

February 2011

## Launch of marine research network

A new research network which will bring together world-leading experts to tackle some of the key challenges facing the marine environment now and in the future has been launched.

Reinforcing both the University's and the region's reputation as a leader in marine science and engineering, the marineNewcastle network was officially launched by the Lord Lieutenant of Tyne and Wear, Mr. Nigel Sherlock Esq

Speaking at the event, the Vice-Chancellor, Professor Chris Brink, said: "There are big challenges facing the world today - global challenges that can no longer be solved in a piecemeal fashion.

"One of those challenges is ensuring a sustainable future and I particularly welcome the launch of marineNewcastle."

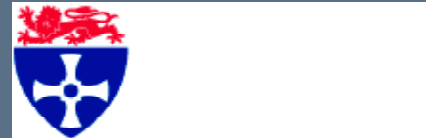
Professor Tony Clare, Newcastle University's marineNewcastle co-ordinator added: "By bringing together world-class scientists from a range of research disciplines, our goal is to find ways in which we can continue to use the seas as a source of food, energy and for transport, but use them responsibly and sustainably so we protect them now and for the future.

"The North East's marine connection dates back to the middle ages when the Tyne became one of the main trading rivers in the country. The subsequent growth of the shipbuilding industry served to reinforce the North East's reputation as a major centre of maritime activity. Newcastle University, with its wide-ranging research interests in many aspects of marine science and technology and its research collaborations around the globe is uniquely placed to position the North East at the heart of the maritime world once again."

During the visit to Newcastle University, the Lord Lieutenant saw some of the research that is currently going on at Newcastle, such as the new state-of-the-art research vessel which has been designed by staff and students and is being built by North East ship builders Alnmaritec.

Professor Richard Birmingham, Head of the School of Marine Science and Technology at Newcastle University, added: "In the fields of marine science and technology, Newcastle University is one of the premier academic institutions in the world delivering research and educational programmes of significant value to the marine sector regionally, nationally and internationally. The marineNewcastle launch event was an opportunity to showcase Newcastle University's marine research and strengthen the links with the resurgent marine sector in the North East of England."





## Deep heat for the North

Engineers at Newcastle University begun an ambitious project to drill 2,000m under the heart of the city in search of renewable energy.

In a landmark project that will reach new depths in an attempt to harness geothermal heat from the earth, the Newcastle team hope to eventually pump out water at a temperature of around 80 degrees centigrade.

Drilling deep under the planned 24-acre Science Central – the site of the former Scottish and Newcastle Breweries – the team believe that boreholes here will prove capable of supplying an everlasting source of low-carbon energy hot enough to heat any domestic or commercial central heating system.

Funded by the Newcastle Science City Partnership and the Department of Energy and Climate Change (DECC), the £900,000 project is being led by Professor Paul Younger, Director of the University's Newcastle Institute for Research on Sustainability, and involves experts from both Newcastle and Durham universities.

"Our aim is to rise to the challenge of putting a novel form of deep geothermal energy at the very heart of city centre regeneration," explains Professor Younger.

"It's an incredibly exciting project. If we're right and we pump up water at such elevated temperatures, it would mean a fully renewable energy supply for a large part of the city centre, massively reducing our reliance on fossil fuels and reinforcing Newcastle's position as the UK's most sustainable city – an accolade which the Toon has now won two years running. And unlike other renewables such as wind and solar, geothermal energy is available at all times, independent of the weather."

The project will be the first to take place on the planned Science Central site which will become a hub for University initiatives tackling the great societal challenge of sustainability, reinforcing Newcastle's standing as a city of science and reflecting the University's position as a world-leader in sustainable science research.

The project is expected to last six months and the team hope to be able to pump out the first hot water in early June. After further engineering, the resulting heat could eventually be used to supply not only the Science Central site but also part of the city centre and there is already interest from managers at the Eldon Square Shopping Centre which houses over 140 retail outlets.

Phil Steele, General Manager of Eldon Square, said: "We spend approximately £1.7 million per annum on energy and at present this demand is all met from fossil-fuel sources. We can now look forward optimistically to using deep geothermal energy to supply part or all of our future energy needs and we look forward to working with Newcastle University to develop this major scientific enterprise for the city."

This is the second time in 12 months the Newcastle team has explored the region for geothermal energy. Last year they pumped up water at a temperature of 40 degrees centigrade from a 1,000m twin-borehole at Eastgate, in Weardale, County Durham.

If today's geothermal project is successful it will pave the way for similar projects across the country where it is known similar deep fault lines exist such as Carlisle and the Craven Faults in West Yorkshire and Lancashire.

Further information is available from the BBC at: <http://www.bbc.co.uk/news/uk-england-tyne-12547313>





## NFU Mutual Charitable Trust Centenary Award

The NFU Mutual is offering its Centenary Award for postgraduate students in Agriculture. The award gives annual bursaries to pay 75% of course fees for selected postgraduate students in agriculture. This is a long term scheme and is open to students from the UK who have gained, or are expected to gain a 2.1 or above in agriculture or a closely related degree, and have been accepted on a Masters or PhD course in agriculture in the UK.

The closing date for applications is 30 April 2011. If you have any questions please either visit [www.nfumutual.co.uk](http://www.nfumutual.co.uk) or call Gemma Johnson on 01789 202 173

## School of Civil Engineering & Geosciences wins British Council UK-US new partnership fund



Researchers in CeG have been successful in obtaining the prestigious British Council UK-US New Partnership Fund under the Prime Minister's Initiative (PMI2) to develop collaborative research activities with Universities in the USA. PMI2 is a five-year strategy which aims to secure the UK's position as a leader in international education and sustain the growth of UK international education delivered in the UK and overseas.

The competition was stiff with 22 projects finally funded out of 230 applicants (prioritised by a mix of both internal and external academic reviewers in the UK and the US; the final selection was made by an independent panel consisting of senior members of staff from universities and appropriate sector bodies from both countries). Over the next 12 months, in association with Pennsylvania State University (Meteorology and Atmospheric Sciences) in the US, the pump priming activities will focus on developing our complementary research strengths, enhancing common visions of research led teaching and networking for urban sustainability. The activities will be mainly embracing the important urban interactions of land transport and natural vegetation in the foreseeable future. Newcastle University is the lead UK partner (Prof Margaret Bell as Principal Investigator with Key researchers Drs Abhishek Tiwary and Anil Namdeo). The project also involves Centre for Atmospheric Sciences, IIT Delhi as the third country partner with their contributions to the collaborative research on Urban Heat Island mitigation.

## Chair in Fluid Dynamics appointed

The School of Chemical Engineering and Advanced Materials is pleased to announce the appointment of Dr Nilanjan Chakraborty to the position of Chair in Fluid Dynamics. Dr Chakraborty, who is currently a senior lecturer at the University of Liverpool, is expected to join our School in July where he will head the Multiphase Flow and Thermal Systems research group.

Dr Chakraborty's research interests include DNS of turbulent combustion, LES combustion modelling, melting/solidification related heat transfer problems in classical manufacturing and laser aided manufacturing applications. In 2007 he was awarded the prestigious Hinshelwood Prize by the British Section of the Combustion Institute for his meritorious contribution to combustion science.

We look forward to welcoming Dr Chakraborty in the summer.

See our  
new style  
website  
<http://www.ncl.ac.uk/>



## ACTION 2011

An opportunity for postgraduate researchers and research staff at Newcastle University to explore a sustainability challenge, make your research make a difference and compete for a prize of £10,000.

ACTION 2011 enables you to get away from your desk, collaborate and think like an entrepreneur in order to develop a commercial approach to your research.

What can participants expect?

Working in teams, researchers will identify a sustainability challenge and, with training and support, produce a prototype, video, model or other visual form to showcase their solution. They will then use this to compete for the prize money, which will be presented at a showcase event towards the end of 2011.

The programme is designed to help participants enhance the outcomes of their research. Academic members of staff are welcome and encouraged to mentor and/or support teams.

## Research Fellowship on Brain-Machine Interface Systems

This is an opportunity to join an exciting project on brain-machine interface systems design - either post PhD or with industrial experiences, in the microelectronics systems design group. The post is aimed at developing ultra-high throughput systems for real-time neuronal-silicon interfacing, analysis and visualization. The project requires a close collaboration with scientists from Institute of Neuroscience (IoN).

The successful candidate will have significant experience of FPGA or GPU programming, and a background in signal processing algorithm design and implementation. Also, qualifications include publication record, industry-related experience and a strong capacity for innovation would be expected.

For further details and information on how to apply, please visit our web site at [http://www.staff.ncl.ac.uk/terrence.mak/Terrences\\_Web/Vacancies.html](http://www.staff.ncl.ac.uk/terrence.mak/Terrences_Web/Vacancies.html) or send your CV/application to Dr. Terrence Mak ([terrence.mak@ncl.ac.uk](mailto:terrence.mak@ncl.ac.uk)).

## Chinese New Year in Newcastle



Throng of people braved the heavy rain to see in the Year of the Rabbit in Newcastle's China Town on 6th February 2011. Read the full article at <http://www.chroniclelive.co.uk/north-east-news/evening-chronicle-news/2011/02/07/chinese-new-year-spectacular-for-toon-72703-28127265/#ixzz1EbsyfYzQ>

## Opening of the Newcastle Cancer Centre Medicinal Chemistry Laboratory

The formal opening of the laboratory was conducted by Dr Andy Takle, Director of Translational Research at Cancer Research UK, who highlighted the importance of medicinal chemistry as an integral component of the anticancer drug discovery and development process. In addition to providing valuable additional space for anticancer medicinal chemistry, the new laboratory will foster collaboration with the pharmaceutical industry, and reflects the importance of interactions between the School of Chemistry and the Medical faculty within the University. A gallery of photographs of the reception is available at; <http://www.ncl.ac.uk/chemistry/galleries/cancerlab/>





## Research student wins Tyne & Wear Young Persons Lecture Competition

The School of Mechanical & Systems Engineering postgraduate student James Lord took part in a Young Persons Lecture Competition, hosted by the Tyne & Wear Materials Society, as part of a nationwide competition sponsored by the Institute of Materials, Minerals and Mining. The competition is open to people aged under 28 working in academia or industry and requires a 15 minute presentation on a topic related to materials.

James won the Tyne & Wear event with a talk titled "Tribological Analysis of Retrieved Metal-on-Metal Hip Prostheses". As well as a £100 prize, he will now go on to the regional final to compete against other winners from the North-East.

## Organic milk is better for you - whatever the weather



Wetter, cooler summers can have a detrimental effect on the milk we drink, according to new research.

Researchers found milk collected during a particularly poor UK summer and the following winter had significantly higher saturated fat content and far less beneficial fatty acids than in a more 'normal' year. But they also discovered that organic supermarket milk showed higher levels of nutritionally beneficial fatty acids compared with 'ordinary' milk, regardless of the time of year or weather conditions.

The study, which is published in this month's Journal of Dairy Science (January 2011), follows previous research which looked at the difference between organic and conventional milk at its source – on the farms. "We wanted to check if what we found on farms also applies

to milk available in the shops," said Gillian Butler, who led the study. "Surprisingly, the differences between organic and conventional milk were even more marked." There was greater consistency between organic suppliers, where the conventional milk brands were of variable quality, with many showing evidence of intensively reared cows. Low levels of omega-3 and polyunsaturated fatty acids were discovered in some of these brands, which are indicative of a diet low in fresh grass. These samples also showed evidence of the cows being supplemented with a saturated fat product derived from palm oil.

Mrs Butler puts the differences down to a lower reliance on grazing and fertiliser suppressing clover on conventional farms. In contrast, organic dairying standards prescribe a reliance on forage, especially grazing, and tend to encourage swards of red and white clover, which have been shown to alter the fatty acid intake and composition of milk.

There was a considerable difference between the milk bought in the first sampling period (July 2006 and January 2007) and corresponding times a year later. The second set of samples, following a particularly wet summer in 2007, was higher in saturated fat and lower in beneficial fatty acids.

"These conditions may affect the cows' behaviour, reducing grazing intake and milk output," said Mrs Butler. "Farmers also often increase supplementation with concentrated feeds or conserved forage to maintain milk yields in these conditions.

"If these weather patterns continue, both forage and dairy management will have to adapt to maintain current milk quality," said Mrs Butler. "The higher levels of beneficial fats in organic milk would more than compensate for the depression brought about by relatively poor weather conditions in the wet year."

The researchers, who are part of the University's Nafferton Ecological Farming Group and its Human Nutrition Centre, looked at the quality of milk in supermarkets across North East England at varying times of year over a two-year period.



## sport @ Newcastle

# Queens Win 7-A-Side Football Tournament

Queens of everything became the Kings of Intra Mural 7-a-side football after beating out fierce competition and winning the Term 1 Tournament.

Teams from across the university came head to head as the last eight teams battled it out at Longbenton to see who would be crowned champions. After finishing in top 4 of the league stages and winning a tough quarter final, Cheryl Cole, Desi Milan, Freeman's B and Queens of Everything reached the semi-finals of the tournament.

The first semi was between Queens and Freeman's. This was a physical encounter between 2 teams who cruised through the league stages. A Mark Turner strike was the difference between the teams and Queens progressed to the final. The second semi-final featured Desi Milan and Cheryl Cole. This was also a very tight game with both defences proving hard to beat. However, a late winner saw Cheryl Cole maintaining their impressive league form and reach the final to face Queens.

The final was set to be quite a clash as unsuspecting Cheryl Cole seemed determined to cause an upset. However Queens, who won this tournament last year played the better football and won 1-0 to claim their second Intra Mural 7-a-side football title. The term 2 tournament commenced on Wednesday 9 Feb with 16 teams battling for the title.



## Red Nose Day

The Sports Centre will be hosting a variety of events for the 2011 Red Nose Day



### Some forthcoming events:

10th January 2011 - 18th March 2011 - Beat the Bulge Fitness Challenge

23rd March 2011 - Student Golf Tournament

30th March 2011 - Stan Calvert Cup Day - Annual varsity clash between Newcastle and Northumbria Universities

18th April 2011 - 3rd June 2011 - Challenge the Boat Club