

Newsletter 8 June 2017

Welcome to the eighth newsletter of the Sêr Cymru National Research Network for Low Carbon, Energy and Environment (NRN-LCEE). Here you can read about our recent events, research highlights and funding opportunities. One of our Fellows working in the Quotient Cluster provides an in-depth overview of his research activities.

This newsletter also lists the latest awards in the [Research Development Fund](#). The call closed in March and in total we have awarded 23 projects through the scheme. A lot has been achieved to date through this scheme, and you can read about a specific case study that demonstrates the wider impact that such, relatively modest, awards can have. A number of RDF-funded events are being organised for the coming months and you can find further information and links to register your attendance below.

Funding is still available for our [Proposal Writing Fellowship Scheme](#), which supports 2 months' salary for researchers currently without an academic contract to write a research proposal. 5 Fellowships have been awarded to date and 5 more are available.

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

Prof. David Thomas (d.thomas@bangor.ac.uk)

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

Introducing our Clusters: Quotient

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

Led by Dr Simon Neill from Bangor University, [Quotient](#) is a collaboration between Bangor, Cardiff and Swansea Universities and the University of South Wales. The Cluster investigates how marine renewable energy devices interact with the environment and one-another. Using modelling and experimental tests, the Cluster is trying to identify:

- 1) How much electricity can be generated from tidal and marine energy resources around the UK.
- 2) what the optimal locations for marine renewable arrays are.
- 3) the most efficient designs for arrays of devices; and 4) how the marine environment and resource may change in the future.

Below, Dr Matt Lewis describes his research in more detail.

Introducing our Researchers:

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

Dr Matt Lewis is a Research Fellow at Bangor University working on the [Quotient Cluster](#). Using computer simulations of earth systems, Matt tries to understand oceanographic processes with respect to marine renewable energy, such as waves and tides. [Click here to read more about his research.](#)

News

Crowded NRN-LCEE stands during British Science Week

As part of [British Science Week](#), the NRN-LCEE and several of its Clusters had stands at science festivals at Aberystwyth and Bangor Universities and at [Techniquest](#) in Cardiff. [Click here to read more...](#)



Funding Opportunities:

[NRN-LCEE Proposal Writing Fellowships](#)

Open call until 10
Fellowships have been
awarded.

Upcoming Events:

[RDF-funded workshop: Opportunities and Challenges of Co-location for Vertical Farming in Wales](#)
13 June 2017
Principality Stadium,
Cardiff

[NRN-LCEE Policy Engagement workshop](#)
21 June 2017
SSE Swalec, Cardiff

[RDF-funded workshop: Redesigning Resilience](#)
4-5 July 2017
Myddfai Community
Hall and Visitor Centre,
Myddfai

[Marie Skłodowska-Curie Individual Fellowships: Residential writing workshop](#)
5-6 July 2017
Swansea University

Lasting impacts from the NRN-LCEE Research Development Fund (RDF)

The NRN-LCEE Research Development Fund was established to support workshops, events and other activities to encourage new collaborative research developments and expand opportunities for knowledge transfer and engagement with stakeholders and industry. Additional funds were available to support meetings for the development of proposals for EU/ RCUK funding opportunities.

23 proposals have been awarded and already 9 workshops, meetings and conferences have been held. To date, these events have brought together over 260 scientists, policy makers and industry representatives from around 100 organisations in Wales, the rest of the UK and internationally.

[Click here to read more about one of the awards that highlight the impact of NRN-LCEE RDF funding.](#)

An overview of all RDF awards is available at www.nrn-lcee.ac.uk/rdf-funded.

NRN-LCEE Returning Fellow sets up new research collaborations in Fiji

Sindia Sosdian is a Lecturer at Cardiff University and a [NRN-LCEE Returning Fellow](#). For her Fellowship, she is working with collaborators in Malaysia and Fiji to develop and apply novel biological and geo-chemical techniques to examine linkages between land use change and water quality, and its impact on reef health.

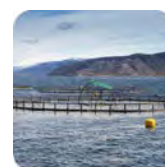
In May 2017, Sindia traveled to Viti Levu, Fiji, to develop local collaborations with NGOs and researchers at the University of the South Pacific (USP) and to undertake coral reef sampling. [Click here to read more about her trip...](#)



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](#)

Our Clusters:



[AquaWales](#)



[Cleaner Cows](#)



[Climate-smart Grass](#)



[Geo Carb Cymru](#)



[Multi-Land](#)

Public Lecture Series

Two NRN-LCEE public lectures took place over the past few months:

In March, Cardiff University's [Sustainable Places Research Institute](#) hosted [Prof. Katarina Eckerberg](#), Professor in Political Science at Umeå University, Sweden. She gave an overview of the challenges and successes of government collaborations with local communities, for the management of natural resources.



In May, Bangor University hosted a lecture by [Prof. Mike Stephenson](#), Director of Science and Technology at the British Geological Survey. He discussed the role of geology in addressing food-water-energy challenges associated with population growth, urbanisation and climate change in the developing world.

As for previous events, these lectures have been recorded and are available on [our website](#) and [YouTube channel](#). All our lectures are free to attend and open to the public. For an overview of confirmed future speakers in the series please visit: www.nrn-lcee.ac.uk/future-lectures

Policy Engagement workshop

The NRN-LCEE is organising a workshop highlighting examples of good practice in policy engagement and stakeholder communication.

This event takes place on 21 June at the SSE Swalec in Cardiff and is free to attend. [Click here to register your attendance](#)

Confirmed speakers

- ❖ **Henry Burgess**, Head of the Arctic Office, Natural Environment Research Council
Connecting science and policy: An Arctic perspective
- ❖ **Louise Edwards**, Hub Manager for the Academia Europaea Cardiff Knowledge Hub
Policy-making in Europe: the new Scientific Advice Mechanism and the role played by Wales
- ❖ **Bridget Emmett**, Head of Site, Centre for Ecology & Hydrology Bangor
Benefits of understanding and engaging with evidence needs: An academic's perspective
- ❖ **Michael Weston**, Operations Manager, UK Energy Research Centre
Troubled Waters? Building a bridge between academia and policy
- ❖ **Graham Winter**, Service Development Adviser, Research Service National Assembly for Wales
How does research get into the National Assembly for Wales?

[For abstracts and further details on our speakers please click here](#)

Our Clusters:



[Plants & Architecture](#)



[Quotient](#)



[Resilcoast](#)

Research Development Fund (RDF)

From mice to livestock: RDF-funded symposium at Aberystwyth University

Prof. Jamie Newbold and Dr Diego Moya hosted a 2-day RDF-funded symposium exploring the potential of the gut-microbiome-brain axis regulation in animal production in March. Over 50 attendees from 27 Universities, research institutions and private companies contributed to the discussions around the implementation of current knowledge from rodent models and humans into livestock animal production. [Click here to read more about the event.](#)

The NRN-LCEE call for Research Development Funding closed in March. We are pleased to announce the following new RDF awards:

Developing circular economy solutions using algae to reduce agricultural nitrate pollution and develop new feed products. Workshop

Organisers: Dr. Carole Llewellyn, Prof. Sonia Consuegra (Swansea University); Dr. William Stiles (Aberystwyth University); Dr. David Styles (Bangor University).

Location: Swansea University

Date: TBC in Autumn 2017

Opportunities and challenges of co-location for vertical farming in Wales. Workshop

Organisers: Dr. Peter Wootton-Beard (Aberystwyth University), Dr Yangang Xing, Dr Amy Ellison, Diana Waldron (Cardiff University); Dr. Tim Patterson (University of South Wales); Jose Constantino, Susie Abson (Welsh Government), Grow-Up Farms Ltd, Pontus Aqua Ltd.

Location: Principality Stadium, Cardiff

Date: 13 June 2017

[Registration and further information.](#)

Resolving scale discrepancies in evaluation of sustainable intensification pathways for dairy and beef farms. Workshop

Organisers: Dr. David Styles, Dr. James Gibbons, Dr. Alejandra González-Mejía, Dr. Rob Brook, Prof. Dave Chadwick, Dr. Helen Taft, Dr. Eilidh Forster (Bangor University); Dr. Andreas Foskolos, Dr. Jon Moorby (Aberystwyth University); Prof. Bridget Emmett (Centre for Ecology & Hydrology - Bangor).

Location: TBC

Date: TBC in Autumn 2017

Facilitating collaborative research opportunities between the National Parks and academic institutions across Wales. Conference

Organisers: Dr. Emma Hayhurst, Dr. David Lee (University of South Wales); Prof. Mike Bruford (Cardiff University); Dr. Geraint Coles (University of Wales - Trinity St. David); Dr. Kate Spiller (Swansea University); Dr. Paul Sinnadurai (Brecon Beacons National Park).

Location: Maesycwmmmer

Date: 13 September 2017

Saltmarsh-NET: A global network for synthesising and coordinating research on saltmarsh ecosystem functioning and ecosystem services. Workshop

Organisers: Dr. Martin Skov, Dr. Jordi Pages (Bangor University); Dr. John Griffin (Swansea University); Dr. Rhoda Ballinger, Dr. Emma McKinley (Cardiff University); Dr. Nicola Beaumont (Plymouth Marine Laboratory).

Location: Nant Gwrtheyrn, Lleyn Peninsula

Date: TBC in January 2018

Rewilding in a changing Europe: Opportunities, threats and shifting geographies of land-use. Series of 2 workshops

Organisers: Dr. Sophie Wynne-Jones, Dr. Matt Hayward, Dr. Neal Hockley, Dr. Eifiona Thomas-Lane, Dr. Prysor Williams, Prof. John Healey (Bangor University); Prof. Michael Woods, Prof. Peter Midmore (Aberystwyth University); Dr. Jonathan Prior (Cardiff University); Dr. Kim Ward (Plymouth University); Dr. George Holmes (Leeds University); Dr. Chris Sandom (Sussex University).

Location: TBC in Bangor and Cardiff

Date: TBC late 2017/ early 2018

Priorities for UK upland land-use: Developing a modelling framework to facilitate decision-making by policy-makers. Workshop

Organisers: Dr. Prysor Williams, Prof. Dave Chadwick, Dr. James Gibbons, Prof. John Healey, Dr. Neal Hockley, Prof. Davey Jones, Dr. Tim Pagella, Dr. Andy Smith, Dr. Sophie Wynne-Jones (Bangor University); Prof. Max Munday, Prof. Richard Wyn-Jones (Cardiff University); Prof. Mike Christie, Dr. Mariecia Fraser, Prof. Jamie Newbold (Aberystwyth University); Dr. Amy Thomas, Prof. Jack Cosby, Prof. Bridget Emmett (Centre for Ecology & Hydrology).

Location: TBC in Bangor and Cardiff

Date: TBC late 2017/ early 2018

Horizon scanning for the identification of the most important challenges for aquaculture in the UK. Workshop.

Organisers: Dr. Pablo Orozco-ter Wengel, Prof. Jo Cable, Dr. Isabelle Durance, Dr. Christopher Hubbard (Cardiff University); Prof. Sonia Consuegra, Prof. Carlos Garcia-de Leaniz (Swansea University); Prof. Gary Carvalho, Prof. Simon Creer (Bangor University); Dr. Laurence Jones, Prof. Bridget Emmett (Centre for Ecology & Hydrology Bangor).

Location: TBC

Date: TBC in Autumn 2017

Enhancing the resilience of businesses in Wales: water-energy savings, offsets and recovery. Workshop.

Organisers: Dr. John Gallagher, Dr. David Styles, Dr. Prysor Williams (Bangor University); Prof. Calvin Jones (Cardiff University); Prof. Hywel Griffiths (Aberystwyth University); Dr. Aonghus McNabola, Prof. Paul Coughlan (Trinity College Dublin); Dr. Kemi Adeyeye (Brighton University); EPA Green Business; Waterwise; Energy Saving Trust; Dulas; Food & Drink Welsh Government, Centre for Alternative Technology and WRAP Cymru.

Location: Newtown

Date: 27 January 2018

[Further information](#)

Two proposals were awarded to support the development of RCUK grant proposals to Dr. John Griffin (Swansea University) and Dr. Peter Robins (Bangor University).

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

Publications

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

Ormondroyd G.A., Alfredsen G., **Prabhakaran R.T.D.**, **Curling S.F.**, Stefanowski B.K., **Spear M.J.**, and Gobakken L.R. (2017). Assessment of the use of dynamic mechanical analysis to investigate initial onset of brown rot decay of Scots pine (*Pinus sylvestris* L.). [International Biodeterioration and Biodegradation](#) 120: 1-5. DOI: <http://dx.doi.org/10.1016/j.ibiod.2017.02.002>

Dalla Riva, M., and **Musolino, P.** (2017). The Dirichlet problem in a planar domain with two moderately close holes. [Journal of Differential Equations](#). DOI: <http://dx.doi.org/10.1016/j.jde.2017.04.006>

Qin, Y., Alves, T.M., Constantine, J., and **Gamboa, D.** (2017). The role of mass wasting in the progressive development of submarine channels (Espírito Santo Basin, SE Brazil). [Journal of Sedimentary Research](#) 87: 1-17.

Lewis, M., **Neill, S.P.**, **Robins, P.E.**, Hashemi, M.R., and Ward, S. (2017). Characteristics of the velocity profile at tidal-stream energy sites. [Renewable Energy](#). DOI: <http://dx.doi.org/10.1016/j.renene.2017.03.096>

Neill, S.P., Vögler, A., Goward-Brown, A.J., Baston, S., **Lewis, M.J.**, Gillibrand, P.A., Waldman, S., and Woolf, D.K. (2017). The wave and tidal resource of Scotland. [Renewable Energy](#). DOI: <http://dx.doi.org/10.1016/j.renene.2017.03.027>

Togneri, M., **Lewis, M.J.**, **Neill, S.P.**, and **Masters, I.** (2017). Comparison of ADCP observations and 3D model simulations of turbulence at a tidal energy site. [Renewable Energy](#). DOI: <http://dx.doi.org/10.1016/j.renene.2017.03.061>

Boada, J., Arthur, R., Alonso, D., **Pagès, J.F.**, Pessarrodona, A., Oliva, S., Ceccherelli, G., Piazzi, L., Romero, J., and Alcoverro, T. (2017). Immanent conditions determine imminent collapses: nutrient regimes define the resilience of macroalgal communities. *Proceedings of the Royal Society B* 284: 20162814. DOI: <http://dx.doi.org/10.1098/rspb.2016.2814>

Ballinger, R.C., and Dodds, W. (2017). Shoreline management plans in England and Wales: a scientific and transparent process? *Marine Policy*. DOI: <https://doi.org/10.1016/j.marpol.2017.03.009>

Edmunds, M., Williams, A.J., **Masters, I.**, and **Croft, T.N.** (2017). An enhanced disk averaged CFD model for the simulation of horizontal axis tidal turbines. *Renewable Energy* 101, 67-81. DOI: <http://dx.doi.org/10.1016/j.renene.2016.08.007>

Davidson, K.E., **Fowler, M.S.**, **Skov, M.W.**, Doerr, S., and **Griffin, J.N.** (2017). Livestock grazing alters multiple ecosystem properties and services in salt marshes: a meta-analysis. *Journal of Applied Ecology*. DOI: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12892/full>

He, Y., Jones, P., and **Rayment, M.** (2017). A simple parameterisation of windbreak effects on wind speed reduction and resulting thermal benefits to sheep. *Agricultural & Forest Meteorology*. DOI: <https://doi.org/10.1016/j.agrformet.2017.02.032>

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

Cluster Highlights – Conference attendance

The NRN-LCEE encourages its Fellows and PhD students to present at international conferences.

Recently, Geo-Carb-Cymru Fellow Dr Sara Rassner and PhD student André Soares (both at Aberystwyth University) attended and presented at the *Annual Conference of the Microbiology Society* in Edinburgh.

Multi-Land PhD student Bid Webb presented a poster at the *European Geophysical Union Annual Conference* in Vienna, Austria.

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

Other Fellows presented at: *The 6th Pan-Hellenic Congress in Technology of Animal Production* in Thessaloniki, Greece (Andreas Foskolos, Cleaner Cows Fellow at Aberystwyth University); *The 9th International Conference on Porous Media (INTERPORE)* in Rotterdam, the Netherlands (Shakil Masum, Geo-Carb-Cymru Fellow at Cardiff University); *The Alter-NET International Conference on Nature and Society-synergies, conflicts and trade-offs* in Ghent, Belgium (Emma McKinley, Resilcoast Fellow at Cardiff University).



Cyngor Cyllido Addysg
Uwch Cymru
Higher Education Funding
Council for Wales

hefcw



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