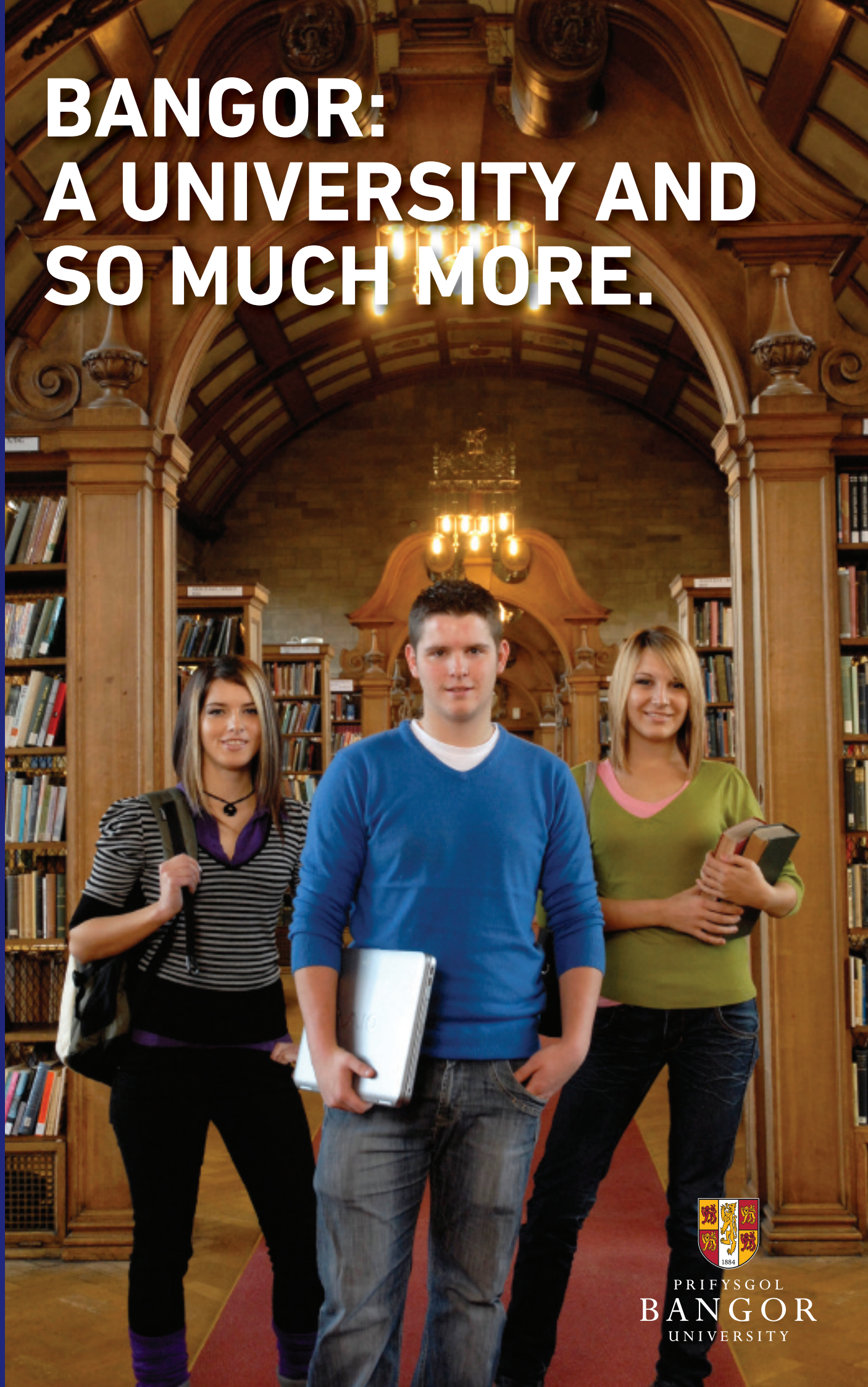


BANGOR: A UNIVERSITY AND SO MUCH MORE.



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CONTENTS

1 A WORD FROM THE VICE-CHANCELLOR

2-5 HIGHLIGHTS OF 10/11

6-9 TEACHING AND LEARNING

A Strategy for Students
Increasing Employability
Lectures Go Global
Making a Positive Impact
Leading the Way in Welsh

10-13 RESEARCH

High-flying Geese
Keep the Sweet as a Treat
Sniffing the Air for Safety
What's the Score?
Why Catfish are Copycats
Ageing Well

14-18 COMMUNITY

Coasting Towards a Sustainable Future
'Fair Game' for Food - Helping Madagascar Manage Hunting
Reading Skills Sprout in Schools
Pontio is Set to Transform Bangor
Winning in Tendering

GOVERNANCE

The Council, which is chaired by Lord Davies of Abersoch and is the governing body of the University, met on four occasions in 2010/11. The Council is assisted by a number of sub-committees, including the Resources Committee, chaired by the Treasurer, Mr David Williams, which met on five occasions. The Audit & Risk Committee, chaired by Mr Geraint Jones, met on four occasions. Other Council committees include the Strategy Committee, Ethics Committee, Bilingualism Committee and the Health & Safety Committee.

Further information regarding the University's governance is available on
<http://www.bangor.ac.uk/about/management.php.en>

AN INTRODUCTION BY THE VICE-CHANCELLOR

I am delighted to present our Annual Report for 2010-11 which, as many of you will know, was my first year as Vice-Chancellor of Bangor University.

This report highlights some of our many achievements during the year, but I would also like to look forward to what will inevitably be another challenging year for the higher education sector.

Our success last year in attracting record numbers of applications from UK students has meant that we are well-positioned to face the uncertainties of the new fees regime, although the uncertain economic outlook introduces added complexity to the situation. Bangor has weathered such storms before however, and we are also playing our part in assisting to bring about an economic recovery by providing the skills, knowledge and research that businesses need so much.

Our increasing international links will bring tremendous benefits to our students, and make them valuable assets to any organisation once they graduate. These links will also benefit local companies as we can use our valuable international contacts to open new markets and opportunities for many of them. Indeed, I was delighted to accompany First Minister Carwyn Jones on a visit to China recently to develop links between Welsh universities and businesses, and our Chinese counterparts.

Bangor's focus on ensuring that our students have a great university experience will stand us in good stead in an increasingly competitive environment, but we are not standing still. The Pontio development will provide fantastic new facilities to students, staff and the community, and the completion of the site preparation work means that the main construction work can begin shortly.

As the Olympic year approaches we are also looking to further enhance our sports provision, and over the summer we were

delighted to welcome the Chinese weightlifting team to Bangor to train ahead of the London games. The team, which included a number of existing Olympic gold medal winners, were very impressed by our facilities and especially the warm welcome they received.

We have continued to develop strong partnerships with a number of organisations both at home and abroad, but those with Aberystwyth University and Grŵp Llandrillo-Menai in particular have increased in importance and depth over the year. We will see these grow to the mutual benefit of each organisation over the coming year, and they are already providing great benefits to students and businesses in north and mid-Wales.

Bangor University is a community in the very best sense of the word, and one of the main things I've found since I arrived here is the tremendous loyalty and enthusiasm shown towards the University by staff and students. As I look forward to my second year at Bangor, I know that these elements will be central to our future success.

Professor John G Hughes
Vice-Chancellor



A handwritten signature in white ink that reads "John Hughes". The signature is stylized, with a large, sweeping initial 'J'.

HIGHLIGHTS 10/11

Bangor is the best in Wales and among the top 15 universities in Britain for the excellence of its teaching according to the *Sunday Times University Guide* for 2012.

The School of Modern Languages was awarded two prestigious Early Career Fellowships by the Arts & Humanities Research Council, one of the bodies which funds UK research. The successful recipients, **Dr Helen Abbott** and **Dr Anna Saunders**, took up their Fellowships in January 2011.

Professor Bridget Emmett, PhD, FSB, Head of Site, Centre for Ecology & Hydrology (NERC), Bangor and Honorary Research Professor at Bangor University and **Professor Sian Hope, MPhil, MBCS**, Executive Director of Innovation and Professor of Computer Science, Director of RIVIC, Bangor University were announced as inaugural members of the Science Advisory Council for Wales (SACW).

This Council is an independent advisory group of distinguished experts which will report and provide advice to the Chief Scientific Adviser for Wales on a full range of science, technology, engineering and mathematics issues.

The Archbishop of Canterbury, Dr Rowan Williams, announced the award of the degree of Doctor of Music to **Professor John Harper**, a research professor in music at Bangor University. The award recognises Professor Harper's 'distinguished contribution to the development and appreciation of church music as a scholar, administrator, teacher and composer, and to a greater

understanding of the relationship between music and the liturgy of the church.'

Bangor University announced that the **Business School**, currently ranked as the leading institution in the UK for Accounting and Finance research, was to open a teaching centre in London. The centre's first teaching intake was in September 2011.

The **School of Social Sciences** has joined with six other universities across Wales to form the Welsh Centre for Crime and Social Justice (WCCSJ). Part-funded by the Higher Education Funding Council for Wales, the initiative brings together experts in criminology, social policy, law and psychology from Aberystwyth, Bangor, Cardiff, Glamorgan, Glyndŵr, Newport and Swansea, to enhance the scale and impact of crime related research in Wales.

The new **North and Mid Wales Centre of Teacher Education** was launched by the First Minister of Wales, Rt. Hon Carwyn Jones. Bangor and Aberystwyth Universities run the North and Mid-Wales Centre of Teacher Education, one of three national centres. The Centre trains Primary and Secondary teachers and works with schools across north and mid Wales. This collaboration is set in the context of a wider strategic partnership between Aberystwyth and Bangor Universities regarding Research and Enterprise.

The University's **Dementia Services Development Centre** is leading a major five year survey to assess how we age and to look at factors that could contribute to healthy ageing.

Left: Professor John Harper (right) received a Doctorate from the Archbishop of Canterbury, Dr Rowan Williams, at Lambeth Palace, with John Harris, who was also awarded a Doctorate.

Centre: Broadgate Tower in the City of London provides the base for The Business School's London teaching centre.

Below: First Minister, Carwyn Jones addresses the launch of the North and Mid Wales Centre of Teacher Education.





1 Ambassador Wood chats with Prof John G Hughes.

2 Prof John G Hughes with the Director of the Beijing Office, Luna Wu.

3 Elin Gwyn won the Drama Medal at the Urdd Eisteddfod.

4 A group of Bangor students in medieval costumes performing re-enactments at Beaumaris.

5 Some of the University's Marketing team at the awards ceremony.

6 Student re-enactments at Beaumaris.

The **Centre for Evidence Based Early Intervention** was launched by Huw Lewis AM, Deputy Minister for Children. The creation of the Centre is a natural extension of work conducted by the Incredible Years Cymru Centre over the last eight years. The new Centre will continue to help the Welsh Government shape services for children and families in the future.

Bangor University officially opened an office in Beijing, China. The launch was led by the University's Vice-Chancellor, **Professor John G Hughes** and included speeches by both the UK's Ambassador to China, Sebastian Wood CMG and Director An Yuxiang of the Chinese Services Centre for Scholarly Exchange (CSCSE).

Dr James Walmsley and **Professor Doug Godbold** of the **School of Environment, Natural Resources and Geography** have been awarded the prestigious Silviculture 2010 prize by the Institute of Chartered Foresters for their article 'Stump Harvesting for Bioenergy – A Review of the Environmental Impacts', published in the journal *Forestry* 83(1).

A team of Bangor students came second in FLUX, the largest business enterprise competition in UK higher education. Selected from among the teams participating in the

University's Enterprise by Design course, the six came first in the networking competition and first in the formal business presentation, and were placed second in the overall event.

Bangor University's **Marketing team** were shortlisted for the Euro RSCG Heist Marketing Department of the Year award. One of the Department's notable successes was a significant increase in its Home/EU undergraduate applications compared to other universities.

Tourists to Beaumaris over May Bank Holiday were amazed to find a medieval Lord, returning from the Crusades, attempting to reclaim his castle. Nearly 100 performers from **Bangor Students' Union** entertained the public in the castle and across the whole town, with re-enactments, archery, fire breathing, comedy, Morris dancing and traditional Welsh music.

Two of the Urdd Eisteddfod's major prizes were awarded to Bangor students. **Mared Emlyn**, who is studying a PhD in the harp and composition at the **School of Music** was awarded the Composer's Medal, and **Elin Gwyn**, who is studying a PhD in Welsh Literature, was awarded the Drama Medal.

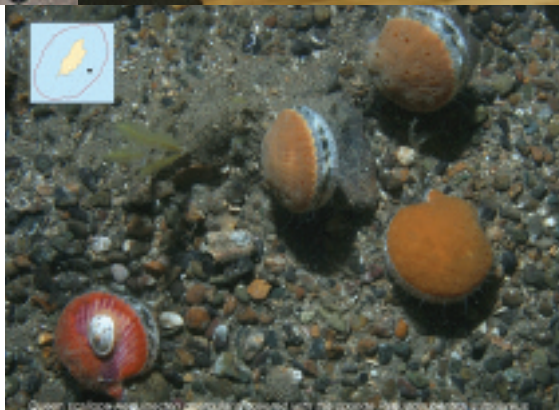


Above: Penrhyn Choir before their performance with conductor Owain Arwel Davies and accompanist, Olwen Jones.



Above right: Chinese weightlifter Long Qingquan at a practice session at the University.

Right: Queen scallops on the sea bed off the Isle of Man coast.



HIGHLIGHTS 10/11

Bangor University is a partner in a £20m programme to boost the green economy by helping business in west Wales and the Valleys develop new technologies to turn locally grown plant crops into commercial products. The ultimate aim is to establish Wales as a Bio-refining Centre of Excellence.

Staff at the **School of Ocean Sciences** were delighted at the news that the fishery producing Manx Queenies, the Isle of Man's queen scallops, has been awarded a sustainability certification under the Marine Stewardship Council programme. Experts in sustainable fisheries at the School have worked with the Isle of Man Government's Department of Environment Food and Agriculture since 2006, to advise them how to manage the fishery sustainably. Earlier in the year the Fishery was awarded the prestigious Billingsgate Sustainable Fisheries Award.

Four individuals connected with Bangor University featured in this year's Queen's Birthday Honours list. Former Bangor University Vice-Chancellor, **Professor Merfyn Jones** receives the CBE for services to Higher Education in Wales. **Professor Judy Hutchings** of the **School of Psychology** and the Incredible Years Wales Centre is to receive an OBE for her services to children and families.

The 'father of IVF', **Professor Robert**

Edwards, a Bangor graduate, is to be Knighted for services to Human Reproductive Biology. **Dr Dewi Wyn Roberts**, who serves on the University's Council, is to receive the MBE for his services to the community in north Wales.

Physical Oceanographers from the **School of Ocean Sciences** won three research grants from the Natural Environment Research Council, one of the bodies which funds UK research. Together, the research grants bring a million pounds worth of new research to the University.

Aberystwyth and Bangor Universities launched an ambitious programme to develop an innovation fund to support small businesses in mid and north Wales. The fund will be operated independently of the

Universities and will allow for the commercialisation of research, developed within the institutions and also from outside the Universities, in the mid and north Wales region. The venture capital fund will be financed from a variety of sources, and underlines the key relationship between the Universities and the communities they serve.

As one of the events to mark the centenary of the Main University Building, one of the oldest male voice choirs in Wales, the Penrhyn Choir, was invited to perform at a degree ceremony exactly one hundred years to the day since King George V opened the impressive building.

Bangor University's **Estates and Facilities Department** hosted the Chinese Olympic Weightlifting team, who stayed and trained at the University, for their 2011 pre Games training camp in preparation for the London 2012 Olympic Games.

Following an intensive and independent audit of its policies and procedures, the University successfully attained Level 4 of the prestigious Green Dragon Environmental Standard. As well as achieving this accolade, the University retained its "First Class Honours" degree in the annual People and Planet University Green League.



The **Business School** has been successful in winning a €2 million INTERREG bid to carry out a project on 'Green Innovation and Future Technologies'.

The collaboration involving Bangor University's **Business and Environment Schools**, Waterford Institute of Technology and University College Dublin, will establish a green innovation forum to help grow a sustainable green economy in Wales and Ireland.

Dr Paul Butler of the **School of Ocean Sciences** has been awarded the prestigious Lewis Penny Medal by the Quaternary Research Association for his research on marine climate history. The prize recognizes early career researchers who have made a significant contribution to our understanding of the changing climate and environment of the last 2 million years.

Several individuals attended the University Degree ceremonies to receive Honorary Fellowships. They were:

1 Bangor graduate and leading international investment strategist, **Paul Feeney**. **2** Award winning singer, **Duffy**. **3** **Rhys Jones MBE**, a renowned teacher, conductor, accompanist, compere and broadcaster. **4** Former Professor of Welsh at Bangor, **Professor Gwyn Thomas**. **5** Film and TV actor **Julian Lewis Jones**. **6** **John Herbert, Earl of Powis**, pictured with **Professor Helen Wilcox** of the School of English. The Earl of Powis is a former university lecturer and researcher and descendant of the Welsh-born poet, George Herbert. He is also a descendant of the first President of the University College of North Wales. **7** **Professor Laura McAllister**, Professor of Governance at Liverpool University and a leading authority on Welsh politics and Chair of Sport Wales.



TEACHING AND LEARNING

A STRATEGY FOR STUDENTS

Every four years, the Higher Education Funding Council for Wales (HEFCW), require universities to supply them with a new Learning and Teaching Strategy, and a Widening Access Strategy. For the first time, the University decided to integrate those two strategies into one document. The University also chose to work with Aberystwyth University to submit a joint document to HEFCW. Combining the Strategies, across the institutions and across learning and teaching and widening access, allowed the development of a strategic and holistic approach that maximised the opportunities for complementary and focussed activities.

Through consultation with staff and committees in each institution, with expert advice from the Higher Education Academy, and through a series of highly productive and positive meetings between lead staff from Aberystwyth and Bangor, a document was submitted to HEFCW. The feedback

praised the integration of the two strands and the successful cooperation and partnership between the two Universities.

For learning and teaching, the heart of the strategy lies in eight agreed Enhancement Projects that the two Universities will work on jointly over the next three years. These Enhancement Projects include: Assessment and Feedback, the Employability of Students, Welsh Medium Curriculum, Postgraduate Taught Programmes, Technology Enhanced Learning, Internationalisation of the Curriculum, Student Experience and Representation, and Recognising and Rewarding Teaching Excellence.

In creating the joint Aberystwyth and Bangor strategies, listening to each other's experiences, expertise and aspirations was educative and much has been gained by sharing. Therefore, each of the eight Enhancement Projects will now be championed and delivered by a small team

of Aberystwyth and Bangor staff and students. Students will play an active part in the Enhancement Projects. This will ensure that each project benefits from students' experience, insights and innovative ideas.

The Widening Access Strategy builds on recent strategic developments that are local (e.g. Reaching Wider Partnerships that work in communities), regional (CADARN), and national (Y Coleg Cymraeg Cenedlaethol). The joint Aberystwyth and Bangor strategy has eight elements: raising aspirations in admission to universities particularly from Communities First areas, supporting those from non-traditional HE backgrounds in their transition, retention and success at university, widening access to higher-level skills, integrating with the Equalities and Diversity Agenda, collaboration and partnership with key institutions to deliver Widening Access, supporting the strategy



INCREASING EMPLOYABILITY

A scheme designed to encourage students to take advantage of every opportunity that comes their way during their time at Bangor aims to improve graduates' performance in the job market.

The Bangor Employability Award (BEA) scheme, designed to enhance the immediate and longer-term career prospects of Bangor University students, works alongside the University's academic schools and Bangor Students' Union, and also with private, public and voluntary sector organisations, to offer accreditation for co-curricular and extra-curricular activities.

These activities, which can include volunteering, work experience, part-time work, clubs and societies or learning a new language, may not be formally recognised within students' academic degree programmes, but are valuable in the graduate jobs market.

The BEA is currently being developed within eight academic schools with institutional roll-out planned for 2012-13.

The Core Programme comprises workshops and online sessions to enhance students' career management skills, including CV-writing and interview skills, and their personal and professional development.

The scheme is designed to improve understanding of the long term potential of participating in extracurricular activities in order to develop students' employability. The BEA essentially provides a structure to enable students to build transferable skills through the recognition of activities they become involved with during their university life.

of Y Coleg Cymraeg Cenedlaethol, and articulating with the skills need of employers in the region.

These new strategies clearly define the University's focus and priorities for the next three years. Within the strategies there are clear targets, actions to be undertaken, and key performance indicators.

Students provide the focus for the strategy, and the aim is to create for them the highest quality experience that is not only first-class but also ever-improving, challenging and satisfying. This encompasses their academic experience at university as well as other stages including applying to university, transition and induction.

The new strategies aim to build on the University's reputation for caring for its students, both pastorally and academically, and increase that reputation in ways that are student-centred.





TEACHING AND LEARNING

LECTURES GO GLOBAL

Bangor students can now access multimedia lectures from all over the world thanks to new lecture capturing software.

The software, Panopto, which allows students to watch recorded lectures, is already being used to improve accessibility for Distance Learning courses.

Dr Rob Brook, a Senior Lecturer in Agriculture and Rural Development at the **School of Environment, Natural Resources and Geography**, said: "I record my lectures so that MSc Forestry Distance Learning students can also view the presentations.

"Many are living and working in developing countries and this software helps them feel a part of the University. These students can now view the lectures via Panopto or they are sent the presentations on CD, which we have been told work very well."

The Careers and Employability Service have also been using the software to improve access to their e-learning modules and online tutorials.

The software captures video, audio, PowerPoint and any activity on the computer screen and then encodes these various elements to make a recording that is streamed to students. It can also be used to make live broadcasts.

The University developed Panopto to improve the learning experience for all students, as it recognises that students have different learning styles. The software can be used as a learning resource by second language English students and those with learning difficulties.

MAKING A POSITIVE IMPACT

"It's been a long journey from leaving school aged 15 with no qualifications. Gaining the degree proves that it's never too late to learn and has given me the knowledge and confidence to be a more effective worker. I feel more assertive when advocating for clients... gaining the degree proves that I know my stuff."

So said one of the first part-time students to graduate with a foundation degree in Substance Misuse provided by the **School of Lifelong Learning**.

Substance misuse impacts negatively on society as a whole and north Wales is not without its problems. The Welsh Government's 'Working Together to Reduce Harm' 10 year substance misuse strategy highlighted the shortage of skilled workers in the drug and alcohol services sector and the need to ensure that this workforce is adequately trained.

The School of Lifelong Learning proactively took up the challenge through

a collaborative foundation degree programme developed between the School and CAIS - a major voluntary sector provider of drug and alcohol services in north Wales. The partnership brought the academic underpinning and flexible high quality learning opportunities together with the expertise and knowledge of the employer/practitioners. It has enabled people to increase their knowledge and skills and support the development of substance misuse related knowledge amongst the related workforce.

The School of Lifelong Learning has actively engaged with the University's strategic vision to work closely with and alongside employers. Providing a flexible degree pattern which fits in with the needs of both the employer and the learners and which responds to sector needs is proving a good model to take forward. The foundation degree will be developed further next year to a full BA Psychosocial Studies in Substance Use.



New Welsh medium lecturers:
Dr Myfanwy Davies, (Social Policy);
Enlli Haf Huws, (Chemistry);
Dr Manon Jones (Psychology);
Dr Paula Roberts (Environmental
Sciences); Dr Manon Mathias
(French) and (centre) Owain Llwyd
(Music). Absent from the
photograph are Dr Ruth Williams
(Nursing) and Dr Craig Owen
Jones (Music).



LEADING THE WAY IN WELSH

Nine new academic posts and five fully-funded PhD scholarships were awarded to Bangor University by Y Coleg Cymraeg Cenedlaethol, the new national institution for the development of Welsh medium education and research at universities in Wales.

The awards acknowledge the leading role that Bangor University is taking in collaboration with Y Coleg Cymraeg Cenedlaethol and enable the institution to expand its Welsh medium teaching in new subject areas from the current academic year. The Scholarships will also provide Welsh medium doctoral research opportunities for future academics.

Through this new investment, worth half a million pounds per annum over the next five years, the University will be able to develop its Welsh medium provision to a greater extent than ever before.

The lecturing posts have been awarded on the basis of successful bids outlining plans to develop Welsh medium provision across a wide range of subjects. As a result of the awards, students at Bangor and other institutions can now look forward to a number of new courses and Welsh medium developments in subjects as varied as French, Chemistry, Popular Music, Music for Film, Psychology, Social Policy, Nursing

and Environmental Studies.

In addition to teaching and developing Welsh medium provision in their specialist fields, the new post holders will contribute to the intellectual life of Wales through research, enabling collaborative work with other universities and promoting the use of the language within their subject area as well as within the institution.

PhD scholarship holders studying **Accounting, Psychology, Welsh and Technology, Social Policy and Health Sciences**, will also gradually undertake Welsh medium teaching duties.



RESEARCH

HIGH-FLYING GEESE

Research by **Dr Charles Bishop** and **Dr Lucy Hawkes**, from the **School of Biological Sciences**, and a large international team of researchers, has been reported in the prestigious American scientific journal: *Proceedings of the National Academy of Sciences* (PNAS). The team showed that bar-headed geese (*Anser indicus*) can fly up to 6,000m in only 8 hours while passing over the Himalayan mountain range. A similarly intense climb over the mountains could kill a human without lengthy acclimatisation.

The geese make the journey on their annual spring migration from India to

Central Asia. Having attached GPS satellite tags to a number of birds in India and Mongolia, the birds were tracked hourly during their migration. The study showed that the geese can make the long climb in altitude in a single flight and that, surprisingly, rather than waiting for potentially favourable and predictable wind conditions to help carry them up and over the Himalaya, as had been thought previously, they wait for the winds to die down, and then make the climb over the mountains in the relative calm and peace of the night and early morning.

"We think the geese may be essentially risk

averse," said Dr Charles Bishop "with the calmer winds at night offering an extra degree of safety and helping to avoid storms. The birds may also find it easier to keep together and to fly in formation."

The earlier flight times in the cooler, denser, morning air could help the geese to avoid the heat load of flying during the hottest time of the day whilst performing their intense workout. Denser air will also improve the lift generated by the wings and reduce the amount of energy used in flying, while improving the amount of oxygen available to the birds.



KEEP THE SWEET AS A TREAT

Research by **Dr Hans-Peter Kubis** of the **School of Sport, Health and Exercise Sciences** has shown that overweight and obese people have a dulled sensitivity to soft drinks accompanied by an increased subconscious liking of sweet tastes. The research found that people of normal weight had a dulled sensitivity to the taste sensation of sweet tastes, accompanied by an increased preference for sweet tastes as a result of drinking two sugary drinks a day for just four weeks.

While this news is unwelcome to those who have a sweet tooth, there are also far more worrying and serious health implications from these findings. As the sweet 'treat' becomes less rewarding, so we tend to look for more sweet food or drink and a vicious circle of eating sweet and calorie laden food is established.

The worrying fact is that the research isn't based on people drinking the worst examples of sugar-laden carbonated drinks, but is based on consuming levels of sugar found in fruit cordial or 'squash' and natural fruit juice as well as carbonated drinks. It seems that all these drinks are sweet enough to change our perception of taste.

"This has serious implications for public health. This research shows how little sweet food stuffs are required to actually change your taste perceptions and how powerful sweet tasting products are," explains Dr Hans-Peter Kubis.

The research which was published in *Appetite*, hit the front page of the *Daily Express* and was widely reported elsewhere.

SNIFFING THE AIR FOR SAFETY

Scientists at the **School of Chemistry** are working on novel sensor technology. The European consortium called Nanosecure, consists of 26 partners, both academic and industrial. They are working to develop a device which aims to detect airborne particles of explosives, narcotics, chemical and biological agents.

The technology will also be able to decontaminate the air from chemical and bio agents, should some be detected, by integrating with a building's air-conditioning units.

The School of Chemistry is the lead institution in the development of the explosives sensor that will be used in the detection unit. Scientists at Bangor are also helping to create the catalytic surfaces which will be used to decontaminate the air. The idea is to integrate the system with existing security measures at airports.

"This is a very exciting area of research to be in at the moment," explained **Chris Gwenin**, from the School of Chemistry. "International security alerts have shown a high level of innovation in the creation of terrorist explosive devices.

With the use of commercial explosive such as PETN being found in such devices it is clear that detection technology is urgently needed to ensure public safety as well as helping to avoid even more airport checks and further increases in passenger waiting times."

Bangor University's approach to this technology is based around the use of enzymes which detect different substances such as explosives.

WHAT'S THE SCORE?

Music manuscripts and printed editions dating from the Renaissance period – considered by many to be the 'Golden Age' of vocal polyphony, are the subject of a major three-year project. The 15th and 16th centuries have bequeathed us an unrivalled wealth of musical sources, ranging from the enormous and highly decorated courtly and ecclesiastical choirbooks to small and unadorned copies of music for everyday use. The period represents the peak in production of musical manuscripts, combining musical notation with the written word and sometimes lavish illumination, a visual complexity hardly found in any other type of source.

Professor Thomas Schmidt-Beste and **Dr Christian Leitmeir** at the **School of Music** are sharing their expertise with art historians and manuscript scholars at the Warburg Institute (School of Advanced Study, University of London), to study the production, layout and reading of these musical scores from the period between 1480-1530. Working with the Department of Digital Humanities (DDH) at King's College London, they are creating a major digital library and resource and organising

a series of conferences and publications, workshops, concerts and CD/DVD recordings with specialist ensemble 'Capella Pratensis'. The wide variety of layout has never been studied systematically and has wide-ranging implications for the reading, understanding

and performance of the music, then as now.

The grant of nearly £850,000 by the Arts and Humanities Research Council is the biggest ever grant awarded by the Council to a single project in the field of music, underlining its significance to the field.



Illuminated music manuscript from the Habsburg-Burgundian Court, early 16th century; ©Mechelen, Archief en Stadsbibliotheek

The Digital Image Archive of Medieval Music (DIAMM)

WHY CATFISH ARE COPYCATS

A group of armoured catfish abundant in small rivers and streams across South America are far more diverse and complex than previously suspected.

A new multidisciplinary study, reported in a paper in *Nature* has enabled evolutionary biologists at the **School of Biological Sciences** to establish for the first time that many *Corydoras catfish* that live together in the same rivers actually mimic each other's colour patterns. Communities of catfish consist of species that are not genetically closely related but have, over a long time period, adopted one another's colour patterns thereby communicating their unpalatability to predators and increasing their survival prospects.

However, the study also draws the conclusion that, intriguing as the shared

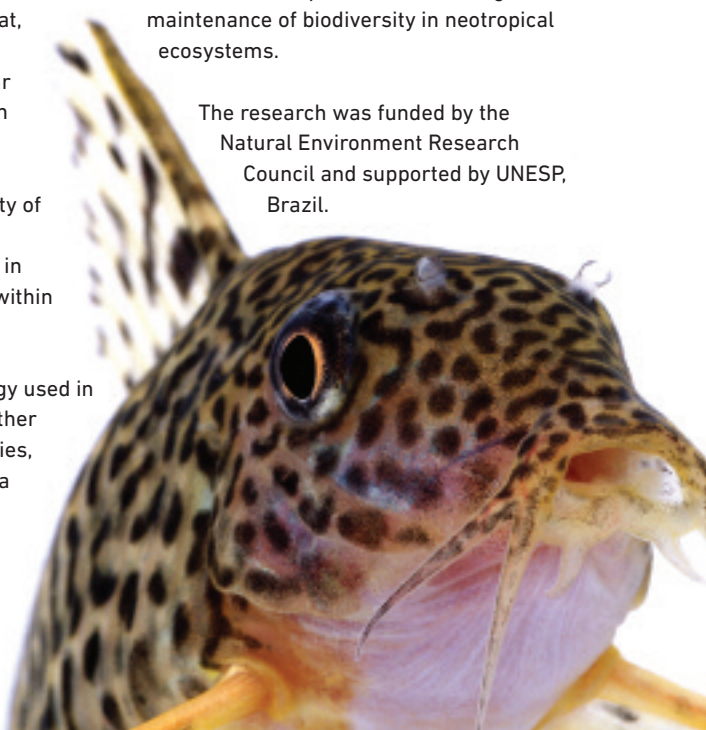
colour patterns may be, it is not this evolutionary strategy that is the most important in terms of the ultimate survival and stability of mixed communities.

The research has established that, despite inhabiting the same habitat, adopting the same colour patterns and foraging together in shoals, these species do not compete for the same food. The scientists conclude that the ability of co-existing species to partition resources is the crucial element in maintaining long-term stability within communities.

The interdisciplinary methodology used in the research can be applied to other communities of co-existing species, while *Corydoras catfish* provide a

new model system for the study of mimicry, competition and mutualism. These findings may bring us closer to an understanding of the critical factors and mechanisms responsible for the origin and maintenance of biodiversity in neotropical ecosystems.

The research was funded by the Natural Environment Research Council and supported by UNESP, Brazil.



AGEING WELL

Older people are living longer and form a greater proportion of the population than ever before. In response, a major five-year research project, run by the **Dementia Services Development Centre** and funded by the Economic & Social Research Council and the Higher Education Funding Council for Wales, is assessing how we age and looking at factors that could contribute to healthy ageing.

Each generation differs from those that went before, having had different life experiences. Based on their experiences, the approaches of today's ageing population to retirement, leisure, health, activity, nutrition and exercise is different to those of their parents' generation. They have different ideas regarding how care and support needs should be met, influenced perhaps by changes in families and in society.

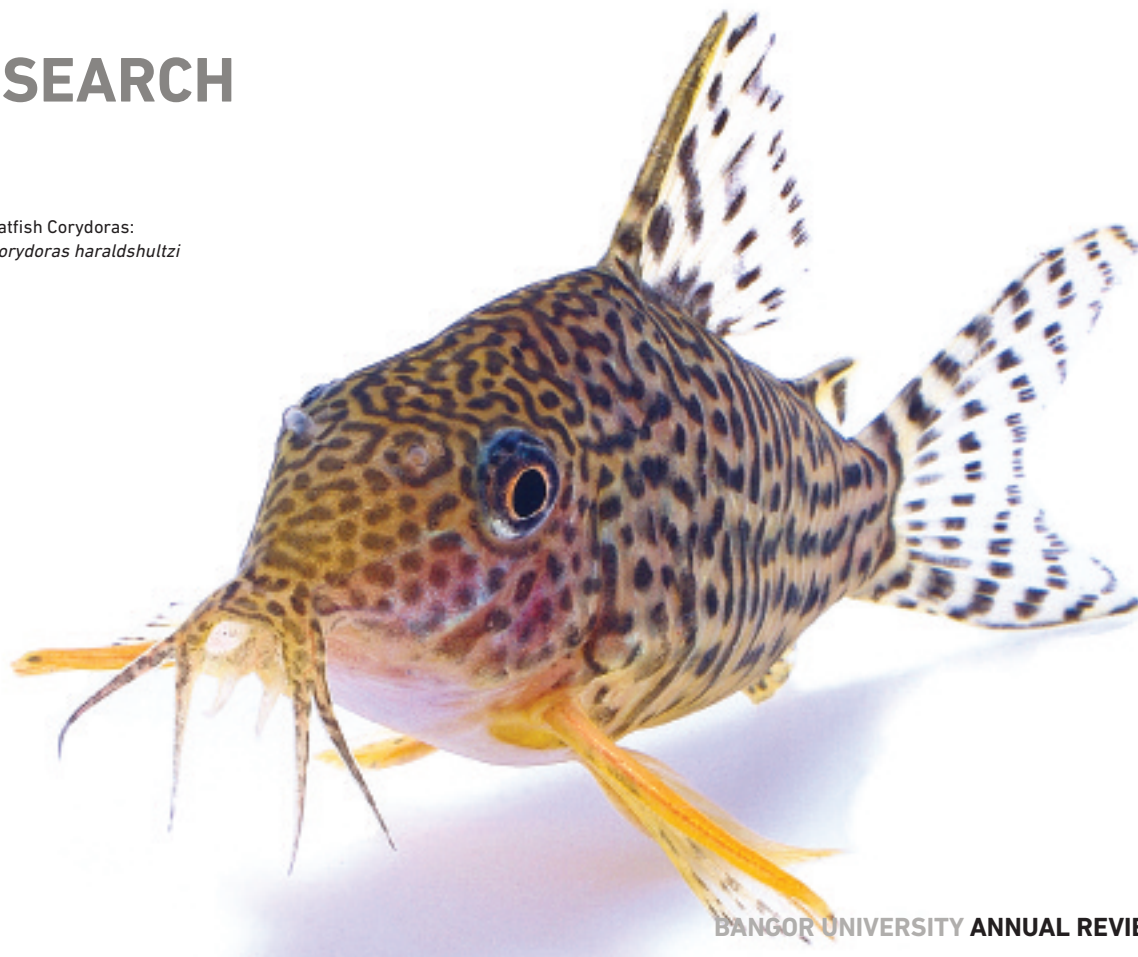


"How we age is not just governed by our health or our genes," says **Prof Bob Woods**, who is leading the research. "Governments, researchers and those who provide care are increasingly recognising the importance of factors such as people's social situation, the place they live, their resilience in the face of illness, even whether or not they are bilingual."

The survey draws all these factors together, evaluating their function at individual, community and societal levels. This should reveal the extent to which these elements reduce the risk of changes in memory and thinking, and perhaps dementia, in later life.

RESEARCH

Catfish *Corydoras*:
Corydoras haraldshultzi





COMMUNITY

COASTING TOWARDS A SUSTAINABLE FUTURE

SEACAMS or 'Sustainable Expansion of the Applied Coastal and Marine Sectors' brings University expertise to the aid of the Marine and Coastal sector in Wales in order to promote innovation and expand research. Its aim is to grow the economy of the Marine Sector by increasing the number of jobs, attracting investment to the sector and helping to develop new businesses. This will be done by forging links and collaborating with Welsh businesses to explore business opportunities in the marine sector.

"The challenge of climate change is both environmental and socio-economic. This provides enormous opportunities for research and commercial activity in the environmental sector," said **Professor Colin Jago**, Director of SEACAMS.

The First Minister of Wales, **Carwyn Jones**, officially launched the SEACAMS project on board the **RV Prince Madog** in Cardiff Bay in June. "Better links between our universities and the private sector will allow them to

fully exploit their commercial potential and make the best of the opportunities available. I want to see Wales taking a lead in these emerging areas, such as renewable energy," he said.

A number of Welsh businesses have already approached SEACAMS with ideas for collaborative work. The project offers assistance to Welsh businesses to work collaboratively and access specialised purpose-built new laboratories and equipment, including access to small boats for inshore work and to the RV Prince Madog for offshore work.

New laboratories for the SEACAMS project are also being built on the **School of Ocean Sciences** site.

The SEACAMS project is run jointly by the Universities of Bangor, Swansea and Aberystwyth and is part-funded from the European Regional Development Fund through the Welsh European Funding Office, part of the Welsh Government.

Above left: Professor Colin Jago, First Minister Carwyn Jones and Dr Gay Mitchelson-Jacob, Seacams Project Manager, at the Seacams launch in Cardiff.

Above: Dr Jasmine Sharp, SEACAMS Industrial Research Officer, discussing the impacts of offshore renewable schemes with Alex Herbert from Low Carbon Developers.



'FAIR GAME' FOR FOOD - HELPING MADAGASCAR MANAGE HUNTING

Many wild animal species in Madagascar are hunted and their sale and consumption provides communities with an important source of income and food. Although the hunting of so called 'bushmeat' species, such as the world famous lemurs, is illegal as it threatens their survival, other species are considered 'game' species and may be

legally exploited for food. A project led by **Dr Julia Jones** of the **School of Environment, Natural Resources and Geography** with Madagasikara Voakajy, a Malagasy conservation organisation, has been working with Malagasy communities to reduce illegal hunting and support the sustainable use of game species.

The team found that the common tenrec, an extraordinary creature like a small hedgehog, appears to be declining rapidly due to intensive hunting. The extent of the decline was surprising to the researchers as the species is one of the most reproductive on the planet, giving birth to litters of up to 30 young, theoretically making it a sustainable food source. Villagers are concerned about the findings and have worked with the project to produce and distribute radio programmes, and posters to raise awareness of the decline and the likely cause - an increase in hunting of females with dependant young - a practice which was unheard of in the past when traditional management of resources was stronger.

The £300,000 project is funded by the UK government's Darwin Initiative which helps countries rich in biodiversity but poor in capacity and resources to conserve their natural heritage.



Tenrecs, small insectivores endemic to Madagascar, are widely eaten across the country.

© Madagasikara Voakajy



Cynthia Raveloson, a member of the bushmeat team, carrying out field work in western Madagascar about the availability of tenrec.

© Madagasikara Voakajy



Emily Tyler assists a pupil at Ysgol Cae Top using the Headsprout programme.

READING SKILLS SPROUT IN SCHOOLS

Over recent years, the **School of Psychology** has been working with schools in Gwynedd to help improve children's reading skills through innovative computer-based reading programmes called 'Headsprout'.

The programmes are based on research findings and include those elements identified as important for successfully learning to read. They provide individualised teaching that can be delivered with minimal training. With the current concern about illiteracy rates in Wales and the UK, research around the success of the reading programmes could provide useful information about a viable solution to ensure all children achieve success in reading.

Collaborating with local schools, the University has been bringing this innovative technology to children across

north Wales. Small projects investigating the programmes have been running for a number of years, however PhD funding through the School of Psychology has allowed this research to be expanded.

Dr Carl Hughes, Michael Beverley and PhD student **Emily Tyler** are currently investigating how Headsprout reading programmes can be used both with children in mainstream schools and children with learning disabilities in special needs schools.

Students from the School of Psychology have been helping to deliver the programmes in local schools in Bangor this year, going into the schools each day to work with the children enrolled in the programmes. Initial results suggest that many can benefit from Headsprout reading programmes, and the effect on children's reading skills will be investigated further

with more children over the next few years.

Mrs Donna Rees-Roberts, Headteacher of Ysgol Hafod Lon, Y Ffôr, said of the ongoing projects, "Headsprout is exciting and innovative and this research with the University has changed the way we teach children to read. The children love the characters and we love the progress."



Cerys Matthews' performance was a highlight of Pontio's programme.

PONTIO IS SET TO TRANSFORM BANGOR

Bangor is undergoing a major transformation as a result of the Pontio Arts & Innovation Centre development.

During the year, enabling works have been completed on the site between the Main Arts building and Deiniol Road, ensuring that the area is cleared and ready for the next stage of construction.

The arts scene in north Wales is already being transformed through Pontio's 'Stepping Stones' project. This dynamic programme of events, exhibitions and outreach activities, supported by the Arts Council of Wales, is designed to help nurture a loyal audience and build links between the University and the local community.

Already Pontio is firmly building on Bangor University's reputation as a creative and innovative force.

Bangor University's **Vice-Chancellor, John G Hughes** said:

"Pontio is to be congratulated for its arts programme and for designing ambitious outreach projects in science and innovation."

Pontio will house a design and innovation suite, multimedia teaching and learning facilities, a new home for the Students' Union, social learning spaces, a range of performance spaces including a theatre and cinema, an outdoor amphitheatre, restaurants and parkland.

It will be a world-class centre for innovation in science, technology and the creative industries, will enable wide-ranging research, and will be a cultural beacon for Wales and the Welsh language.

COMMUNITY



Team members L - R: Becky Hughes, Ceri Evans, Gary Clifford and Prof Dermot Cahill, Project Leader & Head of School of Law/Deputy Head, College of Business, Social Science & Law.

WINNING IN TENDERING

Bangor University is helping Welsh and Irish small and medium sized companies to win public sector tenders.

A strategic project, "Winning in Tendering" (WIT), led by the **Law School's Institute for Competition & Procurement Studies**, is helping the Coalition Government to achieve one of its key ambitions – to ensure that 25 per cent of all government contracts are awarded to small and medium sized organisations (SMEs).

A major feature of the project includes carrying out detailed research into the impact of the 2009 European Union Procurement Law Remedies Directive. This draws on experience in the area of European Procurement Law that lies in **Professor Dermot Cahill's** team. WIT also delivers a highly regarded and unique Tender Review Service to ensure suppliers learn vital lessons from previous tenders they have submitted. This gives them a

better chance of being successful next time around.

WIT is a €3.7m international project part-funded by the European Regional Development Fund through the Ireland Wales Programme (INTERREG 4A) set to transform the public tendering experience of smaller organisations in the Ireland/Wales region. It builds on previous work carried out by the Law School such as the 2009 Barriers to Procurement Opportunity Report (commissioned by the Welsh Government), which is being actively implemented as part of Welsh Government policy.

The project's influence and esteem is reflected in the support it has received from major stakeholders, such as the Federation of Small Businesses, the Confederation of British Industry, Value Wales Procurement, Wales TUC and the Wales Council for Voluntary Action.



SOUTHERN & EASTERN
Regional Development
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Interreg 4A Development
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