremendous success.

This year the competition has moved to a new level with the judging of submissions taking place in London and involving:

- Prof. John Womersley – Research Councils UK Champion for Public Engagement with Research, Chief Executive Officer of the Science and Technology Facilities Council (STFC)
- Dr. Gail Cardew – Director of Science and Education at the Royal Institution, Vice-President of Euroscience, Wellcome Collection Advisory Panel, EPSRC Peer Review College
- Flora Graham – Deputy Editor of NewScientist.com, who has also worked for BBC, CBC and CNET UK as a writer/broadcaster.

The competition is designed to capture the diversity and beauty of the research carried out at Swansea and convey that to colleagues in the field and beyond. In this it has been very successful, furnishing images which enrich University publications, enliven the infrastructure of the campus and even grace University Christmas cards. More importantly the stunning images give a powerful sense of the diversity of research at Swansea.

A celebration of diversity is reflected in the present issue of *Momentum*: sports scientists examining the stress effects of archery on skeletons recovered from the Mary Rose; the measurement of pure anti-matter atoms; research on the proliferation of harmful algal blooms in the North Atlantic and the interaction of medical nano-technologists with the global academic community. This gives just a flavour of the multifaceted richness of research at Swansea University.

We need to get this message out to a wider academic and, in particular, non-academic audience. Our revamped website is helping to do this, quality publications such as *Momentum* are also playing a part and new ventures are planned. But our research art competition has a critical role to play: not least in its impact on the kind of national figures now on the judging panel. Art and images represent a universal language; one intelligible to specialists and non-specialists alike, to academics and to the general public. They represent a way of conveying the quality and importance of what we do, and the excitement we have in doing it. And I, for one, am looking forward once again not just to judging the entries but to celebrating publicly the vibrant research community of which I am a part.

Professor Noel Thompson
Pro-Vice-Chancellor (Research)

New healthy lifestyle web tool

Researchers at Swansea and Cardiff Universities are developing a web-based tool, funded with £442,492 by the Economic and Social Research Council (ESRC), aimed at helping people adopt healthier lifestyles.

Dr Katy Tapper from Swansea University's College of Human and Health Sciences and Professor Greg Maio, Professor Geoff Haddock and Dr Mike Lewis from Cardiff University have developed the 'Health Values' programme to encourage individuals to eat more healthily. The team have recruited participants for an evaluation study to find out whether it is effective.

Dr Tapper said: "Lifestyle has a major impact on health and well-being. A healthy lifestyle can reduce the risk of a wide range of diseases as well as help prevent weight gain and obesity.

"We want to find out whether tasks can help encourage people to lead healthier lifestyles. In this instance, we're looking at tasks in relation to healthy eating, though in the future we hope to extend this work to other health-related behaviours such as exercise and alcohol consumption."

The programme consists of four parts and is based on psychological principles that have been shown to help individuals change their behaviour.

Dr Tapper said: "In part one we give participants some feedback about their diets, along with general dietary advice. In part two, we ask them to think more deeply about health-related issues. Part three asks participants to make specific plans to change behaviours, and in part four we give participants the options to repeat tasks, work on plans and view weekly tips.

"We'll be launching an online only version of the study this autumn. If the results of this initial research are promising we hope to develop and refine the programme and eventually extend the work to a Smartphone app."

www.healthvalues.co.uk/

Bridging Borderlands

Chris Williams (pictured) joined Swansea in 2005 as Professor of Welsh History. He is Director of the Centre for the History of Wales and its Borderlands and Director of the Research Institute of Arts & Humanities (RIAH), which brings together researchers and postgraduates across the College of Arts & Humanities (COAH) to create a rich research environment geared to excellence and impact. Professor Williams was recently a consultant on a major new BBC Cymru Wales series - The Story of Wales - the first episode of which was broadcast on BBC Wales in February.

Why is a Research Institute for Arts and Humanities so important at Swansea?

Before 2009 when RIAH was formed, the School of Arts and the School of Humanities were separate entities encompassing 13 departments, and research activity was highly fragmented. RIAH has been a way of bringing all research activity together within a single unit, encouraging better links and economies of scale. We've been able to support developing projects through our Research Initiatives Fund, and connect scholars across subject areas within Arts and Humanities as well as elsewhere on campus. RIAH now has a high profile at University level and is part of the UK-wide Consortium of Institutes of Advanced Study.

How do you think arts and humanities sit alongside other research areas at Swansea, such as engineering and medicine? How can the disciplines complement each other?

One of the great challenges in the University sector and beyond is the unhelpful idea that the arts and sciences inhabit separate worlds. It is essential for arts and humanities scholars to break down traditional disciplinary barriers and engage with other areas of scholarship. A very good example of how this has been happening is the Bridging the Gaps (BTG) initiative. Supported by a £780,000 grant from the Engineering & Physical Sciences Research Council (EPSRC), it is really important in opening up opportunities. BTG aims to deliver high-quality projects directed towards the global, physical, economic and social challenges that face today's modern world. Across the campus we have found synergies with engineering, geography, human and health science, Egyptology, history and literature.

Combining the research of arts and humanities scholars with other disciplines can offer new perspectives. For example, the priorities of, for instance, medicine and engineering are determined in cultural, social and political contexts. You need arts and humanities scholarship to make sense of these. We have a great deal to learn from other disciplines resulting in fascinating research. Visualisation techniques driven by computer science at Swansea connects with work being done in the linked fields of economic history, Egyptology and heritage. Textual analysis of Shakespeare in translation is greatly facilitated by specially-designed software.

As the research arm of COAH, could you list some of the successes RIAH has enjoyed over the last 12 months?

We have enjoyed a high rate of successful grant applications over the last 12 months. One example is the bid focusing on the history of disability in coalfield areas co-developed with Professor Anne Borsay from Human and Health Science; Dr David Turner from the History and Classics Department and Dr Kirsti Bohata from English, who has specialised in disability and literature. The bid won over £900,000 of funding from the Wellcome Trust, a large grant in arts and humanities terms.

Professor Huw Bowen's copper heritage project is the most obvious example of how arts and humanities research can get on people's radar. This project has strong links with the Swansea University Research Forum (SURF); BTG and the University's computer scientists. It has also generated much public interest, linking as it does to the regeneration agenda of the City and County of Swansea.

Three of our academics, Dr Mike Franklin, Dr

Professor Huw Bowen, Arts and Humanities

"Bridging Gaps, Changing Landscapes: the future of the Lower Swansea Valley's industrial past"

Joy Porter and Dr Cynfael Lake, have received British Academy Mid-career Fellowships in the last 12 months. Competition is fierce for these awards so the fact that three of our staff have won them is testament to the quality of their research. Measured in terms of grant applications and grant income, RIAH has been very successful, especially considering the intense competition for grants amongst universities. RIAH has staff whose role it is to assist our colleagues in developing and improving their grant applications and advising on which bodies to apply to. We also have a research support officer who helps people administer their grants. Many of our scholars have commented on how helpful RIAH has been in this area. Basically we're trying to develop the infrastructure to help people with bright ideas become more successful and to give their research the prominence it deserves.

Could you explain a bit about the new skills development programme beginning in May this year?

The programme is funded by the Arts and Humanities Research Council (AHRC) and aims to develop postgraduate research students' skills focusing on two major projects. Research Councils UK (RCUK)-funded research students from across the UK will be given the opportunity for a week of heritage-themed project work focussed on Cu@Swansea, the major, heritage-led redevelopment project currently under way at the site of the former Hafod Copperworks. A number of high - profile heritage organisations, including the

National Waterfront Museum, Blaenavon World Heritage Site and the Glamorgan Gwent Archaeological Trust, are supporting the project. Research students will also have the opportunity to work with our Egyptology expert Dr. Kasia Szpakowska and undertake extended internships at the South Asasif Conservation Project in Egypt. The programme also involves placements in museums and heritage sites in Wales and elsewhere in the UK along with a range of activities and workshops. Students who participate will benefit from an enhanced CV as well as being alerted to job opportunities.

Do you think Wales offers a particularly rich source of research? In what sense?

Well as an historian of Wales I'd be inclined to say yes! Wales offers a number of perspectives. There is its bilingual culture and its two parallel literatures. Our flagship research centre, the Richard Burton Centre for the Study of Wales, oversees much relevant research activity in this area. We conduct research into how these cultures interact and respond to each other. Our research also looks at how Wales's industrial and migration histories have connected Welsh people to broader cultural and historical changes. It's fair to say that Wales has developed a stronger sense of its identity over the last 30 to 40 years. The political landscape of the UK is in flux and, as elsewhere in Europe, new multinational and multicultural priorities have emerged. Wales is very much part of these debates. And of course there is Dylan Thomas, the centenary of whose birth falls in 2014. He continues to inspire interest around the world, brought to life at Swansea through the research of, amongst others, RIAH's Dr John Goodby.

How integral is interdisciplinary research, particularly now?

Interdisciplinary research is vital. Increasingly, research councils are looking for scholars to respond in an interdisciplinary way and individual research needs to be complemented by a keen eye for interdisciplinary opportunities.

Exploring the edges of conventional disciplines often inspires the most exciting projects. When disciplines interact, genuine advances can be made. A key objective for RIAH is to help facilitate this, for example working with the Bridging The Gaps programme.

How important is the Graduate Centre to RIAH's future research output?

Postgraduate researchers are the academic leaders of the future and it is vital that we provide an encouraging, supportive and stimulating environment to allow new researchers to come through, and feed into existing projects. Before the formation of RIAH there was no graduate centre. Now postgraduates can interact with each other through activities such as skills sessions, workshops and our annual conference. We aim to provide the opportunities for students to become future members of RIAH, as postdoctoral assistants and research associates.

What is your vision for RIAH and how is this achievable?

RIAH has several key objectives. First, we want to ensure the best possible performance in the 2014 Research Excellence Framework (REF), encompassing impact, recruitment and grant capture. We don't know what the future research landscape will look like but we want to lay the foundations for the next stage of arts and humanities research so we start from a position of strength. That means being aware not only of RCUK priorities but also those of the Welsh Government and of the EU FP7 and successor programmes. Being alive to these opportunities is critical.

Thank you

Arts and Humanities lecture

New adviser sees exciting future for Swansea

Andrew Davies opened the first Institute of Life Science at Swansea University in 2007. He is pictured here (left) at the launch with Vice-Chancellor Professor Richard B Davies.

Andrew Davies is one of the University's newly appointed strategic advisers. In an essay for Momentum, the former Welsh Minister and Honorary Professor of the University speaks about his return 'home' and how Swansea's illustrious past is inspiring the University's key role in a 21st century knowledge economy.

Swansea has been 'my' university for over 40 years now, since I first came as an undergraduate in 1970. I am therefore delighted to have "come home" to work as a Strategic Adviser and also immensely proud to have been made an Honorary Professor. The period since 1970 has been a tumultuous one for Welsh society, politics, the economy - and me! The University, Swansea and Wales are now very different places than they were in the early 1970s.

The National Assembly for Wales was established in 1999 and I became the Assembly Member for the Swansea West constituency, in which the University is located, and a Government Minister, I have always been clear that universities had a central role in creating a prosperous and sustainable future for Wales. It has been said that in the medieval period religious institutions such as cathedrals and abbeys, were the hub of the economy, that factories became the foundation of the Industrial Revolution and that now universities are the driving force of the 21st century knowledge economy.

Swansea University was established in 1920 to forge links between industry and higher education and it is no accident that the University's coat of arms represents that union with an open book resting on an anchor, a pick and a hammer - which then symbolised the Swansea and Welsh economy. The world of work has however changed irrevocably: brain has replaced brawn.

In addition to its location and natural assets Swansea has great diversity in its communities, history, arts, culture and sporting achievements. Swansea has a very rich history. In her book 'Intelligent Town", Dr. Louise Miskell of the University's History department has pointed out that 'Copperopolis', as Swansea was nicknamed, was not only an industrial town, port and cultural venue, but in the early 19th century had a vibrant, amateur scientific and intellectual community. For example, Sir William Grove, born in Swansea in 1811 and a lawyer and judge, was an amateur scientist who in 1842 developed the first fuel cell, the foundation of the hydrogen economy.

As a Cabinet Minister I believed that higher education was key to the future of the city, the region and Wales, and wanted to ensure that Swansea University was at the forefront of developments. Consequently, working closely with Professor Julian Hopkin, I helped deliver the University's Medical School. I knew this would be the catalyst for further knowledge economy investment, so I was delighted in committing the Welsh Government in collaboration with IBM and the University, to bring the first Institute of Life Science to Swansea (ILS).

Much cutting-edge scientific work now takes place in the space between academic disciplines and the ILS is a model for that collaborative work. One result has been the Centre for NanoHealth and the UK-Texas Collaborative, on which I worked with Professor John White and Dr Steve Conlan.

In developing their role in the knowledge economy, universities are increasingly the research arm of industry. In this respect, Swansea University is ahead of the game with its exciting plans for the new Science & Innovation campus, its work with global companies like Tata and Rolls Royce based on the University's global engineering expertise, and with the possible further development of the ILS concept.

I still feel strongly that the University has a crucial role to play in the wider civic life of Wales. It is vitally important that Swansea continues to make a contribution across the

whole of the University's activities. Together with Dr Jonathan Bradbury of the Political and Cultural Studies department I set up and hosted Swansea University policy briefings at the National Assembly. With Jonathan I established Internships for his students at the Assembly.

In other areas, the establishment of the Research Institute of Applied Social Sciences, led by Professor Judith Phillips, places it in pole position to work with Government in developing policy. Similarly the Research Institute for Arts and Humanities brings leading research focus to a range of contemporary, cultural and historical issues.

And last but no means least, there is exciting potential for developing Swansea as not only a Science City but also a City of Sport, with the University building strategic relationships with both the Swans and the Ospreys.

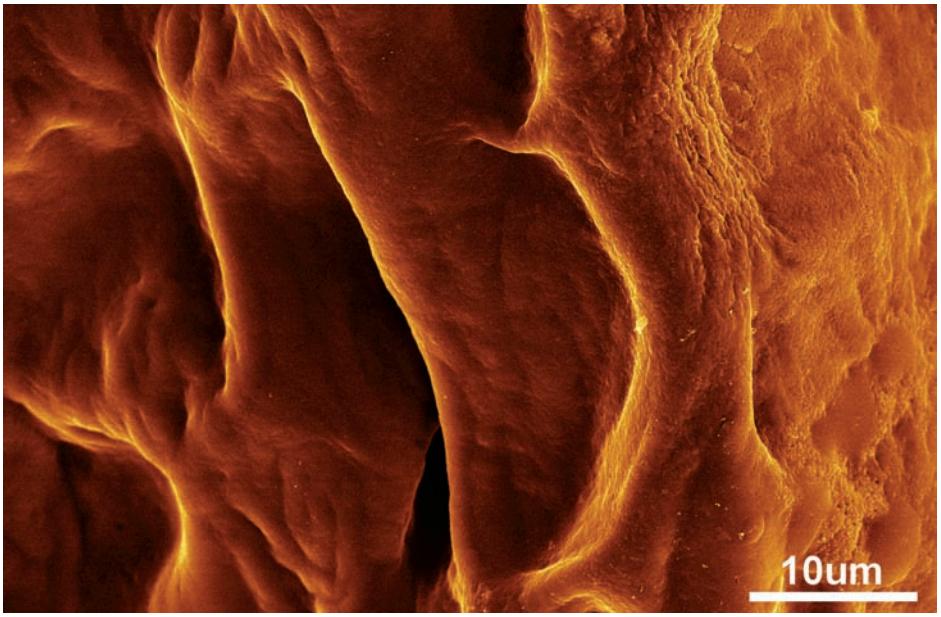
I believe this combination puts Swansea in a good position to build on its strong performance in the 2008 RAE with the REF in 2014. With an exciting 'Team Swansea' and global opportunities like that - who wouldn't want to be part of it!

Andrew Davies

"We are delighted that Andrew has agreed to be our Strategic Adviser. He brings a wealth of high-level valuable experience to the role which will involve advising senior management at the University, particularly on issues such as the campus expansion and public policy in Wales and beyond. I look forward to working with him.

We are also pleased to recognise Andrew's expertise and achievements through appointment as an Honorary Professor linked to the Research Institute for Applied Social Sciences within the Department for Political and Cultural Studies."

Vice Chancellor,
Professor Richard B Davies



An image of bovine cartilage, viewed using Scanning Electron Microscopy. Researchers use this technique to examine the sample without tampering with it, which can help with regenerative medicine for patients with knee injury. This image was entered into last year's Research as Art competition. Watch a film of all the stunning images on YouTube: http://youtu.be/TT_-eq2EyI0

Swansea becomes global medical technologies and nanohealth hub with new award

Swansea University's Centre for NanoHealth and Human Computer Interactions research group has become a global hub with the help of a new £500,000 grant from the Engineering and Physical Sciences Research Council (EPSRC).

The 'EPSRC Global Hub in Medical Technologies and NanoHealth at Swansea University' came into effect on 1 April 2012. It will facilitate a series of staff exchanges over a 12 month period to build on current and new research initiatives with Swansea's international research partners.

The EPSRC grant, awarded specifically to internationally mobilise staff expertise, will help iron out problems that frustrate academic activity and advances. Through the Global Hub, Swansea researchers will have the freedom to take their knowledge and creative solutions about vital health issues to countries including China, France and the US.

The Global Hub will rapidly internationalise areas of research strength in Swansea University's existing EPSRC-funded portfolio of activities within four key areas: technology development, safety assessment, therapeutics, and human factors engineering. The opportunity will enable Swansea researchers to improve an individual's quality of life through targeted drug delivery, make it possible for patients to manage their own drug delivery within the comfort of their own homes, and reduce human error through improved user interfaces with devices that deliver drugs.

Swansea University's Centre for NanoHealth (CNH) is a joint initiative between the University's Institute of Life Science in the College of Medicine, the Multidisciplinary Nanotechnology Centre in the College of Engineering, and the Abertawe Bro Morgannwg University NHS Trust.

Professor Steve Wilks, Head of the College of Science, said: "The new Global Hub is vital in enhancing our existing collaborations and developing new joint ventures through the mobilisation of staff to those countries where we have key partners in Nanohealth.

"The award will add value through working across disciplines in the arts, humanities and social sciences.

Visit
www.swan.ac.uk/engineering/nanohealth/

Research round-up

Swansea physicists' historic anti-matter breakthrough

Physicists from the College of Science have been part of an international team which has made a significant research breakthrough: the first direct measurement of any kind on a pure anti-matter atom.

The team, made up of scientists from eight countries, were working on the ALPHA experiment at CERN, the European Organisation for Nuclear Research, in Geneva.

They were examining anti-hydrogen atoms – the anti-matter counterpart of the simplest atom, hydrogen. By precise comparisons of hydrogen and anti-hydrogen, the ALPHA team hope to study fundamental symmetries between matter and antimatter and cast light on the puzzling absence of bulk anti-matter in the universe today.

Professor Mike Charlton, who led the Swansea team, described the anti-hydrogen measurements as "a historic achievement in anti-matter science." Fellow Swansea physicist Dr Niels Madsen added: "This is the first direct measurement of any internal state in an anti-atom. It is fantastic and a true breakthrough that we can do measurements of this kind with such a rare species."

The findings were published in the leading science journal *Nature*. Swansea has a total of ten authors on the paper – the largest representation from a single institution.

Grant to help reduce animal testing in cancer research

A team at Swansea University's Institute of Life Science have received a grant to develop new testing methods based on human cells, which will substantially reduce animal testing for cancer-causing chemicals.

Professor Gareth Jenkins and his team have been awarded a £400,000 grant by The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs). They are looking at methods for assessing cancer risk that are faster, more efficient and have reduced reliance on animals.

Currently, testing chemicals used in the pharmaceutical, agrochemical, and consumer products industries for their potential to cause cancer (carcinogenicity testing) uses large numbers of animals, and is time-consuming and expensive. Moreover, the latest amendment to the EU Cosmetics Directive prescribes a ban on animal testing of all cosmetic ingredients.

Professor Jenkins plans to study how chemicals interrupt the mechanisms by which cells communicate with each other, and to combine this information with current data to provide a better prediction of which chemicals are potential carcinogens.

The study is being conducted in collaboration with Roche and GE Healthcare.

Skeletons from the deep – the lives of Henry VIII's archers

A research project on remains from Henry VIII's sunken flagship, the Mary Rose, is revealing fascinating detail about the lives of those lost on board, thanks to 21st century technology.

The warship, which sunk in 1545, was raised from the Solent in 1982, and 92 fairly complete skeletons were amongst the remains that were recovered.

Nick Owen, Sport and Exercise Biomechanist from the College of Engineering at Swansea University, which has been working with the Mary Rose Trust on the project, said: "This sample of human remains offers a unique opportunity to study activity-related change in human skeletons. It is documented that there was a company of archers aboard when the ship sank, at a time when many archers came from Wales and the South West of England."

Some bows required a lifetime of training and immense strength as the archers had to pull weights up to 200lbs (about 90kg). Many of the skeletons show evidence of repetitive stress injuries of the shoulder and lower spine. This could be due to shooting heavy longbows regularly.

Mr Owen and his team are basing their research on the biomechanical analysis of the skeletons to examine how a lifetime of using longbows can affect the musculoskeletal system. Their work has already featured on the BBC.

Part of the process of analysing the skeletons involves creating 3-D virtual images so that measurements can be taken without causing any damage. The results of this research are expected this summer.

University scoops double award for research in Science and Engineering

Dr Siwan Davies (pictured left) and Dr Antonio Gil have won highly prestigious Leverhulme awards designed to support the work of outstanding young research scholars.

Dr Davies is a Reader in Physical Geography and has an international reputation in advancing the dating of rapid climatic changes. She exploits the innovative use of volcanic-ash layers to compare different geological records to assess leads and lags in the climate system. She has demonstrated that volcanic material is distributed over much larger geographical areas than previously thought and has uncovered evidence of unknown volcanic eruptions within the Greenland ice cores.

Dr. Gil (pictured left) is a Senior Lecturer in the Civil and Computational Engineering Centre. He designs computer codes in order to simulate the underlying physics of engineering problems.

His current work includes the computer modelling of graphene nanomembranes used in biosensors, the hemodynamic performance of bioprosthetic heart valves and the optimum design of energy harvesting devices.

With the support of the Philip Leverhulme Prize, Dr. Gil and his group aim to push forward these highly active research areas whilst continuing to build upon and explore new real world applications of the research.

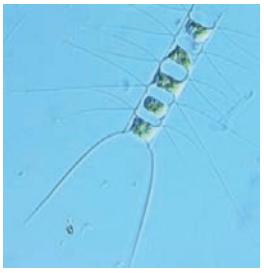
Climate Change: Researchers report dramatic changes in North Atlantic biology

New research into the cause of an abundance of harmful algal blooms in the North Atlantic and North Sea has been published in leading journal Nature Climate Change, by a team which includes scientists from Swansea University.

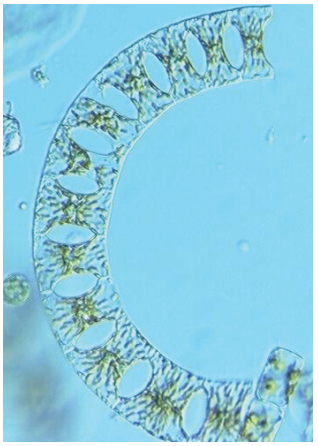
One of the paper's authors, Professor Graeme Hays from Swansea's Department of Biosciences, College of Science, said: "Imagine looking at your garden one morning and finding that the grass had suddenly been replaced by bushes".

"We have found changes of this magnitude in the biology of the North Atlantic, with a dramatic switch in the prevalence of dinoflagellates to diatoms – two groups which include many of the microscopic planktonic plants forming the base of the ocean's food chain." The findings of Professor Hays and colleagues have shown that the changes are partly driven by increases in water temperature, which are a well known part of global warming.

But more unexpected was the team's discovery that the plankton shift is also strongly driven by an increase in the windiness in the North Atlantic over the last 50 years. Professor Hays said: "In the ocean, windiness promotes vertical mixing of the water, which in turn has profound impacts on surface nutrient levels and the vertical distribution of plankton".



*Examples of algae – Eucampia zodiacus and Chaetoceros decipiens – sampled by the team.



The team's paper is published at www.nature.com/nclimate. The research was supported by the Climate Change Consortium for Wales and through a Natural Environment Research Council doctoral training grant.

*The team deploys the Continuous Plankton Recorder (CPR) sampling equipment in the North Sea.

*Photographs Courtesy of the Sir Alister Hardy Foundation for Ocean Science, Plymouth

Elephants for Africa

Swansea University alumna Dr Kate Evans is an elephant researcher and conservationist based in Botswana. She is also founder and Director of Research and Education of the UK charity Elephants for Africa. The charity won the 2011 Graham B Rabb Conservation Medal from the Chicago Zoological Society for its work in understanding elephant biology and supporting conservation in Africa.

How did your degree lead you to where you are today?

I was lucky; I knew what I wanted to do with my degree prior to coming to university. I had made my mind up at the age of seven to be an elephant researcher/conservationist. Reading zoology at Swansea University enabled me to realise that ambition.

Elephants for Africa is dedicated to elephant conservation through research and education. Could you explain how these two elements work within the charity?

The foundation of Elephants for Africa is the research project which has been running since 2002 when I started my PhD on adolescence in male elephants. There is still much we don't understand about the social complexities of elephants, particularly male elephants, and we believe that to conserve and manage them in the future we need to understand both their ecological and social requirements. It was only through talking with staff working at the Safari camp where we have been based for the past ten years and also to the Department of Wildlife and National Parks officers that I understood that unless we engage communities in their wildlife then conservation will have limited effect.

The Boyce-Zero scholarship was set up in memory of two wonderful conservationists who taught me an enormous amount. The fund enables Motswana students to complete their postgraduate degrees in conservation biology. Our first student, Mphoeng Ofithile, will complete his Master's this year, and then we will start looking for our next student, with Mphoeng playing a pivotal role in the training of this new student.

In 2011 we started our Elephun weekends to engage young students in wildlife and to open up career opportunities within wildlife. The weekend is based around elephants and giving young students the opportunity to see wildlife in a non-conflict situation. What I did not comprehend was the impact this would have on our staff and the staff of the local safari camp who volunteered their time to help. The staff at the local safari camp were eager to share their knowledge with the children. Our research and education programmes therefore act as an exchange of information, connecting enthusiastic conservationists and researchers with children within the communities to see the potential in conserving wildlife for Botswana's future.

Have you always been passionate about conservation?

Yes from a very young age. I was a child that was always picking up stray cats, saving frogs from pesticides and even befriending rabid dogs! Much to the horror of my parents, I am sure.

The charity started from a research project you established in the Okavango Delta, Botswana, in 2002. Can you explain how it evolved?

When I started my PhD, my primary aim was to establish a long-term research project within Botswana to help conserve and manage the largest remaining elephant population in the world. Gaining a PhD was very nice but a secondary incentive for me. Long term research on large mammals is imperative for long term conservation. The research interests have evolved as we have spent more time with the elephants and seen how they engage with their environment.

You have recently won the 'George B Rabb Conservation Medal'. Why do you think you were chosen to receive this?

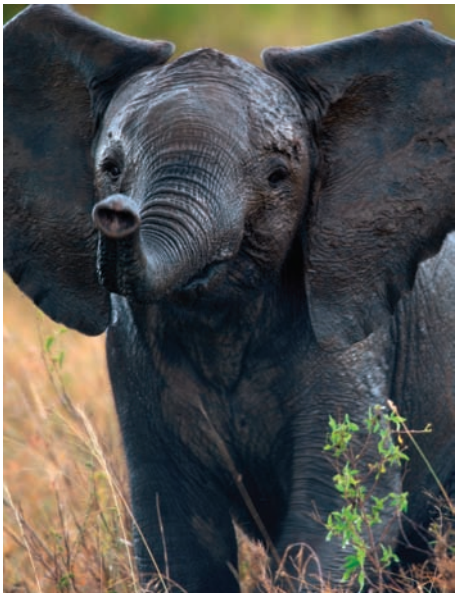
This is a very hard question to answer. The award was created in 2005 by the Chicago Zoological Society to honour the conservation leadership of George B Rabb. I am told that the society was particularly impressed with the balance of scientific research and educational components in Elephants for Africa. It is a huge honour for Elephants for Africa to be awarded this accolade and for me personally, as the first woman and first non-US citizen to receive this medal.

What research projects are you currently involved with?

We have three main areas of research interest: behavioural ecology, communication and welfare. During my time in the Okavango Delta, the system has changed quite dramatically and therefore the social dynamics of the elephants in the area have changed too with less adult males being sighted. It would appear they have moved and one area they have moved to is the Makgadikgadi, so we are following them. Our current projects include understanding the social ecology of male elephants, population dynamics in the Mkagadikgadi and Nxai Pan National Parks, and the physiology of male elephants. This area has a high level of human/wildlife conflict, and this is one aspect we hope to become involved with.

www.elephantsforafrica.org

Thank you



Great Minds – Mavis Nicholson

Swansea graduate Mavis Nicholson, journalist and presenter, has been a familiar face and voice on TV and radio since the early 1970s. She has also researched and written on various issues, including women's experiences of the second world war.

Mavis Mainwaring was born on 19 October 1930 and spent her childhood in Briton Ferry. She became a student at Swansea University in 1949 where she studied English and met her husband, the writer and journalist, Geoffrey Nicholson.

In 1951, on graduating from Swansea, Mavis won a scholarship to train as an advertising copywriter and moved to London. There, Mavis and her husband became the centre of a lively social circle which included author Laurence Fleming, journalist and broadcaster John Morgan and Kingsley Amis, who himself was a lecturer in English at the then University of Wales, Swansea between 1949–1961. Amis was later to dedicate his 1960 novel *Take a Girl Like You* to Mavis and her husband.

When she became pregnant Mavis happily stopped her work to look after her three sons and became a full-time mum. She regarded it as a very important part of her life, if not the most important.

Her flair for debate, penchant for asking searching questions and her engaging conversational style on the London dinner party circuit led to her being spotted by British television producer, Sir Jeremy Isaacs, and her second career as a broadcaster was born. She was asked to host a programme each week, when daytime television was launched. She became one of the first women to interview on daytime television, with Mary Parkinson, Judith Chalmers, Elaine Grand and Rita Dando.

Her first presenting job was on the 1972 show 'Good Afternoon', after which her TV career spanned the next 25 years. She presented programmes such as 'Afternoon, Afternoon Plus' and 'Mavis On Four' from the 1970s to 1990s, on which she interviewed high-profile celebrities including Elizabeth Taylor, David Bowie, Peter Cook and Dudley Moore, Kenneth Williams, Rudolf Nureyev, Morecambe and Wise, Liberace and Maya Angelou, who became a friend. Mavis Nicholson's last work for television was 'Oldie TV' in 1997, a television version of *The Oldie Magazine*.

She has presented radio shows including 'Start the Week', 'Woman's Hour', and the 'Jimmy Young Show' when he was indisposed.

Mavis is author of various publications, including: *Martha Jane & Me: A Girlhood In Wales* (1992), and *What Did you Do In The War, Mummy?* a collection of interviews with women from different class backgrounds who lived through World War Two, giving valuable insight into the realities of women's lives at this critical time. The book was republished by Seren in 2010 to coincide with Mavis' eightieth birthday. She also wrote *Help yourself: Solutions to the practical problems of everyday life* (1974) and a chapter on grief in *A Bit On The Side* (2007).

Mavis has marched against nuclear arms, was at Greenham Common, and marched in London against the war with Iraq. She still writes for *The Oldie Magazine* as its Agony Aunt. She currently lives in mid Wales in Llanrhaeadr Ym Mochnant. Here she helps run the Valleys Film Club, and she edits the community paper: *The Chronicle*.

Mavis Nicholson featured in the April 2012 International Women's Day (IWD) poster exhibition sponsored by the University's Centre for Research into Gender in Culture and Society (GENCAS). The exhibition, designed to raise the visibility of female Swansea graduates, celebrate their successes and demonstrate how they have shaped the life of the University, was displayed in Swansea University library during March.

Lifetime achievement award for Professor of Neuropsychology

Rodger Wood, Professor of Neuropsychology in Swansea University's Department of Psychology, and Consultant Clinical Neuropsychologist, has been presented with a lifetime achievement award.

The award was presented last December by The First Minister, Carwyn Jones, at The Recognising Achievement for Service to Wales reception, at the Swalec Stadium in Cardiff.

The Welsh Government established the scheme to acknowledge people who have: demonstrated innovation in joint integrated health and social care that is delivering lasting results; brought distinction to Wales on the local, national or international stage; given exceptional service; achieved a major milestone that has earned the respect of their peers and role models.

Professor Wood, who is also a Consultant Clinical Neuropsychologist, received a lifetime achievement award for his work in brain injury rehabilitation.

The First Minister said: "The individuals who I have presented these awards to make me proud of Wales, and the recognition they receive is richly deserved."

Professor Wood said: "It really was an honour to receive this award and a very pleasant surprise to learn that my clinical and research work has been recognised by the Welsh Government."

Postgraduate Q&A

Sylvie Vandenabeele is a final year PhD student in the University's College of Science. Sylvie's research, under Professor Rory Wilson, examines the negative effects of animal tagging. Specifically, she is examining the effects of tags on seabirds and is working on developing minimal impact tracking methods.

How did you come to study at Swansea? Is the environment here helpful to your research?

Back in 2009, I was looking for an opportunity to do my Master's degree internship abroad and got in contact with Professor Rory Wilson. I told him about my desire to work in animal conservation and welfare and he offered me work on a project he had set up in collaboration with the RSPCA. The aim was to develop a new long-term tracking system for seabirds that would have minimal impact on them. We had really promising outcomes but only the very first steps could be undertaken within the seven months I had for the internship.

Given my real interest in the work achieved and the fact that Professor Wilson wished to develop further the technique, he suggested I should carry on the project through a PhD. I was lucky enough to receive funding from the RSPCA and an organisation specialising in the rehabilitation of oiled wildlife called the Oiled Wildlife Care Network in California.

Swansea provides the ideal conditions and all the support needed to achieve the best research possible. I feel an integral part of the University community and this motivates me to give the best of myself to my research.

I understand animal tagging is mainly a positive thing but what have you found to be the negative effects of the method?

Good point and that is exactly the main topic of my PhD, though a really vast topic given the large number of animals now being studied using tracking devices. That is the reason why we decided to focus on seabirds. The benefits obtained from animal tagging can be diminished by the potential negative effects tags can cause to the bearers.

Behavioural disruptions, increased energy output and physical injuries are among the main negative effects that can be induced by tracking devices and/or their attachment systems.

What is the best thing about your research?

I enjoy very much the diverse aspects of my PhD, from pure fundamental research to more applied and technical issues that need to be answered.

Many applications can emerge from the use of a long-term tracking system. For instance, it can help to reveal the movements of juvenile seabirds from leaving the nest to returning to breed, which can be a period of several years for some species. It can also help to determine the fate of rehabilitated oiled seabirds and provide a more reliable estimate of their survival rate telling us about the real success of the rehabilitation methods used in the aftermath of oil spills.

Studying the effects of tags on birds also brings different fields together: biology and ecology when I look at the behaviour of the birds, and engineering and physics when I need to examine the hydro/aerodynamics aspect.

What are your plans following completion of your PhD?

I think I am likely to continue and do a post-doctoral study still linked with the development of this minimal-impact tracking system for seabirds. This time it would see the realisation of one of the applications I mentioned above, probably a study on juvenile seabirds. A good way to look at the whole project could be to describe my Master's degree as the incubation phase, my PhD as the proper development phase and the post-doctoral would be the hatching time.

Thank you.