



## Newsletter 7 March 2017

**Welcome to the seventh newsletter of the Sêr Cymru National Research Network for Low Carbon, Energy and Environment (NRN-LCEE).** Here you can read about our recent events, a few research highlights and funding opportunities. There is a more in-depth report on the activities of one of our Fellows working in the Geo-Carb-Cymru Cluster.

We are pleased to announce there have been 3 more awards from our Research Development Fund. We also introduce 7 new Fellows - funded through the Ser Cymru II Programme and partly by us - who have recently joined some of our Clusters.

Over the last few months there have been two visits to Brussels, one with our Fellows and the second with the AquaWales and Cleaner Cows Clusters. New connections were established at these meetings and the visits clearly highlighted the great variety of opportunities there are for our researcher within the European funding framework.

You can also read more about the latest events including a second event organised in partnership with the [Royal Society of Biology](#). During this evening, a panel of food scientists showed what they thought would be a menu we could be eating in 50 years.

Finally, we highlight some of the recent research outputs of our Fellows and students. I hope you enjoy reading this newsletter and through it learn more about our activities.

**Prof. David Thomas** ([d.thomas@bangor.ac.uk](mailto:d.thomas@bangor.ac.uk))

**Director of the Sêr Cymru National Research Network for Low Carbon, Energy and Environment**

## Introducing our Clusters: Geo-Carb-Cymru

(Reports on other NRN-LCEE Clusters will be included in future newsletters)

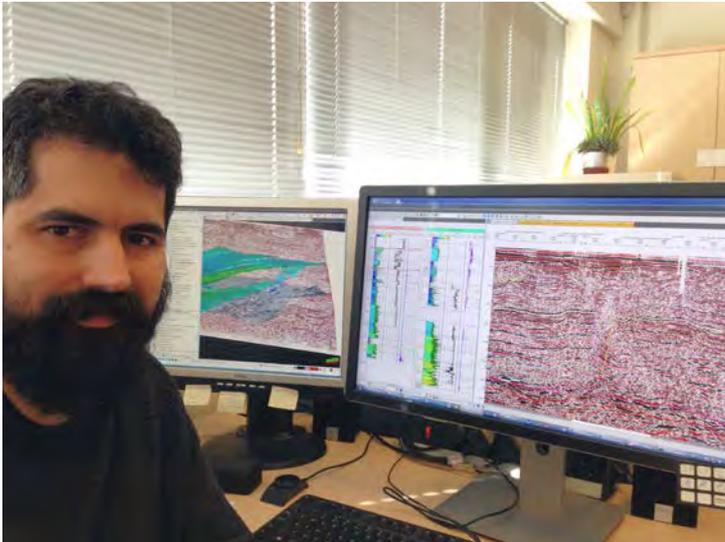
[Geo-Carb-Cymru](#) is a collaboration between Aberystwyth and Cardiff Universities, the British Geological Survey - Wales, the University of Leeds and the Big Pit National Coal Museum. Led by [Dr Andy Mitchell](#) from Aberystwyth University, the Cluster brings together expertise in microbiology, geology, geophysics, biochemistry and engineering. Below, Sêr Cymru Fellow Dr Davide Gamboa describes his research in more detail.

Geo-Carb-Cymru research aims to characterise and enhance opportunities for geological carbon storage (GCS) and groundsource heating systems in Wales. The Cluster assesses the feasibility, constraints and capacity of potential GCS reservoirs in Wales, and is investigating the physical, chemical and microbiological controls on sub-surface CO<sub>2</sub>. The Cluster is also researching into the potential for microbially generated heat to provide low carbon energy via large scale groundsource heat pumps.

## Introducing our Researchers: Davide Gamboa

(Reports on other NRN-LCEE Fellows and PhD students will be included in future newsletters).

Dr Davide Gamboa is a Sêr Cymru Fellow working as a geologist at the British Geological Survey - Wales, where he investigates suitable locations around Wales for below-ground CO<sub>2</sub> storage. [Click here to read more about his research.](#)



## News

### MCSA COFUND Fellows join the NRN-LCEE

Through the Welsh Government's call for Marie Skłodowska-Curie Actions COFUND Fellows, 7 Fellowships were awarded with joint funding from the NRN-LCEE because of their close alignment to the NRN-LCEE Clusters. They are:

1. [Dr. Jianhai Bao](#), Swansea University (Resilcoast)
2. [Dr. Karen Cameron](#), Aberystwyth University (Geo-Carb-Cymru)
3. [Dr. Andrew Foote](#), Bangor University (AquaWales)
4. [Dr. Lars Markesteijn](#), Bangor University (Multi-Land)
5. [Dr. Paolo Musolino](#), Aberystwyth University (Geo-Carb-Cymru)
6. [Prof. Karina Sand](#), Aberystwyth University (Geo-Carb-Cymru)
7. [Dr. Jinyang Wang](#), Bangor University (Climate-Smart Grass & Multi-Land)

### Upcoming Events:

[Public Lecture: Collaborating for sustainable natural resource management](#)  
**16 March 2017, Cardiff University**

[From mice to livestock: Exploring the potential of the gut-microbiome-brain axis regulation in animal production](#)  
**24 – 25 April 2017, Aberystwyth University**

### Funding Opportunities:

[NRN-LCEE Proposal Writing Fellowships](#)

Open call until 10  
Fellowships have been awarded.

### Our Thematic Research Areas:

1. [Sustainable intensification](#)
2. [Low carbon energy pathways](#)
3. [Developing the bio economy – social, economic and technological modelling](#)
4. [Impacts and mitigation of climate change and human activities](#)

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## Sêr Cymru Fellows visit Brussels

18 NRN-LCEE Sêr Cymru Fellows visited Brussels in November to familiarize themselves with EU funding from the European Research Council, Horizon 2020 and Marie Skłodowska-Curie Actions. They were accompanied by Welsh Higher Education European Liaison Officers from Aberystwyth, Bangor, Cardiff, South Wales and Swansea Universities. This visit was the 4<sup>th</sup> in a series of visits organised by the NRN-LCEE for their researchers. [Read more...](#)

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## Come Dine with the Future

In November, the NRN-LCEE partnered with the Royal Society of Biology to explore the subject of future food security at the [National Museum of Wales in Cardiff](#).

'Come Dine with the Future' explored food and its sustainability in an original format, where five experts in different food-related sectors were challenged to present what they considered to be a menu we may be eating in 50 years' time. [Click here to read a report on this event...](#)



Graphical artist Laura Sorvala with her visual piece capturing the key points and focus of the event. You can view the image in detail [on our website](#).

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## Cleaner Cows & AquaWales visit Brussels

Researchers from the NRN-LCEE [AquaWales](#) and [Cleaner Cows](#) Research Clusters visited Brussels in January. They presented their research to representatives from a range of organisations, and learnt about current and future European Union funding opportunities for improving science-based aquaculture and dairy & beef farming practices.

This was the 5<sup>th</sup> and final one in a series of visits organised by the NRN-LCEE. In total 45 researchers from Wales have had the opportunity to learn more about how and why research is funded by the EU. They have been exposed to a range of advice and insights that hopefully will achieve the ultimate goal of increasing funding streams to Wales. [Read more...](#)

## Our Clusters:



[AquaWales](#)



[Cleaner Cows](#)



[Climate-smart Grass](#)



[Geo Carb Cymru](#)



[Multi-Land](#)



[Plants & Architecture](#)



[Quotient](#)



[Resilcoast](#)

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## Research Development Fund

We are pleased to announce the following RDF awards:

### 1. Symposium: From mice to livestock: Exploring the potential of the gut-microbiome-brain axis regulation in animal production.

**Organisers:** Prof. Jamie Newbold, Dr. Diego Moya, Dr. Sebastian McBride (Aberystwyth University); Dr. Dominic Dwyer (Cardiff University); Dr. Mark Holton (Swansea University) and Prof. John Parkinson (Bangor University).

**Location:** Aberystwyth University

**Date:** 24-25 April 2017

[Further information.](#)

### 2. Workshop: Autonomic learning from big data for green transportation.

**Organisers:** Dr. Changjing Shang, Prof. Qiang Shen, Dr. Xiang Li (Aberystwyth University); Dr. Steven Stockaert (Cardiff University); Dr. Shang-ming Zhou (Swansea University); Prof. Qingfu Zhang (University of Essex) and Prof. Fei Chao (Xiamen University, China).

**Location:** Cardiff (venue TBC)

**Date:** 6-8 September 2017

### 3. Workshop: Redesigning Resilience: Ancient remedies for modern problems.

**Organisers:** Dr. Rowena Jenkins (Cardiff Metropolitan University); Dr. Geertje van Keulen, Dr. Thomas Powell (Swansea University); Dr. Matthew Lewis, Dr. Stephanie Wilson (Bangor University); Dr. Rhys Dafydd Jones (Aberystwyth University); Dr. Diana Luft (University of Wales) and Dr. Owain Roberts (National Library Wales).

**Location:** TBC

**Date:** Autumn 2017

[For an overview of all RDF awards to date click here.](#)

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## NRN LCEE Public Engagement Workshops

In February, our Fellows & PhD students spent a day at [Techniquest](#) in Cardiff Bay for expert STEM and public engagement training. Inspired by the day, they will develop their own engagement activities to help a wider public understand NRN-LCEE research. In March we are going back to Techniquest for a second event to to develop the activities and look forward to reporting the results in future newsletters.

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## Public Lecture Series

On 2 February, Professor AbuBakr Bahaj from the University of Southampton gave a public lecture at the [Energy Safety Research Institute](#) at Swansea University which addressed sustainable energy across various different scales. Professor Bahaj took the audience on a fascinating journey through the current state and future potential of wind, solar and marine technologies and what the challenges are that need to be overcome to ensure sustainable energy generation for the future.



As for previous events, this lecture has been recorded and is available on [our website](#) and [YouTube channel](#). All our lectures are free to attend and open to the public.

Our next lecture takes place on 16 March at Cardiff University. [Professor Katarina Eckerberg](#), Professor of Political Science at Umeå University, Sweden, will speak on '[Collaborating for Sustainable Natural Resource Management](#)'.

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## Plants in Space at the National Botanic Garden of Wales

The [Plants & Architecture Cluster](#) welcomed visitors to 'Plants in Space' at the National Botanic Garden of Wales in November. 70 visitors attended the event, which featured a range of activities demonstrating how plants sense light and gravity differently to us, how plants can be grown in space, and how some of our food might be produced in the future. [Read more...](#)

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## Cluster Highlights – Conference attendance

The NRN-LCEE encourages its Fellows and PhD students to present at international conferences. Recently one of our Fellows and one of our PhD students received grants to participate in two conferences. They are:

- Davide De Battisti, Resilcoast PhD student at Swansea University, presented at the COST Action meeting [Linking belowground biodiversity and ecosystem function in European forests - BioLink](#), in Prague in October.
- Dr Davide Gamboa, Geo-Carb-Cymru Fellow at the British Geological Survey - Wales, presented at the [American Geophysical Union Fall Meeting](#) in San Francisco, USA, in November.

[Click here to read more about their experience.](#)

Other Fellows presented at, for example, the British Ecological Society Annual Meeting in Liverpool (McKinley, Resilcoast), the International Conference on Polymer Processing and Characterisation in Kerala, India (Prabhakaran, Plants & Architecture), and a genomics in aquaculture workshop in Merida, Mexico (Uren-Webster, AquaWales).

## Publications

NRN-LCEE research has been published in the following recent publications:

- **Lewis, M.J.**, Angeloudis, A., Robins, P.E., Evans, P.S., and **Neill, S.P.** (2017). Influence of storm surge on tidal range energy. *Energy*. DOI: <http://dx.doi.org/10.1016/j.energy.2017.01.068>
- **Xing, Y., Jones, P., and Donnison, I.** (2017). Characterisation of nature-based Solutions for the built environment. *Sustainability*. DOI: <http://dx.doi.org/10.3390/su9010149>
- **Adams, J.M.M.**, Bleathman, G., Thomas, D., and Gallagher, J.A. 2016. The effect of mechanical pre-processing and different drying methodologies on bioethanol production using the brown macroalga *Laminaria digitata* (Hudson) JV Lamouroux. *Journal of Applied Phycology*. DOI: <http://doi.org/10.1007/s10811-016-1039-5>
- Armstrong, S.B., **Lazarus, E.D.**, Limber, P.W., Goldstein, E.B., Thorpe, C., and **Ballinger, R.C.** (2016). Indications of a positive feedback between coastal development and beach nourishment. *Earth's Future*, 4: 626–635. DOI: <http://dx.doi.org/10.1002/2016EF000425>
- **Wootton-Beard., P.C., Xing, Y., Prabhakaran, D.R.T., Robson, P., Bosch, M., Thornton, J.M., Ormondroyd, G.A., Jones, P., and Donnison, I.** (2016). Improving the impact of plant science on urban planning and design. *Buildings*. DOI: <http://dx.doi.org/10.3390/buildings6040048>
- **Lazarus, E.D.** (2016). Scaling laws for coastal overwash morphology. *Geophysical Research Letters*. 43: 113–12,119. DOI: <http://dx.doi.org/10.1002/2016GL071213>

Find all publications resulting from NRN-LCEE research at: <http://www.nrn-lcee.ac.uk/publications>

## New NRN-LCEE information booklet

The NRN-LCEE has produced a new booklet providing an overview of our research and activities.



[You can find a web version of this booklet on our website.](#) A high resolution version or a printed copy is available on request.



Would you like to stay informed of our activities? [Please sign up to our newsletter.](#)