

News

Noel Cressie Awarded the 2014 Pitman Medal

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Distinguished Professor Noel Cressie was awarded the 2014 Pitman Medal at a ceremony held at the 2014 Australian Statistical Conference in Sydney on 10 July. The Statistical Society of Australia awards the Pitman Medal in recognition of outstanding achievement in, and contribution to, the discipline of Statistics.

Professor Cressie is Director of the Centre for Environmental Informatics in the National Institute for Applied Statistics Research Australia (NIASRA) at the University of Wollongong. He is an eminent researcher with a world-leading and sustained record of developing fundamental and innovative methods in statistical methodology and applied statistics. He ensures that these statistical methods are used to solve substantial scientific problems. Therefore Professor Cressie's work has had a significant impact on a wide range of disciplines and applications, especially in the environmental sciences.

He has developed innovative statistical methods for studying everything from the growth of the ozone hole over Antarctica to the dynamics of influenza epidemics in Scotland to the analysis of diverse and massive remote sensing data. He is currently involved in research projects with the US Census Bureau to develop spatio-temporal models for producing small area estimates, with NASA on the precision and accuracy of column-integrated atmospheric CO₂ for their OCO-2 mission, and with CSIRO on studying the biogeochemical cycles in oceans and the dynamical sequestration of carbon in soil

Prof Cressie's research has progressed from spatial to spatio-temporal models, from single-level to hierarchical models, from small data sets to massive data sets, from linear to non-linear models, and from Gaussian-process models to non-Gaussian-process models. He has been a leader in developing hierarchical models that incorporate big data, scientific knowledge and conditional probability to quantify the uncertainty in that data and knowledge. An important part of this research has been to develop computationally feasible methods to analyse the massive data sets arising from environmental research.

Prof Cressie has published three books, over 250 refereed papers and book chapters, and over 70 book reviews and invited discussions. His 1991 book *Statistics for Spatial Data* (John Wiley & Sons, NY) is a landmark in the area of spatial statistics. It brought a coherent statistical approach to the many attempts that scientists and engineers were making to understand spatial variability and has become the fundamental reference in spatial statistics.

The field has evolved rapidly in the last decade and Professor Cressie and his co-author Professor Chris Wikle have responded with the 2011 book *Statistics for Spatio-Temporal Data* (John Wiley & Sons, NY). The book presents groundbreaking research, incorporating Bayesian hierarchical statistical models and explaining spatio-temporal variability through dynamic physical relationships.

Prof Cressie has gained many other awards including the highly prestigious 2009 R.A. Fisher Award and Lecture awarded by the international Committee of Presidents of Statistical Societies (COPSS). He is among Thomson Reuters ISI's elite group of Highly Cited mathematical scientists.

The Pitman Medal is awarded at most once annually. A list of previous recipients can be found at <https://www.statsoc.org.au/Pitman-Medal-Recipients>.



Noel Cressie receiving the 2014 Pitman Medal from John Henstridge, President of SSAI

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