



# Working with **CORNWALL**

The European Centre for Environment & Human Health



# Cornwall in our research

The **University of Exeter Medical School's** European Centre for Environment & Human Health is based in Truro. It is funded with support from the European Regional Development Fund Programme 2007 to 2013 and the European Social Fund Convergence Programme for Cornwall and the Isles of Scilly.

**Cornwall** runs through our programme of research and training. Everything we do is either informed or enabled by our unique location.

“ Cornwall represents a perfect location for environment and health research and the Centre's work is making a vital contribution to this increasingly important field. Having a world-class research and training institution on our doorstep is fantastic for the local population and business community. ”

**Lezli Boswell**, Chief Executive, Royal Cornwall Hospitals NHS Trust and National Clinical Director, Remote and Rural Care and Services



**W**hether it's working with the area's innovative digital companies or sampling local water quality, the Centre's integrated approach to University research has ensured a deep connection to Cornwall's unique environment and community.

Thanks to support from the University of Exeter Medical School, European Regional Development Fund and European Social Fund,

we're using regional expertise to explore a breadth of issues – such as wellbeing, ageing and antibiotic resistance – which have local and global significance.

From improvements in housing regulations to new methods of engaging children with nature, our research is having a direct impact on the ingenuity of businesses in Cornwall, and improving public health at a national and international level.

The region has allowed our interdisciplinary and collaborative studies to thrive and in return we've helped to shine a spotlight on the fantastic opportunities Cornwall can offer to both enterprise and research.

**Professor Lora Fleming**,  
Director, European Centre for Environment  
& Human Health

[www.ecehh.org](http://www.ecehh.org)



# opening new markets to Cornish companies

“ One of the main benefits for us has been having proven work within the medical sector, and the cachet that partnering with an institution like the Centre carries. We've got a live application that's collecting data and that's really helped to open this sector up to us. ”

**Lindsay Axten, Buzz Interactive**

**G**eographically removed from the country's large economic centres, Cornwall can be a challenging place for enterprise to gain a foothold in new markets.

By working with Cornish companies to explore new intellectual and technical territory, the Centre's research is providing crucial credibility in the quest to access new commercial areas.

Partnering with Cornish researcher Dr Jessica Tyrrell, digital agency Buzz Interactive has created a tool to monitor the symptoms of the

chronic illness Ménière's Disease and provide a greater insight into the factors that impact its symptoms.

Ménière's is a rare condition of the inner ear that profoundly affects the hearing and balance of around 160,000 people in the UK, yet there are large gaps in our understanding of how the disease is triggered and develops.

In collaboration with the UK Met Office the team have developed a mobile application that can record symptoms on a daily basis. They're hoping the app will help to uncover

links between Ménière's Disease and meteorological conditions that could ultimately be used to send out early warning messages to sufferers.

The partnership has attracted international attention and is providing Buzz with expertise that will make them more competitive in attaining future work, particularly with academic institutions and those within the medical sector in the new field of eHealth.



# spotlighting research in Cornwall

“ Thanks to the coverage we’ve achieved, international awareness of our work has exploded. I’ve been contacted by academics, journalists and policy advisers, all wanting to know more about the exciting research we’re doing in Cornwall. ”

Dr Ben Wheeler, Senior Research Fellow

The **ultimate aim** of the Centre’s research is to improve the health of both the population and the environment through policy and practice.

**B**y producing high quality research, publishing findings in peer reviewed journals, contributing to policy summaries and gaining widespread coverage in the media, we are shining a spotlight on research in Cornwall and ensuring our message is heard by decision makers throughout the UK and Europe.

Since 2011, our exploration into the effects of the natural environment on physical and mental wellbeing has captured the global media’s attention.

Stories covering this work have held the leading position on the BBC’s news pages on several occasions; had dedicated special programmes on Canadian national TV, Brazilian national TV and BBC World; and been featured by the full range of tabloid and broadsheet print media.

Accessible short videos of this research have been viewed across the world, and our impact on social media has led the journal Nature to feature our research in their “Most Viewed Papers in Science” section.

This coverage has helped to raise awareness of the Centre’s work to a diverse audience, and secured important features in policy documents such as the Government’s POST Notes and EU Science in Policy briefings.

[www.bbc.co.uk/news/health-22214070](http://www.bbc.co.uk/news/health-22214070)



# promoting Cornish innovation

**Research and development** can often be the catalyst for small companies to evolve and expand.

The Centre is working to create long term and mutually beneficial relationships with Cornish businesses, helping them to connect with other organisations and grow through applied research and development.

In one example, social housing company Coastline Housing has been working closely with Cornish ESF Convergence funded PhD student, Richard Sharpe, to understand how new building practices – such as improved insulation and energy efficiency – can affect occupant health.

The research team are using their findings to help reduce the presence of damp in homes and understand the health impacts of related factors

like mould. They're hoping to feed this guidance into regional and national policy.

Extending this unique opportunity, the team have also partnered with Cornish technology company Carnego Systems, to explore how people can use environmental monitoring technology to change their behaviour and build community cohesion.

This award winning enterprise-research collaboration is at the cutting edge of built-environment research, providing opportunities to uncover new knowledge that will provide a competitive advantage to both companies.



“ The professionalism, level of knowledge and fresh approach this project has brought has captured everyone’s enthusiasm. High quality research is critical to any future decisions we make, so its importance can’t be underestimated. ”

**Mark England**, Coastline Housing



# the south west as a centre for debate

“ These networking events have been a real opportunity for disparate parts of the Cornish business community to come together and re-energise. Fostering these kinds of interactions is already paying dividends and strengthening Cornwall’s position as a place for innovation. ”

**Professor Colin Roberts,**  
Chair of the Strategy Board, Health and Wellbeing Innovation Centre



**Brilliant ideas** seldom occur without networking and debate. Over the last three years, the Centre has hosted a range of conversations – from small focused discussions to large international conferences.

**T**hese debates have highlighted Cornwall as a hub for health and wellbeing innovation and have helped to connect a broad mix of people and institutions from across the world.

## Recurring

Consisting of a range of practitioners, researchers, businesses and third sector organisations, the Centre’s Peninsula Environment and Health Forum has met biannually since 2011. Over its lifetime, the Forum has acted as a place for debate and support, encouraging networking amongst often diverse Cornish groups.

[www.ecehh.org/about-us/forum](http://www.ecehh.org/about-us/forum)

## Focused

The Forum has fostered several spin offs, including the Children’s Health and Play Special Interest Group. Bringing together a small set of focused individuals has allowed these groups to network and achieve the critical mass necessary to apply for large funding grants.

[www.ecehh.org/events/health-play](http://www.ecehh.org/events/health-play)

## Novel

Capitalising on the innovative nature of Cornwall’s private sector, we’ve brought fresh approaches to problem solving. Our academics worked with Cornish digital agency ffunction, to hold a two day ‘Design Jam’. The Jam brought together healthcare professionals, designers and technologists to explore new solutions for several key technology and delivery issues faced by health and social care providers.

[www.ehealth.fffuction.co](http://www.ehealth.fffuction.co)

## International

In June 2014, the Centre hosted the fourth international Blue Mind Conference at Mawgan Porth in Cornwall. This two day event brought together a diverse range of people from across the world, including scientists, professional athletes, artists and business leaders, to discuss the future of our coastal resources.

[www.ecehh.org/events/blue-mind-summit](http://www.ecehh.org/events/blue-mind-summit)



# answering questions of international importance

With its contrasting placid landscapes and heavy industrial heritage, **Cornwall** offers a unique environment in which to examine the complex interactions between the environment and health.

**T**hrough our interdisciplinary expertise in toxicology and microbiology, we're making the most of 'Test Bed Cornwall' to improve our understanding in areas that will have global significance to public health.

In our labs at the Penryn-based Environment and Sustainability Institute, our team is investigating how the environment can affect the development of antibiotic resistance in bacteria. As part of this research, we're working with companies such as AstraZeneca to understand how the chemicals we release into the environment might influence this process.

Other stressors, like a changing climate, are likely to affect our health and wellbeing in a number of ways and we've partnered with specialists at the Royal Cornwall Hospital Trust to understand how diseases and drug use might change over the coming years. In turn, we're considering how this might alter the mix of pharmaceuticals entering the environment, and the effects this could have on flora, fauna and bacteria.

“ With its multidisciplinary approach, the Centre has provided new insights that highlight the value of environment and health research – making a strong case for it to rise up the funding agenda. Cornwall's unique mix of coastline, landscape, industrial heritage, and research and health facilities make it a perfect place for these activities. ”

**John Rea**, Department for Environment, Food and Rural Affairs (DEFRA)





# creating high value jobs

“ Having the Centre on our doorstep has been such a blessing for us. We’ve attended networking events, benefitted from academic support and had crucial help with funding applications. Thanks to all of this we’ve been able to create several new jobs, helping us to grow and connect more people with the benefits of interacting with nature. ”

Jane Acton, Nature Workshops



Cutting edge research can benefit regional economies in a number of ways, from working directly with local industry, to creating skilled jobs for residents. The value of university investment in Cornwall was worth over £490 million between 2002 and 2012.

By bringing ground breaking research into Cornwall, the Centre is providing job opportunities for highly skilled individuals, retaining home grown talent as well as attracting high value employees to the region.

In one example, the Medical and Environmental Data Mashup Infrastructure (or MEDMI) project has received £1 million in funding from the Medical Research Council and Natural Environment Research Council.

This multi-institutional research collaboration is being led by the Centre and is using big data techniques to combine records from medical, environmental and meteorological databases, and search for new links between these factors, wellbeing and health.

As well as bringing significant amounts of research income to the region, this project has led to the creation of a new Senior Database Developer post for programmer, Ceri Whitmore.

This type of research is highlighting Cornwall's capacity as a test bed for new and emerging technologies, as well as developing the skills of its population.



Retaining, developing and attracting **talented young minds** is an essential part of ensuring a region's growth and prosperity.

“ Studying at a world-class university like Exeter in a great environment like Cornwall is a brilliant combination. I hope to use the skills I'm gaining for the benefit of research, education and social entrepreneurship in Ghana. ”

**Gameli Adzaho**, MSc International Student

“ This is an amazing opportunity for me to combine my interests in psychology, the environment and working with children – and to do it in my home county. ”

**Rebecca Jenkin**, PhD researcher

[www.exeter.ac.uk/environmenthealth](http://www.exeter.ac.uk/environmenthealth)

# Developing Skills **for the future**

**T**hrough our programme of postgraduate education, we're training the next generation of researchers in Cornwall, enhancing the knowledge economy of the South West and creating candidates for high calibre jobs.

Running since January 2012, our MSc in Environment and Human Health is offering local

business leaders and international students alike the chance to train in an emerging field, right here in Cornwall.

Our diverse PhD programme, supported by ESF Convergence, is contributing vital understanding to environment and health research. Each of our students is working closely with business or third sector organisations across Cornwall, to ensure their findings are relevant to local communities and have real-world applications.

For example, Cornish community interest companies, GB Boardriders and Exhale, have partnered with the Centre to understand the positive impacts of 'blue space' on youngsters' psychological health. By working with local schools and business partners, the project is giving Cornish PhD student, Rebecca Jenkin, valuable experience in the use of key research tools – as well as raising awareness of Global Boardriders' and Exhale's work.



# working with the people of Cornwall

Research can only **truly benefit communities** by working closely with their constituents, understanding and responding to important issues.



“ It’s been really valuable to both me and my swimming group to be able to tell our stories and make our voices heard. I hate the idea of people viewing old age as a decline, with the right attitude and support the years after retirement can be some of the best. ”

**Wendy Hoskin**, Sea Swimmer

**W**e’re working with a broad mix of community members to ensure our work has direct relevance to the people of Cornwall, with applications that reach far beyond.

In 30 years, more than one in four people in the UK will be aged over 65. Dr Cassandra Phoenix and Dr Noreen Orr have been working with groups of older adults to understand how physical activity can shape the ageing process – and people’s perceptions of it.

Engaging with groups across Cornwall, the two year project has involved photography, in-depth interviews and focus groups. The research team has worked closely with Age UK and the Cornwall Sports Partnership to ensure the insights they’ve gained can deliver a real impact to the future health and wellbeing of both local and national populations.

In other efforts aimed to leverage Cornwall’s strengths in the development of technology enabled healthcare, including Superfast broadband, eHealth expert Dr Stephen

Graham is seeking to understand how social media can be used to understand and alleviate community health issues.

This pioneering work in the collection and use of novel data is allowing researchers – and the Cornish businesses they’re working with – to ‘take the pulse’ of local populations and identify changes in conditions such as mental wellbeing and chronic pain, particularly in vulnerable groups such as a rapidly ageing population.





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