



UCD School of Agriculture and Food Science

HARVESTING KNOWLEDGE BIG DATA IN AGRICULTURE AND FOOD

**WHAT IS BIG DATA? · HOW DO WE DO BIG DATA?
HOW DO WE USE BIG DATA IN AGRICULTURE AND FOOD?**

A one-day symposium targeted towards agriculture and food industry professionals and academics who wish to learn more about how predictive data analytics is impacting agriculture and food industries in Ireland and beyond.

Tuesday 13th December 2016

09:00 – 16:30

UCD O'Brien Centre for Science

ADMISSION FREE

HARVESTING KNOWLEDGE

BIG DATA IN AGRICULTURE AND FOOD

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HOW DO WE USE BIG DATA IN AGRICULTURE AND FOOD?

PROGRAMME

8:45	Registration Opens	
9:25	Introduction Professor Alex Evans Head of School of Agriculture and Food Science	
09:30	Opening Professor Orla Feely Vice President for Research, Innovation and Impact, UCD	
09:40	SESSION 1: Big data – what is it?	Professor Mark Keane Insight Centre for Data Analytics, UCD <i>Big Data, Tipping Points & Fringe Benefits</i>
10:15	CHAIR: Prof Cecily Kelleher, Principal, UCD College of Health and Agricultural Sciences	Professor Richard Tiffin Chief Scientific Officer, Agrimetrics Ltd <i>Building a Data Ecosystem for Agri-Food Innovation</i>
10:50	Coffee break and Poster Session	
11:20	SESSION 2: Big data – how do we do it?	Mr Charlie Sheridan Director, Internet of Things Systems Research Lab, Intel Corporation <i>IoT Edge computing analytics in Agriculture</i>
11:55	CHAIR: Prof Kevin McDonnell, UCD School of Agriculture and Food Science	Dr Matthew Weiser Computational Biologist, Plusvital Ireland Ltd <i>The Human Factor in Big Data: Sports, Beer and Politics</i>
12:30	Lunch	
13:30	SESSION 3: Big data – how can we use it?	Professor John Hickey The Roslin Institute, University of Edinburgh <i>Big Data Driven Breeding of Livestock and Crops</i>
13:50	CHAIR: Prof Lorraine Brennan, UCD School of Agriculture and Food Science	Professor Maarten Nieuwenhuis UCD School of Agriculture and Food Science <i>Sustainable Forest Management and Big Data</i>
14:10		Dr Claire Gormley UCD School of Mathematics and Statistics <i>Statistical Machinery for Harvesting Big Data</i>
14:30		Mr Robert Walker CEO, Keenan System, Alltech Crop Science <i>Into the Cloud: Connecting Farms, Food and People</i>
14:50		Dr Luca Panzone Newcastle University <i>The Use of Big Data from the Supermarket to Learn about Consumers and their Preferences</i>
15:10		Mr Ciaran Meghan Managing Director, IdentiGEN Ltd <i>Data Driven Approaches to Quality & Consistency in the Meat industry</i>
15:30	Session 3 Panel Q&A Mr Matt Dempsey Chairman of the Agricultural Trust	
16:00	Close Professor Lorraine Brennan UCD School of Agriculture and Food Science	

Professor Mark Keane

Professor Mark Keane is the Chair of Computer Science at UCD and since 2014 has been a PI in the Insight Centre for Data Analytics. From 2004-2007 Professor Keane was Director of ICT (2004-2006) and Director General (2006-2007) at Science Foundation Ireland (SFI) where he oversaw a €700M+ research investment. He advised the Irish Government on its €3.7B Strategy for Science, Technology & Innovation (SSTI). Professor Keane has published 170+ articles and books, including a best-selling textbook on Cognitive Psychology (with M.W. Eysenck), now in its seventh edition. He has won several international awards for his Artificial Intelligence research on Case-Based Reasoning.



Professor Richard Tiffin

Professor Richard Tiffin is the Chief Scientific Officer of Agrimetrics Ltd and Professor of Applied Economics at the University of Reading, UK. Prior to his appointment as Agrimetrics' Chief Scientific Officer, Professor Tiffin was Director of the Centre for Food Security and led the University of Reading's strategic research in the area of food security, fostering internal and external collaborations to meet the multidisciplinary food security agenda. He has been the recipient of numerous research contracts and his current research is focussed on diet and health policy. Professor Tiffin's work has examined the impacts of alternative food policies on land use in the UK and the impacts of both a soft drink tax and a 'fat tax' on health.



Charlie Sheridan

Charlie Sheridan is the Director of Internet of Things (IoT) systems research lab in Intel's New Technology Group where he leads a team of researchers focused on the application of IoT technologies across multiple industry verticals. He has participated in several European Commission research projects and consulted with the EU Commission on IoT challenges. He chairs the Board of Directors for the Intel Collaborative Research Institute for Sustainable Connected Cities with Imperial and University Colleges London. He has published a number of white papers and journal publications and co-authored 2 books on energy efficiency strategies.



Dr Matthew Weiser

Dr Matthew Weiser completed a PhD in bioinformatics at the University of North Carolina at Chapel Hill in 2015. His research focused on algorithm development and applications for complex trait analysis, using whole-genome sequencing data. After his graduate studies, Dr Weiser joined the Irish equine science company PlusVital as a data analyst and bioinformatician, where he currently studies the genomic basis of health and performance-related traits in thoroughbreds. In addition, he has an avid recreational interest in machine learning, data science, and sports analytics, and enjoys gathering real world data for statistical analysis and hypothesis testing.



Professor John Hickey

Professor John Hickey is the Chair of Animal Breeding at The Roslin Institute in Edinburgh. Professor Hickey's area of research spans animal breeding, plant breeding and human genetics. In particular he seeks to develop computational methods to generate and analyse huge data sets with whole genome sequence information, methods and breeding strategies that use genomic information to increase rates of genetic progress. The concept of Genomic Selection 2.0. software and algorithms developed by Professor Hickey underpin aspects of several of the largest breeding programs globally.



Professor Maarten Nieuwenhuis

Professor Maarten Nieuwenhuis is Head of UCD Forestry. His main research interests include integrated and sustainable forest management, decision support systems and operations research in forestry, carbon sequestration and forest operations analysis. Professor Nieuwenhuis has published c. 200 papers and book chapters, with c. 100 of these as peer-reviewed publications. He is a partner/work package leader in the FP7 projects INTEGRAL and SIMWOOD, and in H2020 projects DIABOLO and ALTERFOR. Professor Nieuwenhuis is Coordinator of the International Union of Forest Research Organisations (IUFRO) and is the Irish representative on the IUFRO International Council.



Dr Claire Gormley

Dr Claire Gormley is a statistician, working as an Assistant Professor in the School of Mathematics and Statistics in UCD where she conducts statistical research and teaches statistics to undergraduate and postgraduate students. Dr Gormley is a Funded Investigator in the Insight Centre for Data Analytics and was awarded Chartered Statistician status (CStat) by the Royal Statistical Society in 2016. Her research involves the development of novel statistical methods which has led to collaborations with statisticians and scientists both nationally and internationally, in a range of other disciplines including metabolomics, genomics, epigenomics, social science, sports science and political science.



Robert Walker

Robert Walker was appointed CEO of Keenan in 2016 with the responsibility of rejuvenating this iconic Irish agri-brand after acquisition by Alltech. Walker joined Alltech in 2002 as a sales manager in Ireland. He later transferred to UK where he opened a regional office near Belfast. In 2005 he transferred to Italy where he served as Country Manager of Alltech and progressed to become Regional Director of the Eastern Mediterranean. In 2011 Walker was appointed as European Director of Alltech Crop Science, based in Italy, and in 2013 he transferred to USA to assume his position as Global General manager for Alltech Crop Science.



Dr Luca Panzone

Dr Luca Panzone is an applied economist, currently holding a position as Lecturer in Consumer Behaviour at Newcastle University, which he joined in 2014 after positions in UCL and the Sustainable Consumption Institute, University of Manchester. Dr Panzone's research interests focus on the analysis of social problems related to agriculture, food and the environment. In particular, his interest is mainly focused on the analysis of food consumption and demand from a quantitative, applied micro-econometric perspective on households and consumers. Apart from economics of consumer behaviour, Dr Panzone maintains a strong interest in marketing theory, always focusing on the demand side.



Ciaran Meghen

Ciaran Meghen is Co-founder and Managing Director of IdentiGEN Ltd. IdentiGEN has developed from a start-up in Trinity College Dublin in 1996, to a company of 70 staff operating in USA & Canada, UK & Ireland and continental EU. With an academic background in science, genetics and statistics Ciaran has supported the growth and development of IdentiGEN's industrialized DNA based meat identification and tracing systems since inception. Ciaran currently leads the operational, quality, IT & R&D functions within the business.



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ACKNOWLEDGES THE SUPPORT OF ALL THE FOLLOWING ORGANISATIONS:



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