

Workshop at 27th Irish Environmental Researchers' Colloquium, ENVIRON 2017, at AIT, Athlone.

In the Eye of the Beholder: Overcoming Measurement Challenges in the Application of Nature Based Solutions for Health and Mental Health.*

Overview: This workshop provides an opportunity for researchers to engage, reflect and learn about the methodological challenges on human-nature interactions. Using an idiographic based approach combined with bespoke case-studies the opportunity to take a participant viewpoint will be provided. The need for consensus in the application of standardised measures is discussed and a new generation of theory-driven measures are proposed.

Attendees: This workshop would be of interest to those interested in transdisciplinary research on nature-based solutions to health and well-being. This would include delegates at Environ 2017 and additional researchers from the health promotion sector (e.g., Healthy Ireland, Local Sport Partnerships), and psychological and sport sciences.

Rationale for Event:

At both the National (e.g., EPA/HSE Ecosystem Benefits for Health) and European level (e.g., www.phenotype.eu; www.bluehealth2020.eu) interest in nature-based solutions for human health and well-being has been increasing. Evidence has emerged over the past decade to provide tentative support for the positive effect on health and well-being of both exposure and engagement with natural stimuli. Enhanced cognition, increases in positive mood and psychophysiological changes have been reported and additionally, interactions with nature can increase our propensity for pro-environmental behaviour. To date, the mechanisms underlying the aforementioned positive effects remain unclear and findings have been plagued by methodological issues.

Measurement challenges arise at three levels. Firstly, sampling issues occur with inconsistencies in the profiling of participants (e.g., use of tests of nature relatedness). Second, the role of subjective perception of environmental quality (e.g., air pollution, greenness, species richness, pleasantness) may influence decisions and well-being more than objective data. And finally, the myriad of outcome measures used to determine possible beneficial effects of natural environments, in terms of health, mental health and well-being, reduces our ability to draw firm conclusions across the growing literature, in addition to concerns around validity, reliability and conceptual clarity.

The need for consensus on the standardisation of inventories employed by researchers is asserted. Furthermore, a theory-based approach to develop the next generation of measures (augmenting subjective surveys with implicit objective measures) will be outlined. We propose, during the interactive workshop to highlight the challenges using a series of idiographic tasks and pose solutions using a combination of nomothetic evidence and case-study approaches.

Teaching Objectives:

- To introduce delegates to the concept of nature-based solutions, its strategic importance in future H2020 calls (e.g., Demonstrating innovative nature-based solutions in cities), the relevance to health, and associated gaps in the extant research literature.
- To highlight the limits of current approaches in the measurement of health, mental health and well-being in studies on nature based solutions (e.g., green exercise).
- To introduce the evidence for the standardisation of a generation of measurement techniques.
- To engage participants with sample items from the commonly applied tests and to reflect on their utility.
- To outline to the participants' case studies and how a new generation of theory-driven measures can bridge the methodological gaps reported in the research to date.

Presenters	Qualifications	Affiliation
Dr. Easkey Britton	BSc Environmental Science, PhD Environment and Society,	NEAR Health, NUI Galway
Dr. Caitriona Carlin	BSc Environmental Biology, Phd Zoology, HdipEd	NEAR Health, NUI Galway
Dr. Aoife A. Donnelly	B.A., B.A.I., PH.D. (Environmental Scientist)	School of Food Science and Environmental Health, Dublin Institute of Technology
Dr. Gesche Kindermann	BSc Environmental Science, MSc Ecology Conservation and Landscape Management, PhD Environmental Science, HdipEd	NEAR Health, NUI Galway
Dr. Tadhg E. MacIntyre	BA MA PhD afPSI Reg. Psych. afBPS CPsychol. HPC (Psychologist)	Health Research Institute, University of Limerick

Speakers:

Dr Easkey Britton is a post-doctoral research fellow at the Whitaker Institute and member of the research cluster for Social Innovation, Participation and Policy (SIPP), Dr. Easkey Britton co-leads the interdisciplinary NEAR-Health work package on nature-based solutions: a framework to use coastal blue and green space to restore health and wellbeing. Easkey also holds an honorary visiting research fellowship in Sport and Leisure Studies at the University of Waikato. A marine social scientist with a PhD in Environment and Society from University of Ulster, Easkey is channeling her passion for surfing and the sea into social change. Her parents taught her to surf when she was four years old and her life has revolved around the ocean ever since. Co-founder of the non-profit Waves of Freedom which uses the power of surfing as a creative medium for social good in places like Iran and co-organised the world's first Surf for Social Good Summit in 2015. A recent graduate from THNK's School of Creative Leadership, Easkey's work is deeply influenced by the ocean and the lessons learned pioneering women's big-wave surfing at spots like Mullaghmore, Co.Sligo, which led her to be invited to give an inspiring TEDx talk in 2013: Just Add Surf

Dr Caitriona Carlin is a professional ecologist with an interest in connecting people with nature, which is the focus of her current research. She has just completed a report for the EPA on Health Benefits from Biodiversity and Green Infrastructure. She is the Principal Investigator on a jointly funded EPA/HSE three year project to assess how nature and environment can attain and restore (NEAR) health. Her interest in this area began when she worked as an ecologist with Natural England. She has considerable professional and voluntary experience in engaging members of the public in nature based activities. She also coordinates MSc Sustainable Resource Management in conjunction with UL. She is based within the Applied Ecology Unit, Environmental Science at NUI Galway.

Dr. Aoife Donnelly has recently been appointed to the position of Lecturer in the School of Food Science and Environmental Health at the Dublin Institute of Technology. Previously, she was an EPA funded post-doctoral researcher and developed an operational real time air quality forecast model using integrated parametric and non-parametric regression techniques. Her undergraduate degree was in engineering where she graduated with first class honours and subsequently she won a prestigious gold medal and was appointed a scholar of Trinity College. She also received a higher diploma in statistics prior to her doctoral studies at Trinity. Her PhD studies explored background air pollution concentration variations across Ireland. Her work has been published in the *Journal of Environmental Science and Health* and the *Journal of Environmental Modeling and Assessment* and Aoife has co-authored several major reports for the EPA.

Dr Gesche Kindermann is a postdoctoral researcher with the NEAR Health project. She leads on the work package which asks stakeholders about their values, perceptions, motivations, and barriers to using nature for health and wellbeing. She has extensive experience in researching Irish ecosystems with an emphasis on sustainable management. A particular focus of her work is stakeholder engagement. She is also the coordinator for the MSc in Biodiversity and Land Use Planning, one of two MSc in the Applied Ecology Unit at NUIG. Her main areas of interest are habitat and landscape conservation management with particular focus on coastal dune systems and machairs. She is particularly interested in the management of human use of these areas, especially recreation and tourism activities. She graduated from NUI, Galway in 2001 with a BSc in Environmental Science. She then completed a Masters in Ecosystem Conservation and Landscape Management at UCC in 2003. This was followed by voluntary work with the Wildlife Conservation Society in Maroanetra, Madagascar, following which she returned to NUIG for a PhD. She completed her PhD thesis, 'Impacts of tourism activity on coastal dune systems', sponsored by IRCSET through the Embark Initiative, in the Applied Ecology Unit in 2011. The aim of this study was to assess human impacts on coastal conservation areas with particular emphasis on recreation activities and site management. Focus of the study was to assess the opinions of all stakeholders, who are involved in site management or who are land users, using Q-methodology.

Dr. Tadhg MacIntyre is the Course Director of the MSc. in sport, exercise and performance psychology at the Health Research Institute, University of Limerick. He supervises seven PhD students and has recently coordinated a H2020 submission on nature based solutions for well-being. Funding successes include Erasmus + www.fixthefixing.eu, small research projects from IRC, IRC New Foundations (2013 & 2015), IRC Scholarships, World Anti-Doping Social Science Research Grants and seed funding from the British Psychological Society and the Association of Applied Sport Psychology. He is the Associate Editor of the top ranked journal in sport psychology (*Int. Rev. Sport. Exerc. Psychol.*). The special issue in *Frontiers in Psychology* on mental health challenges in sport was initiated and edited by him and he is also a member of their editorial board.

Relevant Sources:

- Carlin, C. et al. (2016) Health Benefits from Biodiversity and Green Infrastructure. EPA Research Report No. 195.
- Gidlow et al. (2016). Where to put your best foot forward: Psycho-physiological responses to walking in natural and urban environments. *J Environ Psychol.* 45, 22-29.
- Donnelly et al. (2016) Environmental Influences on Elite Sport Athletes Well Being: From Gold, Silver, and Bronze to Blue Green and Gold. *Front. Psychol.* 7:1167. doi: 10.3389/fpsyg.2016.01167
- Uphill, Lane & Jones (2012). Emotion Regulation Questionnaire for use with athletes. *Psychol Sport Exer.* 13(6):761–770. DOI: 10.1016/j.psychsport.2012.05.001