

## CURRICULUM VITAE

### Noel Cressie FAA

Director, Centre for Environmental Informatics  
National Institute for Applied Statistics Research Australia (NIASRA)

Distinguished Professor  
School of Mathematics and Applied Statistics

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### Address

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### Education

1972, B.Sc. with 1st class honours, University of Western Australia

1973, M.A., Princeton University

1975, Ph.D., Princeton University

### Honors and Special Awards

Class President and Valedictorian, 1967 (John Curtin High School)

Weatherburn Prize in Mathematics, 1968; Convocation Prize in Mathematics, 1969; Shell Final Year Scholarship, 1970;  
H. C. Levey Memorial Prize in Mathematics, 1971 (University of Western Australia)

Fulbright Award, 1972; Hackett Studentship, 1972 (Princeton University)

Elected Member of International Statistical Institute, 1984

American Statistical Association/National Science Foundation/Census Fellow, 1985-1986

Elected Fellow of American Statistical Association (ASA), 1986

Elected Fellow of Institute of Mathematical Statistics (IMS), 1988

Distinguished Professor in Liberal Arts and Sciences, Iowa State University, 1993-1998

Distinguished Achievement Medal, ASA Section on Statistics and the Environment, 1993

Twentieth Century Distinguished Service Award in Environmental Statistics, 1999

Distinguished Professor of Mathematical and Physical Sciences, The Ohio State University, 2004-2012

Distinguished University Scholar, The Ohio State University, 2006

CMIS Visiting Senior Research Fellow, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia, 2007

Named a Fellow of Spatial Econometrics Association, 2008

Distinguished Visiting Scientist, CSIRO, 2009 and 2011

R.A. Fisher Award and Lectureship, Committee of Presidents of Statistical Societies (COPSS), 2009;  
[http://magazine.amstat.org/videos/jsm2009/wmv/2009Fisher\\_Lecture.wmv](http://magazine.amstat.org/videos/jsm2009/wmv/2009Fisher_Lecture.wmv)

IBM Faculty Award, 2009

Named a Science Team member for NASA's OCO-2 Mission, 2011-present

Recipient (with co-author, Christopher K. Wikle) of the 2011 PROSE Award in the Mathematics category, for the book "Statistics for Spatio-Temporal Data" by N. Cressie and C.K. Wikle (2011), published by John Wiley and Sons. (The PROSE awards, for PROfessional and Scholarly Excellence, are given by the Association of American Publishers, the national trade association of the US book publishing industry.)

Distinguished Visiting Scientist, Jet Propulsion Laboratory, 2013-2017

Recipient (with co-author, Christopher K. Wikle) of the 2013 DeGroot Book Prize for "Statistics for Spatio-Temporal Data" by N. Cressie and C.K. Wikle (2011), published by John Wiley and Sons. (The DeGroot Prize is awarded every two years by the International Society for Bayesian Analysis.)

CSIRO Adjunct Fellow in Data61, CSIRO, 2014-2019

Named a Distinguished Professor, University of Wollongong, 2014

Awarded the 2014 Pitman Medal by the Statistical Society of Australia

The 1993 book, "Statistics for Spatial Data, rev. edn" by Noel Cressie, inducted into the Wiley Classics Library, 2015

Awarded (with co-authors) the 2015 Wilcoxon Award for best practical applications paper appearing in the 2014 issues of *Technometrics*

Barnett Award for excellence in environmental statistics, Royal Statistical Society, 2016

Best 2016 Statistics Paper Award (co-winner), School of Mathematics and Applied Statistics, University of Wollongong

Georges Matheron Award and Lectureship, International Association for Mathematical Geosciences, 2017

SPAIG (Statistical Partnerships among Academe, Industry, and Government) Award from the ASA; co-awardee as part of the University of Missouri Node of the NSF-Census Research Network in the USA, 2017

Elected a Fellow of the Australian Academy of Science, 2018

Web of Science (ResearcherID) h-index: currently 42

### **Special Invited Lectures**

American Statistical Association General Methodology Invited Lecture, Joint Statistical Meetings, San Francisco, CA, 1987

Technometrics Invited Paper (with M. O. Grondona), American Society for Quality Control, Fall Technical Conference, Lexington, KY, 1991

Keynote Speaker, Second International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Fort Collins, CO, 1996

Distinguished Lecturer, Computer and Information Technology Institute, Rice University, Houston, TX, 1996

Keynote Speaker, 50th Anniversary Conference, International Biometric Society, British Region, Edinburgh, Scotland, 1998

Keynote Address, Conference on Environmetrics, Gold Coast, Queensland, Australia, 1998

Conferencia Magistral, Foro Nacional de Estadística, Monterrey, Mexico, 1998

Mitchell Lecturer, University of Glasgow, Glasgow, Scotland, 1999

Keynote Speaker, GIS en Waarachtig! Symposium Statistische Software 1999, Utrecht, Netherlands, 1999

Keynote Speaker, Workshop on Spatial Information and Data Analysis, Statistical Society of Australia, Perth, Western Australia, 1999

Keynote Speaker, Applied Statistics Week, Department of Statistics, University of Missouri, Columbia, MO, 2001

WNAR Presidential Address, Annual Meeting, Vancouver, Canada, 2001

Keynote Speaker, First Spanish Workshop on Spatio-Temporal Modeling of Environmental Processes (METMA I), Castellon, Spain, 2001

J. Stuart Hunter Lecture, The International Environmetrics Society Annual Conference, Genoa, Italy, 2002

Keynote Speaker, Conference on Spatial Statistics, ASA Section on Statistics and the Environment, Seattle, WA, 2002

Keynote Speaker, 2003 IEEE Workshop on Statistical Signal Processing, St. Louis, MO, 2003

Keynote Speaker, 2004 Graybill Conference, Department of Statistics, Colorado State University, Fort Collins, CO, 2004

Keynote Speaker, 2006 White Conference on Mastering the Data Explosion in the Earth and Environmental Sciences, Australian Academy of Science, Canberra, Australia

Dan and Carole Burack President's Distinguished Lecturer, University of Vermont, Burlington, VT, 2006

Keynote Speaker, Third Spanish Workshop on Spatio-Temporal Modeling of Environmental Processes (METMA III), Pamplona, Spain, 2006

Principal Lecturer, 32nd Spring Lecture Series (5 lectures), University of Arkansas, Fayetteville, AR, 2007

Keynote Speaker, First Global Workshop on High Resolution Digital Soil Sensing and Mapping, Sydney, Australia, 2008

R.A. Fisher Lecture, Joint Statistical Meetings, Washington, DC, 2009

Keynote Speaker, International Symposium in Statistics, St John's, Newfoundland, Canada, 2009

Shumway Lecture, University of California at Davis, Davis, CA, 2009

MBI Colloquium Speaker, The Ohio State University, Columbus, OH, 2009

Keynote Speaker, International Workshop on Spatio-Temporal Modeling (METMA V), Santiago de Compostella, Spain, 2010

Keynote Speaker, SAMSI Spatial Transition Workshop, Research Triangle Park, NC, 2010

Keynote Speaker, Australian Statistical Conference, Fremantle, Western Australia, 2010

Keynote Speaker, Spatial Statistics 2011, Enschede, The Netherlands, 2011

Keynote Speaker, Fifth World Conference of the Spatial Econometrics Association, Toulouse, France, 2011

Keynote Speaker, GIScience 2012 International Conference, Columbus, OH, 2012

Keynote Speaker, Marine Biogeochemical Data Assimilation Symposium, Hobart, Tasmania, 2013

Keynote Speaker, Conference on Frontiers in Methodological and Applied Statistics: A Celebration of 50 years, University of Missouri, Columbia, MO, 2013

E.A. Cornish Lecture, Statistical Society of Australia, South Australia Branch, Adelaide, Australia, 2013

Knibbs Lecture, Statistical Society of Australia, Canberra Branch, Canberra, Australia, 2014

Keynote Speaker, Geodesign Summit, Esri, Redlands, CA, 2015

Keynote Speaker (Barnett Lecture), Royal Statistical Society International Conference, Manchester, UK, 2016

Matheron Lecture, International Association for Mathematical Geosciences 2017 Conference, Perth, Australia, 2017

Belz Lecture, Statistical Society of Australia, Victoria Branch, Melbourne, Australia, 2017

New Fellow Presentation, Australian Academy of Science, Canberra, ACT, Australia, 2018

Moyal Lecture, Department of Mathematics and Statistics, Macquarie University, Sydney, Australia, 2018

## Professional Experience

### *Permanent Appointments:*

2/1976-9/1983	Lecturer (2/1976-3/1980) and Senior Lecturer (3/1980- 9/1983), The Flinders University of South Australia, Adelaide, Australia
9/1983-11/1998	Professor of Statistics, Iowa State University (ISU), Ames, IA, USA
5/1993-11/1998	Distinguished Professor in Liberal Arts and Sciences, ISU, Ames, IA, USA
12/1998-10/2012	Professor of Statistics, The Ohio State University (OSU), Columbus, OH, USA
1/1999-10/2012	Director, Program in Spatial Statistics and Environmental Statistics, Department of Statistics, OSU, Columbus, OH, USA
5/2004-10/2012	Distinguished Professor of Mathematical and Physical Sciences, OSU, Columbus, OH, USA
11/2012-present	Professor and Director, Centre for Environmental Informatics, National Institute for Applied Statistics Research Australia (NIASRA), University of Wollongong, New South Wales, Australia
2/2013-present	Adjunct Professor, Department of Statistics, University of Missouri, Columbia, MO, USA
1/2014-present	Distinguished Professor, University of Wollongong, New South Wales, Australia

### *Visiting Positions:*

1975	(5 months)	Professeur Associé, Centre de Morphologie Mathématique, Fontainebleau, France
1975-1976	(5 months)	Lecturer, Imperial College, University of London, UK
1977-1978	(2 months)	Visiting Professor, Centre de Morphologie Mathématique, Fontainebleau, France
1978-1979	(3 months)	Visiting Scientist, National Research Institute of Mathematical Sciences, Pretoria, South Africa
1980	(5 months)	Visiting Scientist, National Research Institute of Mathematical Sciences, Pretoria, South Africa
1980-1981	(5 months)	Visiting Research Scientist, Educational Testing Service, Princeton, NJ
1981	(1 month)	Visiting Professor, Katholieke Universiteit, Nijmegen, The Netherlands
1982	(2 months)	Visiting Professor, Université de Provence, Marseilles, France
1984	(1 month)	Visiting Professor, University of Cambridge, England
1985-1986	(8 months)	ASA/NSF/Census Fellow, Bureau of the Census, Washington, DC
1991	(5 months)	Visiting Fellow, Centre for Mathematics and its Applications, Australian National University, Canberra, Australia
1991	(5 months)	Visiting Scholar, Department of Statistics, Stanford University, Stanford, CA
1995	(3 months)	Visiting Professor, Department of Statistics, The Ohio State University, Columbus, OH
1999	(3 months)	Visiting Professor, Center for Research in Economics and Statistics, INSEE, Paris, France
2002-2004	(2 months)	Visiting Professor, Université de Toulouse 1, Toulouse, France
2004-2005	(1 month)	Visiting Professor, Université de Paris Sud, Orsay, France
2007	(1 month)	Visiting Professor, Université de Paris 1 (Sorbonne), France
2007-2008	(6 months)	CMIS Visiting Senior Research Fellow, CSIRO, Australia
2010	(3 months)	Visiting Scientist, Statistical and Applied Mathematical Sciences Institute (SAMSI)
2011	(3 months)	Distinguished Visiting Scientist, Office of the Chief Executive, CSIRO, Australia

2013-2017 (4 years) Distinguished Visiting Scientist, Jet Propulsion Laboratory, NASA, Pasadena, CA  
2014 (1 month) Visiting Professor, Université de Paris Ouest, Nanterre, France

*Teaching:*

Estimation Theory (Masters), Imperial College, London, 1975  
Statistics for Engineers (2nd year), Imperial College, London, 1975  
Robustness and Data Analysis (4th year), Flinders University, Australia, 1976-1977, 1983  
Honours Seminar (4th year), Flinders University, Australia, 1982-1983  
Estimation and Hypothesis Testing (3rd year), Flinders University, Australia, 1976-1977  
Linear Models (3rd year), Flinders University, Australia, 1976-1979, 1982  
Multivariate Models and Time Series (3rd year), Flinders University, Australia, 1979  
Random Variables (3rd year), Flinders University, Australia, 1981, 1983  
Statistics Reading Course (3rd year), Flinders University, Australia, 1981  
Statistics for Sociologists (3rd year), Flinders University, Australia, 1979  
Probability and Statistics II (2nd year), Flinders University, Australia, 1977-1980  
Probability (2nd year), Flinders University, Australia, 1981  
Introductory Statistics (2nd year), Flinders University, Australia, 1976, 1979, 1982-1983  
Graphical and Computational Statistics (1st year), Flinders University, Australia, 1983  
Stat 643, Theory of Estimation and Testing of Hypotheses (Ph.D.), Iowa State University, 1984, 1986, 1988, 1989, 1992, 1994  
Stat 606, Spatial Statistics (Ph.D.), Iowa State University, 1984, 1986, 1988, 1990, 1992, 1994, 1997  
Stat 590, Robust Statistics (Masters), Iowa State University, 1985  
Stat 544, Bayesian Decision Theory (Masters), Iowa State University, 1990, 1992, 1994  
Stat 543, Theory of Probability and Statistics (Masters), Iowa State University, 1984, 1987, 1989  
Stat 505, Environmental Statistics (Masters), Iowa State University, 1996, 1998  
Stat 101, Principles of Statistics (Undergraduate service course), Iowa State University, 1985, 1993  
Stat 829, Spatial Statistics (Ph.D.), The Ohio State University, 1995, 1999, 2001, 2003, 2005, 2007, 2008, 2010, 2012  
Stat 694, Group Studies: Introduction to Spatial Statistics (Masters), The Ohio State University, 2009  
Stat 662, Environmental Statistics (Masters), The Ohio State University, 2000, 2002, 2004, 2012  
Stat 621, Statistical Theory II (Masters), The Ohio State University, 2011  
Stat 135, Elementary Statistics (Undergraduate service course), The Ohio State University, 2000

*Research Supervision:*

Senior Research Fellow, A. Zammit Mangion, University of Wollongong, 2014-2017  
  
Postdoctoral Fellow, N. H. Chan, US Census Bureau, 1985-1986  
Postdoctoral Fellow, J. Symanzik; Iowa State University, 1997-1998  
Postdoctoral Fellow, A. Mugglin; The Ohio State University, 1999-2000

Postdoctoral Fellow, B. Hrafnkelsson; The Ohio State University, 1999-2000

Postdoctoral Fellow, D. Wendt, The Ohio State University, 2000-2001

Postdoctoral Fellow, J. Kornak, The Ohio State University, 2002-2003

Postdoctoral Fellow, C. Huang, The Ohio State University, 2005-2007

Postdoctoral Fellow, S. LaDeau, The Ohio State University, 2006-2008

Postdoctoral Fellow, R. Wang, The Ohio State University, 2012-2013

Postdoctoral Fellow, S. Burden, University of Wollongong, 2013-2016

Postdoctoral Fellow, B. Zhang, University of Wollongong, 2015-2018

Postdoctoral Fellow, M. Bertolacci, University of Wollongong, 2019-2022

  

Ph.D. Student, T. Read; “Choosing a goodness-of-fit test,” Flinders University, Australia, 1982

Ph.D. Student, C. Gotway; “Inference from spatial processes,” Iowa State University, 1989

Ph.D. Student, M. Grondona; “Estimation and design with correlated observations,” Iowa State University, 1989

Ph.D. Student, N. Nanayakkara; “Heteroskedasticity-robust estimation of means,” Iowa State University, 1989

Ph.D. Student, J. Biele; “Sample-size-optimal Bayesian schemes in sequential sampling,” Iowa State University, 1990

Ph.D. Student, S. Rathbun; “Estimation and statistical inference for space-time point processes,” Iowa State University, 1990

Ph.D. Student, F. Medak; “Hierarchical testing using the power-divergence family of statistics,” Iowa State University, 1991

Ph.D. Student, J. Ver Hoef (Co Major Professor); “Statistical analysis of spatial pattern in ecological data,” Iowa State University, 1991

Ph.D. Student, J. Helterbrand (Co Major Professor); “Spatial dependence models and image analysis,” Iowa State University, 1993

Ph.D. Student, A. Cannon (Co Major Professor); “Signal detection using categorical temporal data,” Iowa State University, 1994

Ph.D. Student, C. Wikle (Co Major Professor); “Spatio-temporal statistical models with applications to atmospheric processes,” Iowa State University, 1996

Ph.D. Student, J. Lee (Co Major Professor); “Specification of dependence structures and simulation-based estimation for conditionally specified statistical models,” Iowa State University, 1997

Ph.D. Student, H. Huang; “Spatial modeling using graphical Markov models and wavelets,” Iowa State University, 1997

Ph.D. Student, J. Aldworth; “Spatial prediction, spatial sampling, and measurement error,” Iowa State University, 1998

Ph.D. Student, J. Gabrosek; “The effect of locational uncertainty in geostatistics,” Iowa State University, 1999

Ph.D. Student, J. Zhu (Co Major Professor); “Asymptotic inference for spatial cumulative distribution function,” Iowa State University, 2000

Ph.D. Student, G. Johannesson; “Multi-resolution statistical modeling in space and time with application to remote sensing of the environment,” The Ohio State University, 2003

Ph.D. Student, M. Pavlicova (Co Major Professor); “Thresholding FMRI images,” The Ohio State University, 2004

Ph.D. Student, J. Zhang (Co Major Professor); “Loss function approaches to predict a spatial quantile and its exceedance region,” The Ohio State University, 2007

Ph.D. Student, H. Li (Co Major Professor); “Approximate profile likelihood estimation for spatial-dependence parameters,” The Ohio State University, 2007

Ph.D. Student, E.L. Kang; “Reduced-dimension hierarchical statistical models for spatial and spatio-temporal data,” The Ohio State University, 2009

Ph.D. Student, M. Katzfuss; “Hierarchical spatial and spatio-temporal modeling of massive datasets, with application to global mapping of CO<sub>2</sub>,” The Ohio State University, 2011

Ph.D. Student, L. Zhuang; “Bayesian dynamical modeling of count data,” The Ohio State University, 2011

Ph.D. Student, A. Sengupta; “Empirical hierarchical modeling and predictive inference for big, spatial, discrete, and continuous data,” The Ohio State University, 2012

Ph.D. Student, J. Bradley (Co Major Professor); “Selection of predictors and estimators in spatial statistics,” The Ohio State University, 2013

Masters Student, T. Borders; Iowa State University, 1985

Masters Student, M. Bryan; Iowa State University, 1985

Masters Student, R. Zakaria; Iowa State University, 1985

Masters Student, C. Gotway; Iowa State University, 1986

Masters Student, M. Grondona; Iowa State University, 1987

Masters Student, S. Rathbun; Iowa State University, 1987

Masters Student, R. Parker; Iowa State University, 1990

Masters Student, M. Hartfield; Iowa State University, 1993

Masters Student, H. Huang; Iowa State University, 1994

Masters Student (by thesis), J. Majure; “A spatio-temporal statistical model of pollutant concentrations in surface waters,” Iowa State University, 1995

Masters Student, Y. Rao (Co Major Professor); The Ohio State University, 2003

Masters Student, N. Verzelen (Co Major Professor); Université Paris-Sud, 2005

Masters Student (by thesis), G. Davies; “Statistical modelling and analysis of Pacific sea surface temperatures,” University of Wollongong, 2018

Masters Student (by thesis), D. Pesu; “TBD,” under supervision, University of Wollongong

Honours Thesis, M. Borkent; Flinders University, 1983

Honours Thesis, G. Glonek; Flinders University, 1983

## **Service**

### *Professional offices held:*

Vice President, South Australian Branch, Statistical Society of Australia, 1978-1979

President, South Australian Branch, Statistical Society of Australia, 1979-1980

Secretary/Treasurer, American Statistical Association Section on Statistical Computing, 1990

Committee on Fellows, American Statistical Association Section on Statistical Graphics, 1990-1992 (Chair, 1992)

Member, Publications Committee, American Statistical Association Section on Statistics and the Environment, 1991-1993

Member, Committee on Symposia and Conferences, American Statistical Association Section on Statistics and the Environment, 1991-1993

Elected to the faculty of Ecology and Evolutionary Biology Program, Iowa State University, 1995-1998

Chair Elect, American Statistical Association (ASA) Section on Statistics and the Environment, 1997

Chair, ASA Section on Statistics and the Environment, 1998

Past Chair, ASA Section on Statistics and the Environment, 1999

Member, ASA Advisory Committee on Climate Change, 2011-2017

Member, Census Scientific Advisory Committee, US Census Bureau, 2011-2017

Member, COPSS Fisher Award Selection Committee, 2015, 2017-2020

Member, Selection Committee, Abdel El-Shaarawi Young Researcher's Award, The International Environmetrics Society, 2017-2019

Member, Selection Committee, Esri/ISI Student Poster Competition, International Statistical Institute, 2018-2019

*Editorial duties:*

Associate Editor, Theory and Methods, *Journal of the American Statistical Association*, 1984-1988, 2002-2005

Editorial Board, *Chemometrics and Intelligent Laboratory Systems*, 1986-1997

Associate Editor, *Journal of Statistical Planning and Inference*, 1992-1997

Editorial Board, *Statistical Inference for Stochastic Processes*, 2000-2005

Advisory Board, Wiley Book Series in Probability and Statistics, 1996-present

Editorial Advisory Board, *Environmetrics*, 2000-2010

Editorial Board, *Statistics Surveys*, 2005-present

Editorial Board, *Mathematical Geosciences*, 2007-2016

Advisory Editor, *Mathematical Geosciences*, 2017-present

Associate Editor, *Journal of Environmental Statistics*, 2008-present

Associate Editor, *Environmetrics*, 2010-present

Guest Editor, special issue on Time Series in the Environmental Sciences, *Journal of Time Series Analysis*, 2010-2011

Associate Editor, *Spatial Statistics*, 2012-present

Guest Editor, submission to *Proceedings of the National Academy of Sciences*, 2013

Designate Senior Associate Editor, *Environmetrics*, 2014-present

Associate Editor, *Journal of Spatial Econometrics*, 2019-present

*Scientific committees and affiliations:*

Organizer and Chairman, Invited Paper Session on "Statistics of Spatial Data," American Statistical Association Annual Meeting, Chicago, IL, 1986

Member, Scientific Committee, Third International Geostatistics Congress, Avignon, France, 1988

Member, Organizing Committee, Institute for Mathematics and its Applications Summer Program: Robustness, Diagnostics, Computing, and Graphics in Statistics, Minneapolis, MN, 1989

Organizer and Chairman, Invited Paper Session on "Statistics for Spatial Data," Institute of Mathematical Statistics Spring



Meeting, Baltimore, MD, 1990

Co-organizer and Co-editor of Spatial Statistics Section of the First International Conference/Workshop on Integrating GIS and Environmental Modeling, Boulder, CO, 1991

Organizer and Chairman, Invited Paper Session on “Inference for Spatial Processes,” Institute of Mathematical Statistics Spring Meeting, Cincinnati, OH, 1992

Member, Scientific Committee, International Workshop on Statistics of Spatial Processes, Bari, Italy, 1993

Organizer, Invited Paper Session on “Statistics for Spatial Data,” American Statistical Association Annual Meeting, San Francisco, CA, 1993

Member, Program Committee, Computing Science and Statistics, 27th Symposium on the Interface, Pittsburgh, PA, 1995

Organizer, Invited Paper Session on “Spatial Statistics for Environmental Data,” 27th Symposium on the Interface, Pittsburgh, PA, 1995

Member, Science Advisory Board, Second International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Fort Collins, CO, 1996

Member, Scientific Committee, First European Conference on Geostatistics for Environmental Applications, Lisbon, Portugal, 1996

Member, Scientific Program Committee of the Bernoulli Society, 51st International Statistical Institute Session, Istanbul, Turkey, 1997

Elected Vice-Chairman of World Health Organization Workshop on Disease Mapping and Risk Assessment for Public Health Decision Making, Rome, Italy, 1997

Member, Science Advisory Board, Third International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Quebec City, Canada, 1998

Member, Scientific Committee, Second European Conference on Geostatistics for Environmental Applications, geoENV98, Valencia, Spain, 1998

Organizer, Invited Paper Session on “Spatial Methodology for Minefield Detection,” American Statistical Association Annual Meeting, Baltimore, MD, 1999

Member, Steering Committee, International Conference on Discrete Global Grids, Santa Barbara, CA, 2000

Member, Science Advisory Board, Fourth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Amsterdam, The Netherlands, 2000

Organizer, Workshop on Hierarchical Modeling in Environmental Statistics, Columbus, OH, 2000

Organizer, Short Course on Bayesian Hierarchical Statistics, Columbus, OH, 2000

Member, Program Committee, First International Conference on Geographic Information Science (GIScience 2000), Savannah, GA, 2000

Member, RSS2001 Conference Committee, Royal Statistical Society, Glasgow, Scotland, 2001

Organizer, Invited Paper Meeting on “Spatial Statistical Modeling with Environmental Applications,” International Statistical Institute, 53rd Session, Seoul, Korea, 2001

Member, Scientific Advisory Committee, Accuracy 2002 Symposium, Melbourne, Australia, 2002

Member, Program Committee, 34th Symposium on the Interface of Computer Science and Statistics, Montreal, Canada, 2002

Organizer, Invited Paper Session on “Spatial Statistics,” 34th Symposium on the Interface of Computer Science and Statistics, Montreal, Canada, 2002

Member, Scientific Program Advisory Group, Australian Statistical Conference, 2002-2008

Member, Program Committee, Second International Conference on GIScience 2002, Boulder, CO, 2002

Organizer, Invited Paper Session on “Spatio-Temporal Modeling,” International Conference on Environmental Statistics and Health, Santiago de Compostella, Spain, 2003

Member, Scientific Committee, International Workshop in Applied Probability, Piraeus, Greece, 2004

Member, Organizing Committee, Fifth European Conference on Geostatistics for Environmental Applications, Neuchatel, Switzerland, 2004

Member, Program Committee, Third International Conference on GIScience, College Park, MD, 2004

Member, Ambassador Program, 55th Session of the International Statistical Institute, Sydney, Australia, 2005

Organizer, Invited Paper Session on “Bayesian Hierarchical Modeling of Exposure Pathways,” American Statistical Association Annual Meeting, Seattle, WA, 2006

Chair, Program Committee, Uncertainty in Ecological Analysis Workshop, Mathematical Biosciences Institute, The Ohio State University, Columbus, OH, 2006

Member, Scientific Committee, 9th World Meeting of the International Society for Bayesian Analysis, Hamilton Island, Australia, 2007-2008

Member, International Advisory Board, 10th European Conference in Image Analysis and Stereology, Milan, Italy, 2008-2009

Affiliate, Institute for Sensing Systems, The Ohio State University, Columbus, OH, 2007-2012

Affiliate, Olentangy River Wetland Research Park, The Ohio State University, Columbus, OH, 2008-2012

Program Leader, SAMSI Program on Space-Time Analysis for Environmental Mapping, Epidemiology, and Climate Change, SAMSI, Research Triangle Park, NC, 2008-2010

Member, Scientific Committee, The International Environmetrics Society (TIES) 2012 Meeting, Hyderabad, India, 2010-2012

Member, Scientific Committee, Ninth Geostatistical Conference on Environmental Applications, geoENV2012, Valencia, Spain, 2011-2012

Chair, Organizing Committee, SSES Conference on Spatial and Environmental Statistics, The Ohio State University, Columbus, OH, 2012

Affiliate, Section 398, Science Data Understanding, Jet Propulsion Laboratory, Pasadena, CA, 2013-present

Organizer, Invited Paper Session on “Research Themes at the National Institute for Applied Statistics Research Australia (NIASRA),” 2014 Australian Statistical Conference (ASC2014), Sydney, Australia, 2013-2014

Member, Scientific Committee, The International Environmetrics Society (TIES) 2014 Meeting, Guangzhou, China, 2014

Co-organizer and Chairman, Invited Paper Session on “Statistical Inference with Dependent Data,” ISI Regional Statistics Conference, Kuala Lumpur, Malaysia, 2014

Member, Scientific Committee, 2016 Spatial Econometrics Association Conference, Rome, Italy, 2015-2016

Member, Program Committee, Australian Statistical Conference 2016, Canberra, Australia, 2015-2016

Co-organizer, 2016 Workshop on Spatial and Spatio-Temporal Design and Analysis for Official Statistics, Columbia, MO, 2015-2016

Organizer, Invited Paper Session on “Accounting for Statistical Dependence in Socio-Economic Data,” World Statistics Congress – ISI2017, Marrakech, Morocco, 2016-2017

Member, Scientific Committee, 2017 Conference of the International Association for Mathematical Geosciences, Fremantle, Australia, 2016-2017

Member, Scientific Program Committee, Australian Statistical Conference 2018, Melbourne, Australia, 2016-2018

*National and international advisory committees:*

Member, American Statistical Association Committee on Energy Statistics, an advisory body to the US Energy Information Administration, 1988-1990

Member, American Statistical Association's Review Committee for the Environmental Protection Agency's EMAP (Environmental Monitoring and Assessment Program), 1989-1994

Member, National Research Council's Panel on Spatial Statistics and Digital Image Processing, 1990

Member, Advisory Committee, National Science Foundation Geophysical Statistics Project at National Center for Atmospheric Research, 1995-2001 (Chair, 2001)

Member, National Science Foundation Review Panel on Knowledge and Distributed Intelligence (KDI), 1998

Member, Review Panel of Biometry Division, Institut National de Recherche Agronomique, France, 2002

Member, Scientific Advisory Committee, US EPA grant on Statistical Survey Design and Analysis for Aquatic Resources, Colorado State University and Oregon State University, 2002-2005

Member, US EPA Science Advisory Board, Environmental Health Committee, 2003-2006

Member, Review Panel of Biostatistical Methods and Research Design Study Section, National Institutes of Health, 2004

Member, US EPA Science Advisory Board, Exposure and Human Health Committee, 2006-2009

Member, Census Scientific Advisory Committee, US Census Bureau, 2011-2017

Member, NASA OCO-2 Science Team, Jet Propulsion Laboratory, 2011-present

Member, Australia Antarctic Science Council, Australian Antarctic Division, 2019-2022

*University service:*

Member and chair of various committees (including promotion and tenure, search, program review, graduate examination, curriculum) at the departmental, college, and university level. Significant past committee service has been with regard to establishing and maintaining a strong Geographic Information System (GIS) facility at Iowa State University; planning and directing the Program in Spatial Statistics and Environmental Statistics (SSES) at The Ohio State University (OSU); member of the OSU Biostatistics Advisory Committee, 2004-2012; member of the OSU Distinguished Scholar Award Committee, 2006-2009; OSU Arts and Sciences College Senator representing the Department of Statistics, 2006-2009, 2010-2012; foundation Director of the Centre for Environmental Informatics (CEI) at the University of Wollongong

*Reviewing:*

Reviewer of manuscripts for Acta Biotheoretica, Advances in Applied Probability, Advances in Statistical Climatology, Meteorology, and Oceanography, American Journal of Epidemiology, American Statistician, Annals of Applied Statistics, Annals of the Institute of Statistical Mathematics, Annals of Probability, Annals of Statistics, Applied Mathematics and Optimization, Applied Statistics, Astrophysical Journal, Australian and New Zealand Journal of Statistics, Bernoulli, Biometrics, Biometrika, Canadian Journal of Statistics, Cancer Research, Chemometrics and Intelligent Laboratory Systems, Comptes Rendus de l'Académie des Sciences (France), Computational Statistics and Data Analysis, Computers and Geosciences, Cogent Geoscience, Ecology, Econometrica, Environmetrics, European Journal of Soil Science, Forest Science, Freshwater Biology, Geoderma, Geographical Analysis, Geoscientific Model Development, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Geoscience and Remote Sensing, IEEE Transactions on Information Theory, IEEE Transactions on Signal Processing, IEEE Transactions on Vehicular Technology, International Journal of Remote Sensing, International Regional Science Review, International Statistical Review, Journal of Agricultural, Biological and Environmental Statistics, Journal of the American Statistical Association, Journal of Applied

Probability, Journal of Applied Statistics, Journal of Computational and Graphical Statistics, Journal of Contaminant Hydrology, Journal of Econometrics, Journal of Environmental Economics and Management, Journal of Geophysical Research, Journal of Hydrology, Journal of the Indian Society of Agricultural Statistics, Journal of the Italian Statistical Society, Journal of Multivariate Analysis, Journal of Official Statistics, Journal of Precision Agriculture, Journal of the Royal Statistical Society, Journal of Statistical Planning and Inference, Journal of Statistical Software, Journal of Time Series Analysis, Landscape Ecology, Linear Algebra and its Applications, Mathematical Geology, Mathematical Geosciences, *Metrika*, Papers in Regional Science, Pattern Recognition, Perceptual and Motor Skills Psychological Reports, Proceedings of the American Mathematical Society, Proceedings of the National Academy of Sciences, *Psychometrika*, Regional Science and Urban Economics, Scandinavian Journal of Statistics, Science Advances, Soil Science Society of America Journal, Spatial Statistics, *Statistica Neerlandica*, *Statistica Sinica*, Statistical Inference for Stochastic Processes, Statistical Methods and Applications, Statistical Science, Statistics, Statistics and Computing, Statistics and Probability Letters, Statistics in Medicine, Statistics Surveys, Stochastic Environmental Research and Risk Assessment, Stochastic Models, Technometrics, Test, Vegetatio, Water Resources Research, WIREs

Reviewer of articles for Mathematical Reviews and Zentralblatt für Mathematik

Reviewer of research proposals for National Science Foundation, National Institutes of Health, National Aeronautics and Space Administration, National Security Agency, Air Force Office of Scientific Research, Army Research Office, Environmental Protection Agency, Guggenheim Foundation, Natural Sciences and Engineering Research Council of Canada, U.K. Science and Engineering Research Council, Scottish Office, Australian Research Council, Iowa Academy of Sciences, M.J. Murdock Charitable Trust, MONTS (Montana University System), Swiss National Science Foundation, Hong Kong Research Grants Council, Austrian Science Foundation, Israel Science Foundation, Royal Society of New Zealand, Australian Academy of Technological Sciences and Engineering, Agence National de Recherche (France)

Reviewer of US National Research Council Reports

Reviewer in the External Review Program of the Statistical and Psychometric Services Division, Educational Testing Service, 1985

Reviewer of promotion and tenure cases for various Australian, U.S., and other universities, 1986-present

External Examiner for Ph.D. theses presented to Australian National University, 1978, 1980; Latrobe University, 1981; Macquarie University, 1983, 1986; University of the Witwatersrand, 1995; University of Western Australia, 1997, 1999, 2001; University of Montreal, 2000; University of Wageningen, 2002; University of Toulouse, 2005; University of Newcastle, 2006; University of Paris, 2007; University of Toulouse, 2009; University of Paris, 2011

External Examiner for Masters thesis presented to University of Western Australia, 2018

#### *Statistical consulting:*

Many research problems from other disciplines have a statistical component. I have been consultant statistician on: design and analysis of breast cancer trials (Medicine), sampling English syntax from various books (Humanities), an urban study of the activities of West Lakes residents (Geography), change of styles of French authors through the 18th, 19th and 20th Centuries (Humanities), a comparison of swabs used in surgery (Medicine), an analysis of tree varieties (Biology), a comparison of delinquency among males and females in South Australia (Sociology), linear regression problems (Chemistry), pancreatic islet transplantation in diabetic rats (Medicine), muscle-tissue excitation (Medicine), tumor growth curves (Medicine), a study of left-handedness (Psychology), investigating mother-infant interaction (Education), detecting chemotaxis in neutrophils (Medicine), studying the needs of nurses' education in South Australia (Education), causes of absenteeism in high schools (Education), prediction of student numbers (Administration), elective colon surgery trials (Medicine), analysis of call numbers (Library), psychosomatic aspects in rheumatoid arthritis (Medicine), drug effectiveness for asthmatics (Medicine), in vitro fertilization (Medicine), somatotype rating of sportsmen and sportswomen (Education), estimating seal populations (Biology), spatial analysis of soil-water infiltration (Agriculture), point-pattern analysis of behavioral sequences (Veterinary Medicine), point-of-purchase study (Economics), defining the market area of meat-packing plants (Economics), perception of women's business clothing (Textiles and Clothing), parent-offspring mixture models (Genetics), teenage body satisfaction (Textiles and Clothing), simulating reacting turbulent flow (Chemical

Engineering), generalized least squares fitting with constraints (Electrical Engineering), management of Gopher tortoises (Animal Ecology), spatial analysis of farmland salinity (Agriculture), quality of health care (Public Health), doctor-level estimation of prescriptions (Pharmaceutics), spatial design of integrated circuit manufacturing (Manufacturing Design), toxic waste-site characterization (Environmental Science), prediction of snow-water equivalent (Hydrology), contamination of water by agricultural waste (Environmental Science), spatial pattern of soybean infestation (Plant Pathology), estimation of finish parameters (Optical Engineering), optimal spacing of ice-core locations in Antarctica (Glaciology), precision agriculture (Agriculture), statistical modeling of geophysical processes (Atmospheric Sciences), remote sensing of vegetation and soils to assess agricultural production (Agriculture), prawn stock assessment in Spencer Gulf (Fisheries), design of aerosol-volume-closure experiments (Atmospheric Physics), wetland construction (Agricultural Engineering), locations of logjams on a river (Natural Resources), classification of compounds from mass-spectrogram data (Chemistry), spatial distribution of racoon rabies (Epidemiology), design of a study of wetland characteristics (Natural Resources), analysis of surface-water run-off into waters of the Great Barrier Reef (Hydrology), statistical design and analysis of NEON: National Ecological Observatory Network (Ecology), rural versus urban access to child mental health services in Ohio (Sociology), control charting of probabilities (Integrated Systems Engineering), tests for clustering of Type 1 and Type 2 neurons (Computer Science and Engineering), mapping for marine rescue (Marine Safety), spatio-temporal statistics in operations analysis (Defense), spatial modeling of paleo data from Antarctic moss (Biology), geodesign (Urban Planning), prediction of the age of stone tools (Archeology), design of micro-meteorological experiments to determine effect of logging in NSW forests (Environmental Management)

### **Current Research Interests**

Theory and applications of spatial and spatio-temporal stochastic models; Bayes and empirical-Bayes methods for hierarchical statistical models; environmental informatics; statistical remote sensing

### **Research Experience (amounts shown do not include University cost share)**

Joint Principal Investigator, Australian Research Grants Scheme; "Project Forecast," 1977-1982 (A\$65,000)

Principal Investigator, Flinders University Research Budget; "Project Robustness," 1983 (A\$5,000)

Principal Investigator, Iowa State University (NIH); "Modelling Tumor Growth," 1984 (\$2,500)

Principal Investigator, National Science Foundation; "Spatial Statistics," 1985-1987 (\$36,000)

Principal Investigator, Bureau of the Census; "Robustness of Regression Estimates of Decennial Census Coverage Error," 1986 (\$8,000)

Principal Investigator, Bureau of the Census; "Robustness of Empirical Bayes Estimators of Decennial Census Coverage Error," 1986-1987 (\$9,500)

Principal Investigator, Bureau of the Census; "Quantile Estimators of Decennial Census Coverage Error," 1987-1988 (\$15,500)

Principal Investigator, National Science Foundation; "Statistics of Spatial Data," 1987-1989 (\$105,000)

Principal Investigator, Bureau of the Census; "Empirical Bayes Estimation of Undercount: Effects of Misweighting," 1988-1989 (\$28,000)

Principal Investigator, National Science Foundation; "Statistics for Spatial Data," 1989-1990 (\$15,000)

Principal Investigator, Bureau of the Census; "Weighted Smoothing of Estimated Undercount," 1989-1990 (\$31,000)

Principal Investigator, Bureau of the Census; "Estimation of Model Variance in Empirical Bayes Smoothing," 1990-1991 (\$19,000)

Principal Investigator, National Science Foundation; "Statistics for Spatial Data," 1990-1992 (\$86,000)

Principal Investigator, Iowa State University (Carver Grant); "Digital Image Analysis Using Spatial Statistics," 1992 (\$14,000)

Principal Investigator, Ames Laboratory; "Change of Support Spatial Statistics Predictions," 1992 (\$13,000)

Principal Investigator, Texas Institute of Applied Environmental Research, Tarleton State University, Texas; “Spatial Statistics for Livestock and the Environment: A National Pilot Project,” 1992-1993 (\$20,000)

Principal Investigator (with J. L. Davidson as Co PI), National Science Foundation and National Security Agency; “Spatial Statistics with Image Algebra,” 1992-1994 (\$170,000)

Principal Investigator (with J. L. Davidson as Co PI), Office of Naval Research; “Spatial Stochastic Processes with Image Algebra,” 1992-1995 (\$251,000)

Principal Investigator (with D. H. Cook, M. S. Kaiser, S. N. Lahiri, J. J. Majure, and M.J. Daniels as Co PIs), Environmental Protection Agency; “Spatial Statistics Research Applied to Resource Monitoring Programs,” 1994-1999 (\$897,726)

Principal Investigator (with J. L. Davidson as Co PI), Office of Naval Research; “Inference for Spatial Stochastic Processes,” 1995-1998 (\$449,616)

Co-Principal Investigator (with D. L. Isaacson as PI and 6 other Co PIs), National Science Foundation; “Computing Equipment to Support Research in Statistics,” 1997-1998 (\$64,211)

Co-Principal Investigator (with H.S. Stern as PI), National Institutes of Health; “Inference for Extremes in Disease Maps of Small Areas,” 1998-2000 (\$70,936)

Principal Investigator, Office of Naval Research; “Statistical Inference for Change-of-Aperture Problems in Command and Control,” 1999-2002 (\$499,606)

Principal Investigator (with L.M. Berliner and C.K. Wikle as Co PIs), National Science Foundation/Environmental Protection Agency; “Hierarchical Statistical Analysis of Global and Regional Environmental Data,” 1999-2002 (\$325,000)

Principal Investigator, Environmental Protection Agency; “Workshop on Hierarchical Modeling in Environmental Statistics,” 2000 (\$15,020)

Principal Investigator, Office of Naval Research; “Spatial Statistics for Command and Control,” 2001-2004 (\$482,851)

Principal Investigator, San Diego State University Foundation and The Ohio State University Research Foundation; “Statistical Methods for Integration, Interpretation and Management of Command and Control (C2) Information,” 2002-2003 (\$45,000)

Principal Investigator (with L. M. Berliner and K. C. Jezek as Co-PIs), National Science Foundation; “Dynamics of Ice Streams: A Physical Statistical Approach,” 2002-2006 (\$366,525)

Principal Investigator, Commonwealth Scientific and Industrial Research Organization, Australia; “Prediction of Nonlinear Spatio-Temporal Functionals,” 2003-2004 (\$11,351)

Principal Investigator, Environmental Protection Agency/American Chemistry Council; “From Sources to Biomarkers: A Hierarchical Bayesian Approach for Human Exposure Modeling,” 2004-2009 (\$526,986)

Principal Investigator, Office of Naval Research; “Optimal Mapping when Datasets are Massive,” 2004-2007 (\$342,478)

Co-Principal Investigator (with T. Hsing as PI), Oak Ridge National Laboratories; “Statistical Analysis of Spatio-Temporal Models with Application to Sensor Networks,” 2005-2007 (\$120,000)

Principal Investigator, National Science Foundation; “Spatial Prediction of Surfaces in the Presence of Uncertainty,” 2007-2009 (\$110,000)

Principal Investigator, National Center for Atmospheric Research; “Spatial Random Effects and Multiresolution Lattice Models,” 2008-2009 (\$40,997)

Principal Investigator, Office of Naval Research; “Uncertainties on Networks,” 2008-2011 (\$302,904)

Co-Principal Investigator (with A. Michalak, U. Michigan, as PI), National Aeronautics and Space Administration (NASA); “Mapping Global CO<sub>2</sub>: Development and Application of Geostatistical Algorithms for Gap Filling and Uncertainty Assessment for the Orbiting Carbon Observatory,” 2008-2011 (\$807,562; OSU subcontract: \$246,181)

Co-Principal Investigator (with A. Braverman, JPL, as PI), NASA; “Geostatistical Data Fusion for Remote Sensing

Applications,” 2009-2012 (\$1,257,850; OSU subcontract: \$365,228)

IBM Faculty Award; “Bayesian Spatio-Temporal Analysis of Very Large Datasets,” 2009-2010 (\$5,000)

Principal Investigator, Jet Propulsion Laboratory, NASA; “Statistical Properties of OCO-2 Retrievals,” 2010-2011 (\$142,912)

Principal Investigator, Naval Surface Warfare Center Dahlgren Division, Department of the Navy; “Spatio-Temporal Statistical Methods,” 2011 (\$64,623)

Co-Principal Investigator (with A. Braverman, JPL, as PI), NASA; “Likelihood-Based Quantification of Agreement between Climate Model Output and NASA Data Records,” 2011-2015 (\$1,329,700; OSU subcontract: \$229,274)

Co-Principal Investigator (with S. Holan, U. Missouri, as PI), NSF; “NCRN-MN: Improving the Interpretability and Usability of the American Community Survey through Hierarchical Multiscale Spatio-Temporal Statistical Models,” 2011-2016 (\$2,854,170; OSU subcontract: \$727,200)

Principal Investigator, JPL; “Assessment of Statistical Properties of Atmospheric InfraRed Sounder (AIRS) CO<sub>2</sub> Retrievals,” 2011-2012 (\$50,000)

Co-Principal Investigator (with A. Braverman, JPL, as PI), NASA; “Multivariate Data Fusion and Uncertainty Quantification for Remote Sensing,” 2012-2015 (\$1,496,280; Cressie subcontract: \$400,776)

Principal Investigator, NASA; “Precisions and Accuracies of Estimated XCO<sub>2</sub> for the OCO-2 Mission,” and Science Team member of NASA OCO-2 Mission, 2013-2017 (\$208,002)

Chief Investigator, CSIRO (Flagship Project); “Addressing the Reduction of GHG Emissions from Agriculture and Forestry Production through Outcomes Delivered from the Statistical Sciences,” 2013-2014 (AU\$50,000)

Chief Investigator, Australian Research Council Discovery Project; “Spatio-Temporal Statistics and its Application to Remote Sensing,” 2015-2018 (AU\$402,500)

Manager of Australian Bureau of Statistics contract (N. Cressie and A. Zammit Mangion Co Investigators); “Spatio-Temporal Small Area Estimation,” 2017-2018 (AU\$70,000)

Chief (and lead) Investigator, Australian Research Council Discovery Project; “Bayesian Inversion and Computation Applied to Atmospheric Flux Fields,” 2019-2022 (AU\$505,000)

## **Professional Affiliations**

American Statistical Association  
Australian Academy of Science  
Institute of Mathematical Statistics  
International Association for Mathematical Geosciences  
International Society for Bayesian Analysis  
International Statistical Institute  
Royal Statistical Society  
Spatial Econometrics Association  
Statistical Society of Australia  
The International Environmetrics Society

## **Professional Activities (for 2016, 2017, 2018, 2019)**

### **2016**

February	Co-convenor of Spatio-Temporal Statistics Summit, Esri, Redlands, CA, USA
March	Attended NASA OCO-2 Science Team Meeting, Pasadena, CA, USA
April	Invited speaker at University of Wollongong Maths Society, Wollongong, Australia; “Statistics, mathematics, and rocket science”

- Participated in the US Census Bureau's Scientific Advisory Committee Meeting, Suitland, MD, USA
- May Presented a poster (with co-authors R. McDonald and A. Zammit-Mangion) at Workshop on Spatial and Spatio-Temporal Design and Analysis for Official Statistics, Columbia, MO, USA; "Bivariate modelling of poverty and unemployment in Missouri." Also co-organizer of the Workshop in Columbia, MO
- June Invited presentation to the JASON advisory group, San Diego, CA, USA; "Spatio-temporal data fusion for satellite remote sensing"
- August Presented an invited paper (with co-authors A. Zammit-Mangion, A. Braverman, and J. Hobbs) at Joint Statistical Meetings, Chicago, IL, USA; "Uncertainties in spatio-temporal prediction for carbon cycle science: From satellite data to surface fluxes." Also co-authored an invited paper (with S. Burden); "Figures of merit for simultaneous inference and comparisons in simulation experiments." Also co-authored a contributed paper (with A. Zammit-Mangion); "Non-Gaussian bivariate modeling for geophysical inversions." Also co-authored a contributed paper (with B. Zhang); "Hierarchical statistical analysis of binary spatial data using kernel principal component analysis." Also co-authored a contributed paper (with J. Hobbs et al.); "Remote sensing retrievals for atmospheric carbon dioxide: Quantifying uncertainty in the presence of nonlinearity and nuisance parameters." Also co-authored a contributed paper (with E. Kang et al.); "Statistical downscaling with large spatial data and its applications"
- September Presented Keynote Address (Barnett Lecture), Royal Statistical Society 2016 Conference, Manchester, UK; "The Carbon Club: Measuring and mapping carbon dioxide from remote sensing satellite data"
- Participated in the US Census Bureau's Scientific Advisory Committee Meeting, Suitland, MD, USA
- Invited speaker at NASA's Jet Propulsion Laboratory Carbon Club, Pasadena, CA; "The Carbon Club: Measuring and mapping carbon dioxide from remote sensing satellite data"
- October Invited speaker at Young Engineers of Australia – Industry Leaders Share evening, Wollongong, Australia; "Statistics, mathematics, and rocket science"
- Invited speaker at School of Mathematics and Statistics Colloquium, University of Melbourne, Australia; "Measuring and mapping carbon dioxide from remote sensing satellite data"
- Invited speaker at School of Mathematical Sciences, University of Adelaide, Australia; "Measuring and mapping carbon dioxide from remote sensing satellite data"
- Co-authored an invited poster (with B. Zhang and D. Wunch) at NASA OCO-2 Science Team Meeting, Boulder, CO, USA; "Quantifying weights for fitting an errors-in-variables model to TCCON and OCO-2 calibration data"
- November Invited speaker at ACEMS and Sydney Plant Ecophysiology Workshop, University of Technology Sydney, Australia; "Measuring and mapping carbon dioxide from remote sensing satellite data"
- December Presented an invited paper at Australian Statistical Conference 2016, Canberra, Australia; "A conditional approach to multivariate spatial modelling." Also invited panel discussant in the session, "Research Possibilities in Climatology"

## 2017

- January Invited presentation (via WebEx) to National Academy of Sciences discussion (of Yield Models for the National Agricultural Statistics Services), Washington, DC, USA; "Fusing satellite data"
- February Invited Speaker at Frontiers in Social Statistics Methodology Workshop, Sydney, Australia; "Spatial modelling of multivariate socio-economic data"



- March Presented Al Kindi Lectures at King Abdullah University of Science and Technology (KAUST), Jeddah, Saudi Arabia; “The carbon club”; and “A conditional approach to multivariate spatial modelling”  
Participated in Climate Science Day, US Congress, Washington, DC, USA  
Attended NASA OCO-2 Science Team Meeting and gave speed talk on CO<sub>2</sub>-flux research, Pasadena, CA, USA  
Participated in US Census Bureau’s Scientific Advisory Committee Meeting, Suitland, MD, USA
- April Co-authored two invited papers at European Geophysical Union (EGU) General Assembly 2017, Vienna, Austria; (with A. Zammit-Mangion et al.) “Global CO<sub>2</sub> flux inversions from remote-sensing data with systematic errors using hierarchical statistical models”; (with D. Wright et al.) “The Ecological Marine Units as a framework for collaborative data exploration, distribution, and knowledge building”  
Participated in NSF-Census Research Network Spring Meeting, US Census Bureau, Suitland, MD, USA
- May Presented an invited seminar (with A. Zammit-Mangion) at Australian Bureau of Statistics, Belconnen, ACT, Australia; “A conditional approach to multivariate spatial covariance models”  
Invited seminar speaker, Institute of Statistical Science, Academia Sinica, Taipei, Taiwan; “The Carbon Club: Measuring and mapping carbon dioxide from remote sensing satellite data”  
Presented an invited paper at Symposium on Complex Data Analysis, Hsinchu, Taiwan; “A conditional approach to multivariate spatial modelling”
- July Presented Keynote Address, International Conference on Robust Statistics 2017, University of Wollongong, Australia; “Robust statistical methods in the geosciences”  
Presented an invited paper (with co-authors R. McDonald and A. Zammit-Mangion) at Small Area Estimation Conference, SAE 2017, Paris, France; “A spatial conditional approach to modelling unemployment and poverty in the counties of Missouri”
- August Presented an invited paper at Opening Workshop of SAMSI’s year-long Program on Mathematical and Statistical Methods for Climate and Earth System (CLIM), Research Triangle, North Carolina, USA; “A bird’s-eye view of statistics for remote sensing data”
- September Presented Keynote Address (Matheron Lecture), International Association of Mathematical Geosciences 2017 Conference, Fremantle, Australia; “A conditional approach to multivariate geostatistics”
- October Attended NASA OCO-2 Science Team Meeting and gave two speed talks, one on modelling spatial dependence of OCO-2 retrievals and other on statistical approaches to generate Level 3 products  
Presented the Belz Lecture to Statistical Society of Australia, Victorian Branch, Melbourne. “A bird’s-eye view of statistics for remote sensing data”
- November Presented Keynote Address, ANU Research School of Finance, Actuarial Studies and Applied Statistics 2017 Summer Camp, Murrumbidgee, NSW; “A bird’s-eye view of statistics for remote sensing data”

## 2018

- March Attended NASA OCO-2 Science Team Meeting and gave an invited plenary talk in a session on Uncertainty Quantification, Pasadena, California; “Optimal aggregation and minimum uncertainty: Weighted aggregation of retrievals”
- April Presented an invited paper at Workshop on Forecasting from Complexity, Institute for Mathematics

and its Applications, Minneapolis, Minnesota; “Inference for spatio-temporal changes of Arctic sea ice”

- May Invited seminar speaker, Washington Statistical Society, Washington, DC; “Inference for count data”  
New Fellow Presentation at 2018 Science at the Shine Dome Conference, Australian Academy of Science, Canberra, ACT, Australia; “Atmospheric carbon and the statistical science of measuring, mapping, and uncertainty quantification”
- June Invited seminar speaker (with A. Zammit Mangion) at Australian Bureau of Statistics, Belconnen, ACT, Australia; “Small area estimation of labour force unemployment using a spatio-temporal Bayesian hierarchical model”  
Invited seminar speaker in NIASRA Seminar Series, University of Wollongong, Australia; “Atmospheric carbon and the statistical science of measuring, mapping, and uncertainty quantification”
- July Presented an invited paper at Joint Statistical Meetings, Vancouver, BC, Canada; “Traversing the space-time cube”
- August Presented a contributed paper at Australian Statistical Conference 2018, Melbourne, Australia; “Optimally weighted aggregations of satellite remote sensing data”
- September Attended IAOS-OECD 2018 Conference, International Association of Official Statistics, Paris, France
- November Presented Moyal Lecture (and received Moyal Medal), Macquarie University, Sydney, Australia; “Statistics, mathematics, and rocket science”  
Invited seminar speaker, Curtin Institute for Computation, Curtin University, Perth, Australia; “Atmospheric carbon and the statistical science of measuring, mapping, and uncertainty quantification”  
Invited speaker at CIRM Conference on Bayesian Statistics in the Big Data Era, Luminy, France; “Inference for spatio-temporal changes of Arctic sea ice”

## 2019

- March Invited speaker, Spatio-Temporal Statistics Reading Group, University of Missouri, Columbia, MO; “False discovery rates to detect signals from incomplete, spatially aggregated data”  
Presented an invited paper at OCO-2 Uncertainty Quantification Breakout Meeting, Caltech, Pasadena, CA; “ False discovery rates to detect signals from incomplete, spatially aggregated data”
- April Invited seminar speaker, School of Mathematics and Statistics, University of Sydney, Australia; “Inference for spatio-temporal changes of Arctic sea ice”  
Co-presented a 1.5-day short course (with A. Zammit Mangion) for Centre for Environmental Informatics, University of Wollongong, Sydney, Australia; “Spatio-temporal statistics with R”
- May Invited seminar speaker, Department of Mathematics, University of Montpellier, France; “Inference for spatio-temporal changes of sea ice”  
Presented a contributed paper at Bayes2019, Lyon, France; “Bayesian forecasting of infectious diseases with SIRS models”

## **Publications: Noel Cressie**

### *Books:*

*Goodness-of-Fit Statistics for Discrete Multivariate Data*, by Timothy R. C. Read and **Noel A. C. Cressie**. Springer, New York, NY, 1988 (211 pp.).

*Statistics for Spatial Data*, by **Noel A. C. Cressie**. Wiley, New York, NY, 1991 (900 pp.). Revised edition: Wiley, New York, NY, 1993 (900 pp.). Paperback edition in the Wiley Classics Library: Wiley, Hoboken, NJ, 2015 (900 pp.).

*Statistics for Spatio-Temporal Data*, by **Noel Cressie** and Christopher K. Wikle. Wiley, Hoboken, NJ, 2011 (588 pp.).

*Spatio-Temporal Statistics with R*, by Christopher K. Wikle, Andrew Zammit-Mangion, and **Noel Cressie**. CRC/Chapman and Hall, Boca Raton, FL, 2019 (380 pp.).

### *Refereed Articles:*

#### **1974**

**Cressie, N.** (1974). A two-dimensional random walk in the presence of a partially reflecting barrier. *Journal of Applied Probability*, **11**, 199-205.

#### **1975**

**Cressie, N.** (1975). A note on the behaviour of the stable distributions for small index  $\alpha$ . *Zeitschrift fur Wahrscheinlichkeitstheorie und verwandte Gebiete*, **33**, 61-64.

Lord, F. M. and **Cressie, N.** (1975). An empirical Bayes procedure for finding an interval estimate. *Sankhyā B*, **37**, 1-9.

#### **1976**

**Cressie, N.** (1976). On the logarithms of high-order spacings. *Biometrika*, **63**, 343-355.

#### **1977**

**Cressie, N.** (1977). On some properties of the scan statistic on the circle and the line. *Journal of Applied Probability*, **14**, 272-283.

**Cressie, N.** (1977). The minimum of higher order gaps. *Australian Journal of Statistics*, **19**, 132-143.

#### **1978**

**Cressie, N.** (1978). A strong limit theorem for random sets. *Advances in Applied Probability (Supplement)*, **10**, 36-46.

**Cressie, N.** (1978). Power results for tests based on high-order gaps. *Biometrika*, **65**, 214-218.

**Cressie, N.** (1978). The exponential and power data transformations. *The Statistician*, **27**, 57-60.

**Cressie, N.** (1978). Estimation of the integral of a stochastic process. *Bulletin of the Australian Mathematical Society*, **18**, 83-93.

**Cressie, N.** (1978). A finely tuned continuity correction. *Annals of the Institute of Statistical Mathematics*, **30**, 435-442.

**Cressie, N.** (1978). Testing for the equality of two binomial proportions. *Annals of the Institute of Statistical Mathematics*, **30**, 421-427.

**Cressie, N. A. C.** (1978). Removing nonadditivity from two-way tables with one observation per cell. *Biometrics*, **34**, 505-513.

**1979**

- Cressie, N.** (1979). A central limit theorem for random sets. *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete*, **49**, 37-47.
- Cressie, N.** (1979). An optimal statistic based on higher order gaps. *Biometrika*, **66**, 619-627.
- Cressie, N.** (1979). A quick and easy empirical Bayes estimate of true scores. *Sankhyā B*, **41**, 101-108.
- Cressie, N. A. C.** and Keightley, D. D. (1979). The underlying structure of the direct linear plot with application to the analysis of hormone-receptor interactions. *Journal of Steroid Biochemistry*, **11**, 1173-1180.

**1980**

- Cressie, N.** (1980). Relaxing assumptions in the one sample t-test. *Australian Journal of Statistics*, **22**, 143-153.
- Cressie, N.** (1980). M-estimation in the presence of unequal scale. *Statistica Neerlandica*, **34**, 19-32.
- Cressie, N.** (1980). The asymptotic distribution of the scan statistic under uniformity. *Annals of Probability*, **8**, 828-840.
- Cressie, N.** and Hawkins, D. M. (1980). Robust estimation of the variogram: I. *Journal of the International Association for Mathematical Geology*, **12**, 115-125.
- Keightley, D. D. and **Cressie, N. A. C.** (1980). The Woolf plot is more reliable than the Scatchard plot in analysing data from hormone receptor assays. *Journal of Steroid Biochemistry*, **13**, 1317-1323.

**1981**

- Cressie, N.** (1981). Transformations and the jackknife. *Journal of the Royal Statistical Society, Series B*, **43**, 177-182.
- Cressie, N.** and Davis, R. W. (1981). The supremum distribution of another Gaussian process. *Journal of Applied Probability*, **18**, 131-138.

- Cressie, N.**, Davis, A. S., Folks, J. L., and Policello, G. E. II. (1981). The moment-generating function and negative integer moments. *American Statistician*, **35**, 148-150.
- Cressie, N. A. C.** and Keightley, D. D. (1981). Analysing data from hormone-receptor assays. *Biometrics*, **37**, 235-249.

**1982**

- Cressie, N.** (1982). A useful empirical Bayes identity. *Annals of Statistics*, **10**, 625-629.
- Cressie, N.** (1982). Playing safe with misweighted means. *Journal of the American Statistical Association*, **77**, 754-759.
- Cressie, N.** (1982). Empirical Bayes estimation for discrete distributions. *South African Statistical Journal*, **16**, 25-37.

**1983**

- Cressie, N.** (1983). Solving extrema problems in statistics by weighted sums. *The Mathematical Scientist*, **8**, 103-113.
- Cressie, N.** and Holland, P. W. (1983). Characterizing the manifest probabilities of latent trait models. *Psychometrika*, **48**, 129-141.
- Keightley, D. D., Fisher, R. J., and **Cressie, N. A. C.** (1983). Properties and interpretation of the Woolf and Scatchard plots in analysing data from steroid receptor assays. *Journal of Steroid Biochemistry*, **19**, 1407-1412.

**1984**

- Cressie, N.** (1984). Towards resistant geostatistics, in *Geostatistics for Natural Resources Characterization*, Part 1, eds G. Verly et al. Reidel, Dordrecht, NL, 21-44.
- Cressie, N.** and Glonek, G. (1984). Median based covariogram estimators reduce bias. *Statistics and Probability Letters*, **2**, 299-304.
- Cressie, N.** and Read, T. R. C. (1984). Multinomial goodness-of-fit tests. *Journal of the Royal Statistical Society, Series B*, **46**, 440-464.
- Cressie, N. A. C.**, Sheffield, L. J., and Whitford, H. J. (1984). Use of the one sample t-test in the real world. *Journal of Chronic Diseases*, **37**, 107-114.
- Hawkins, D. M. and **Cressie, N.** (1984). Robust kriging - a proposal. *Journal of the International Association for Mathematical Geology*, **16**, 3-18.

**1985**

- Cressie, N.** (1985). Fitting variogram models by weighted least squares. *Journal of the International Association for Mathematical Geology*, **17**, 563-586.
- Cressie, N.** (1985). When are relative variograms useful in geostatistics? *Journal of the International Association for Mathematical Geology*, **17**, 693-702.
- Cressie, N.** and Read, T. R. C. (1985). Do sudden infant deaths come in clusters? *Statistics and Decisions*, Supplement Issue **2**, 333-349.
- Cressie, N.** and Seheult, A. (1985). Empirical Bayes estimation in sampling inspection. *Biometrika*, **72**, 451-458.

**1986**

- Cressie, N.** (1986). Kriging nonstationary data. *Journal of the American Statistical Association*, **81**, 625-634.
- Cressie, N.** (1986). Using the scan statistic to test for uniformity, in *Goodness-of-Fit. Colloquia Mathematica Societatis Janos Bolyai*, Vol. **45**, eds P. Revesz et al. North Holland, Amsterdam, NL, 87-100.
- Cressie, N.** and Borkent, M. (1986). The moment generating function has its moments. *Journal of Statistical Planning and Inference*, **13**, 337-344.
- Cressie, N. A. C.** and Whitford, H. J. (1986). How to use the two sample t-test. *Biometrical Journal*, **28**, 131-148.
- Cressie, N. A. C.**, Withers, R. T., and Craig, N. P. (1986). The statistical analysis of somatotype data. *Yearbook of Physical Anthropology*, **29**, 197-208.
- Hamlett, J. M., Horton, R., and **Cressie, N. A. C.** (1986). Resistant and exploratory techniques for use in semivariogram analyses. *Soil Science Society of America Journal*, **50**, 868-875.

**1987**

- Cressie, N.** (1987). A nonparametric view of generalized covariances for kriging. *Mathematical Geology*, **19**, 425-449.
- Cressie, N.** and Laslett, G. M. (1987). Random set theory and problems of modeling. *SIAM Review*, **29**, 557-574.
- Cressie, N.** and Shaughnessy, P. (1987). Statistical methods for estimating numbers of Cape fur seal pups from aerial surveys. *Marine Mammal Science*, **3**, 297-307.

Cressie, N. A. C. and Horton, R. (1987). A robust-resistant spatial analysis of soil-water infiltration. *Water Resources Research*, **23**, 911-917.

### 1988

Cressie, N. (1988). Variogram, entry in *Encyclopedia of Statistical Sciences*, Vol. **9**, eds S. Kotz and N. L. Johnson. Wiley, New York, 489-491.

Cressie, N. (1988). Spatial prediction and ordinary kriging. *Mathematical Geology*, **20**, 405-421. (Erratum: 1989, Vol. **21**, pp. 493-494.)

Cressie, N. (1988). A graphical procedure for determining nonstationarity in time series. *Journal of the American Statistical Association*, **83**, 1108-1116. (Correction: 1990, Vol. **85**, p. 272.)

Cressie, N. (1988). When are census counts improved by adjustment? *Survey Methodology*, **14**, 191-208.

Cressie, N. and Morgan, P. B. (1988). The VPRT: Optimal sequential and nonsequential testing, in *Statistical Decision Theory and Related Topics IV*, Vol. **2**, eds S. S. Gupta and J. O. Berger. Springer, New York, 107-118.

Kernan, W. J., Mullenix, P. J., Kent, R., Hopper, D. L., and Cressie, N. A. C. (1988). Analysis of the time distribution and time sequence of behavioral acts. *International Journal of Neuroscience*, **43**, 35-51.

### 1989

Cressie, N. (1989). The many faces of spatial prediction, in *Geostatistics*, Vol. **1**, ed. M. Armstrong. Kluwer, Dordrecht, NL, 163-176.

Cressie, N. (1989). Ergodicity for time series and spatial processes. *Journal of Statistical Computation and Simulation*, **32**, 61-63.

Cressie, N. (1989). Geostatistics. *American Statistician*, **43**, 197-202.

Cressie, N. (1989). Empirical Bayes estimation of undercount in the Decennial Census. *Journal of the American Statistical Association*, **84**, 1033-1044.

Cressie, N. and Chan, N. H. (1989). Spatial modeling of regional variables. *Journal of the American Statistical Association*, **84**, 393-401.

Cressie, N. and Morgan, P. B. (1989). Design considerations for Neyman-Pearson and Wald hypothesis testing. *Metrika*, **36**, 317-325.

Cressie, N. and Read, T. R. C. (1989). Cressie-Read statistic, entry in *Encyclopedia of Statistical Sciences*, Supplement Volume, eds S. Kotz and N. L. Johnson. Wiley, New York, 37-39.

Cressie, N. and Read, T. R. C. (1989). Pearson's  $X^2$  and the loglikelihood ratio statistic  $G^2$ : A comparative review. *International Statistical Review*, **57**, 19-43.

Cressie, N. and Read, T. R. C. (1989). Spatial data analysis of regional counts. *Biometrical Journal*, **31**, 699-719.

Ruppert, D., Cressie, N. A. C., and Carroll, R. J. (1989). A transformation weighting model for estimating Michaelis-Menten parameters. *Biometrics*, **45**, 637-656.

### 1990

Cressie, N. (1990). The origins of kriging. *Mathematical Geology*, **22**, 239-252.

Cressie, N., Gotway, C. A., and Grondona, M. O. (1990). Spatial prediction from networks. *Chemometrics and Intelligent Laboratory Systems*, **7**, 251-271.

Gotway, C. and **Cressie, N.** (1990). A spatial analysis of variance applied to soil-water infiltration. *Water Resources Research*, **26**, 2695-2703.

### 1991

**Cressie, N.** (1991). Geostatistical analysis of spatial data, in *Spatial Statistics and Digital Image Analysis*. National Academy Press, Washington, DC, 87-108.

**Cressie, N.** and Dajani, A. (1991). Empirical Bayes estimation of U. S. undercount based on artificial populations. *Journal of Official Statistics*, **7**, 57-67.

Grondona, M. O. and **Cressie, N.** (1991). Using spatial considerations in the analysis of experiments. *Technometrics*, **33**, 381-392.

Medak, F. and **Cressie, N.** (1991). Confidence regions in ternary diagrams based on the power-divergence statistics. *Mathematical Geology*, **23**, 1045-1057.

Nanayakkara, N. and **Cressie, N.** (1991). Combining two unbiased estimators of a common mean of two normal populations. *Australian Journal of Statistics*, **33**, 43-56.

Nanayakkara, N. and **Cressie, N.** (1991). Robustness to unequal scale and other departures from the classical linear model, in *Directions in Robust Statistics and Diagnostics, Part II*, eds W. Stahel and S. Weisberg. *IMA Volumes in Mathematics and its Applications*, Vol. **34**, Springer, New York, 65-113.

### 1992

**Cressie, N.** (1992). Smoothing regional maps using empirical Bayes predictors. *Geographical Analysis*, **24**, 75-95.

**Cressie, N.** (1992). REML estimation in empirical Bayes smoothing of census undercount. *Survey Methodology*, **18**, 75-94.

**Cressie, N.** and Hulting, F. L. (1992). A spatial statistical analysis of tumor growth. *Journal of the American Statistical Association*, **87**, 272-283.

**Cressie, N.** and Lele, S. (1992). New models for Markov random fields. *Journal of Applied Probability*, **29**, 877-884.

**Cressie, N.** and Zimmerman, D. L. (1992). On the stability of the geostatistical method. *Mathematical Geology*, **24**, 45-59.

Zimmerman, D. L. and **Cressie, N.** (1992). Mean squared prediction error in the spatial linear model with estimated covariance parameters. *Annals of the Institute of Statistical Mathematics*, **44**, 27-43.

### 1993

**Cressie, N.** (1993). Aggregation in geostatistical problems, in *Geostatistics Troia '92*, Vol. **1**, ed. A. Soares. Kluwer, Dordrecht, NL, 25-36.

**Cressie, N.** (1993). Regional mapping of incidence rates using spatial Bayesian models. *Medical Care*, **31**, YS60-YS65.

**Cressie, N.** (1993). Geostatistics: A tool for environmental modelers, in *Environmental Modeling with GIS*, eds M. F. Goodchild, B. O. Parks, and L. T. Steyaert. Oxford University Press, Oxford, UK, 414-421.

**Cressie, N.** and Lahiri, S. N. (1993). The asymptotic distribution of REML estimators. *Journal of Multivariate Analysis*, **45**, 217-233.

**Cressie, N.** and Morgan, P. B. (1993). The VPRT: A sequential testing procedure dominating the SPRT. *Econometric Theory*, **9**, 431-450.

*Refereed Articles, ctd:*

- Cressie, N.** and Ver Hoef, J. (1993). Spatial statistical analysis of environmental and ecological data, in *Environmental Modeling with GIS*, eds M. F. Goodchild, B. O. Parks, and L. T. Steyaert. Oxford University Press, Oxford, UK, 404-413.
- Gotway, C. and **Cressie, N.** (1993). Improved multivariate prediction under a general linear model. *Journal of Multivariate Analysis*, **45**, 56-72.
- Grondona, M. O. and **Cressie, N.** (1993). Efficiency of block designs under stationary second-order autoregressive errors. *Sankhyā A*, **55**, 267-284.
- Ver Hoef, J. M. and **Cressie, N.** (1993). Multivariable spatial prediction. *Mathematical Geology*, **25**, 219-240. (Errata: 1994, Vol. **26**, pp. 273-275.)
- Ver Hoef, J. M. and **Cressie, N.** (1993). Spatial statistics: Analysis of field experiments, in *Design and Analysis of Ecological Experiments*, eds S. M. Scheiner and J. Gurevitch. Chapman and Hall, London, UK, 319-341.
- Ver Hoef, J. M., **Cressie, N.**, and Glenn-Lewin, D. C. (1993). Spatial models for spatial statistics: Some unification. *Journal of Vegetation Science*, **4**, 441-452.

**1994**

- Cressie, N.** (1994). Models for spatial processes, in *Statistical Methods for Physical Science*, eds J. Stanford and S. Vardeman. Academic Press, New York, NY, 93-124.
- Cressie, N.** (1994). Spatial chemostatistics, in *Environmental Statistics, Assessment and Forecasting*, eds C. R. Cothorn and N. P. Ross. Lewis Publishers, Boca Raton, FL, 131-146.
- Cressie, N.** and Biele, J. (1994). A sample-size optimal Bayesian procedure for sequential pharmaceutical trials. *Biometrics*, **50**, 700-711.
- Cressie, N.**, Biele, J., and Morgan, P. B. (1994). Sample-size-optimal sequential testing. *Journal of Statistical Planning and Inference*, **39**, 305-327.
- Cressie, N.** and Helterbrand, J. D. (1994). Multivariate spatial statistical models. *Geographical Systems*, **1**, 179-188.
- Helterbrand, J. D. and **Cressie, N.** (1994). Universal cokriging under intrinsic coregionalization. *Mathematical Geology*, **26**, 205-226.
- Helterbrand, J. D., **Cressie, N.**, and Davidson, J. L. (1994). A statistical approach to identifying closed object boundaries in images. *Advances in Applied Probability*, **26**, 831-854.
- Rathbun, S. L. and **Cressie, N.** (1994). Asymptotic properties of estimators for the parameters of spatial inhomogeneous Poisson point processes. *Advances in Applied Probability*, **26**, 122-154.
- Rathbun, S. L. and **Cressie, N.** (1994). A space-time survival point process for a longleaf pine forest in southern Georgia. *Journal of the American Statistical Association*, **89**, 1164-1174.

**1995**

- Cressie, N.** (1995). Bayesian smoothing of rates in small geographic areas. *Journal of Regional Science*, **35**, 659-673.
- Cannon, A. and **Cressie, N.** (1995). Temporal analogues to spatial K functions. *Biometrical Journal*, **37**, 351-373.
- Carroll, S. S., Day, G. N., **Cressie, N.**, and Carroll, T. R. (1995). Spatial modeling of snow water equivalent using airborne and ground-based snow data. *Environmetrics*, **6**, 127-139.
- Grondona, M. O. and **Cressie, N.** (1995). Residuals based estimators of the covariogram. *Statistics*, **26**, 209-218.



Helterbrand, J. D., Davidson, J. L., and **Cressie, N.** (1995). Optimal closed boundary identification in gray-scale imagery. *Journal of Mathematical Imaging and Vision*, **5**, 179-205.

## 1996

**Cressie, N.** (1996). Change of support and the modifiable areal unit problem. *Geographical Systems*, **3**, 159-180.

**Cressie, N.** (1996). PIC: Power divergence information criterion, in *Statistical Theory and Applications: Papers in Honor of Herbert A. David*, eds H. N. Nagaraja, P. K. Sen, and D. F. Morrison. Springer, New York, NY, 3-14.

**Cressie, N.** (1996). Weighted jackknife variance estimation for functions of rates and proportions, in *Research Developments in Probability and Statistics*, eds E. Brunner and M. Denker. VSP International Science Publishers, Utrecht, NL, 343-352.

**Cressie, N.** and Hartfield, M. N. (1996). Conditionally specified Gaussian models for spatial statistical analysis of field trials. *Journal of Agricultural, Biological, and Environmental Statistics*, **1**, 60-77.

**Cressie, N.** and Lahiri, S. N. (1996). Asymptotics for REML estimation of spatial covariance parameters. *Journal of Statistical Planning and Inference*, **50**, 327-341.

Carroll, S.S. and **Cressie, N.** (1996). A comparison of geostatistical techniques used to estimate snow water equivalent. *Water Resources Bulletin*, **32**, 267-278.

Cook, D., Majure, J.J., Symanzik, J., and **Cressie, N.** (1996). Dynamic graphics in a GIS: Exploring and analyzing multivariate spatial data using linked software. *Computational Statistics*, **11**, 467-480.

Huang, H.C. and **Cressie, N.** (1996). Spatio-temporal prediction of snow water equivalent using the Kalman filter. *Computational Statistics and Data Analysis*, **22**, 159-175.

## 1997

**Cressie, N.** (1997). Jackknifing in the presence of inhomogeneity. *Technometrics*, **39**, 45-51.

**Cressie, N.** and Aldworth, J. (1997). Spatial statistical analysis and its consequences for spatial sampling, in *Geostatistics Wollongong '96*, Vol. **1**, eds E.Y. Baafi and N. A. Schofield. Kluwer, Dordrecht, NL, 126-137.

**Cressie, N.** and Majure, J. J. (1997). Spatio-temporal statistical modeling of livestock waste in streams. *Journal of Agricultural, Biological, and Environmental Statistics*, **2**, 24-47.

**Cressie, N.** and Majure, J. J. (1997). Non-point-source pollution of surface waters over a watershed, in *Statistics for the Environment 3: Pollution Assessment and Control*, eds V. Barnett and K.F. Turkman. Wiley, Chichester, UK, 201-224.

Carroll, S.S. and **Cressie, N.** (1997). Spatial modeling of snow water equivalent using covariances estimated from spatial and geomorphic attributes. *Journal of Hydrology*, **190**, 42-59.

Cook, D., Symanzik, J., Majure, J. J., and **Cressie, N.** (1997). Dynamic graphics in a GIS: More examples using linked software. *Computers and Geosciences*, **23**, 371-385.

Helterbrand, J. D. and **Cressie, N.** (1997). Object identification using Markov random field segmentation models at multiple resolutions of a rectangular lattice, in *Modelling Longitudinal and Spatially Correlated Data: Methods, Applications, and Future Directions*, eds T. Gregoire et al. Springer Lecture Notes in Statistics, No. **122**, Springer, New York, NY, 159-173.

Kaiser, M. S. and **Cressie, N.** (1997). Modeling Poisson variables with positive spatial dependence. *Statistics and Probability Letters*, **35**, 423-432.

*Refereed Articles, ctd:*

- Kaiser, M. S., Hsu, N. J., **Cressie, N.**, and Lahiri, S. N. (1997). Inference for spatial processes using subsampling: A simulation study. *Environmetrics*, **8**, 485-502.
- Majure, J. J. and **Cressie, N.** (1997). Dynamic graphics for exploring spatial dependence in multivariate spatial data. *Geographical Systems*, **4**, 131-158.
- Morgan, P. B. and **Cressie, N.** (1997). A comparison of the cost-efficiencies of the sequential, group-sequential, and variable-sample-size-sequential probability ratio tests. *Scandinavian Journal of Statistics*, **24**, 181-200.
- Ver Hoef, J. M. and **Cressie, N.** (1997). Using hidden Markov chains and empirical Bayes change-point estimation for transect data. *Environmental and Ecological Statistics*, **4**, 247-264.

**1998**

- Cressie, N.** (1998). Transect-spacing design of ice cores on the Antarctic continent. *Canadian Journal of Statistics*, **26**, 405-418.
- Cressie, N.** (1998). Aggregation and interaction issues in statistical modeling of spatio-temporal processes. *Geoderma*, **85**, 133-140.
- Cressie, N.** and Davidson, J. L. (1998). Image analysis with partially ordered Markov models. *Computational Statistics and Data Analysis*, **29**, 1-26.
- Cressie, N.** and Davidson, J. L. (1998). Image processing. Entry in *Encyclopedia of Statistical Sciences*, Update Vol. **2**, eds S. Kotz, C.B. Read, and D.L. Banks. Wiley, New York, NY, 314-328. (Republished in 2009 in *Methods and Applications of Statistics in the Life and Health Sciences*, ed. N. Balakrishnan. Wiley, Hoboken, NJ, 397-414.)
- Cressie, N.** and Morgan, P. B. (1998). Variable-sample-size sequential probability ratio test (VPRT). Entry in *Encyclopedia of Statistical Sciences*, Update Vol. **2**, eds S. Kotz, C.B. Read, and D. L. Banks. Wiley, New York, NY, 691-699.
- Cressie, N.** and Wikle, C. K. (1998). The variance-based cross-variogram: You can add apples and oranges. *Mathematical Geology*, **30**, 789-799.
- Wikle, C. K., Berliner, L. M., and **Cressie, N.** (1998). Hierarchical Bayesian space-time models. *Environmental and Ecological Statistics*, **5**, 117-154.

**1999**

- Cressie, N.** (1999). Statistical analysis of data from a Geographic Information System, in *GIS en Waarachtig! Proceedings of Symposium Statistische Software 1999*. Geodan, Amsterdam, NL, 21-36.
- Cressie, N.** and Huang, H. C. (1999). Classes of nonseparable, spatio-temporal stationary covariance functions. *Journal of the American Statistical Association*, **94**, 1330-1340. (Correction: 2001, Vol. **96**, p. 784.)
- Cressie, N.**, Kaiser, M. S., Daniels, M. J., Aldworth, J., Lee, J., Lahiri, S. N., and Cox, L. H. (1999). Spatial analysis of particulate matter in an urban environment, in *geoENV II - Geostatistics for Environmental Applications*, eds J. Gomez-Hernandez, A. Soares, and R. Froidevaux. Kluwer, Dordrecht, NL, 41-52.
- Aldworth, J. and **Cressie, N.** (1999). Sampling designs and prediction methods for Gaussian spatial processes, in *Multivariate Design and Sampling*, ed. S. Ghosh. Marcel Dekker, New York, NY, 1-54.
- Davidson, J., **Cressie, N.**, and Hua, X. (1999). Texture synthesis and pattern recognition for partially ordered Markov models. *Pattern Recognition*, **32**, 1475-1505.
- Huang, H. C. and **Cressie, N.** (1999). Empirical Bayesian spatial prediction using wavelets, in *Bayesian Inference in Wavelet Based Models*, eds P. Mueller and B. Vidakovich. Springer Lecture Notes in Statistics, No. **141**, Springer, New York, NY, 203-222.

*Refereed Articles, ctd:*

- Lahiri, S. N., Kaiser, M. S., **Cressie, N.**, and Hsu, N. J. (1999). Prediction of spatial cumulative distribution functions using subsampling (with discussion and a rejoinder). *Journal of the American Statistical Association*, **94**, 86-110.
- Stern, H. S. and **Cressie, N.** (1999). Inference for extremes in disease mapping, in *Disease Mapping and Risk Assessment for Public Health*, eds A. Lawson et al. Wiley, Chichester, UK, 63-84.
- Wikle, C. K. and **Cressie, N.** (1999). A dimension-reduced approach to space-time Kalman filtering. *Biometrika*, **86**, 815-829.

**2000**

- Cressie, N.** (2000). Geostatistical methods for mapping environmental exposures, in *Spatial Epidemiology: Methods and Applications*, eds P. Elliott, J.C. Wakefield, N.G. Best, and D.J. Briggs. Oxford University Press, Oxford, UK, 185-204.
- Cressie, N.** and Lawson, A. B. (2000). Hierarchical probability models and Bayesian analysis of mine locations. *Advances in Applied Probability*, **32**, 315-330.
- Cressie, N.** and Pardo, L. (2000). Minimum  $\phi$ -divergence estimator and hierarchical testing in loglinear models. *Statistica Sinica*, **10**, 867-884.
- Cressie, N.**, Stern, H. S., and Wright, D. R. (2000). Mapping rates associated with polygons. *Journal of Geographical Systems*, **2**, 61-69.
- Cressie, N.**, Zhu, J., Baddeley, A. J., and Nair, M. G. (2000). Directed Markov point processes as limits of partially ordered Markov models. *Methodology and Computing in Applied Probability*, **2**, 5-21.
- Berliner, L. M., Wikle, C. K., and **Cressie, N.** (2000). Long-lead prediction of Pacific SSTs via Bayesian dynamic modeling. *Journal of Climate*, **13**, 3953-3968.
- Huang, H. C. and **Cressie, N.** (2000). Deterministic/stochastic wavelet decomposition for recovery of signal from noisy data. *Technometrics*, **42**, 262-276.
- Huang, H. C. and **Cressie, N.** (2000). Asymptotic properties of maximum (composite) likelihood estimators for partially ordered Markov models. *Statistica Sinica*, **10**, 1325-1344.
- Kaiser, M. S. and **Cressie, N.** (2000). The construction of multivariate distributions from Markov random fields. *Journal of Multivariate Analysis*, **73**, 199-220.
- Lawson, A. B. and **Cressie, N.** (2000). Spatial statistical methods for environmental epidemiology, in *Handbook of Statistics*, Vol. **18**: Bioenvironmental and Public Health Statistics, eds P.K. Sen and C.R. Rao. Elsevier, Amsterdam, NL, 357-396.
- Stern, H. S. and **Cressie, N.** (2000). Posterior predictive model checks for disease mapping models. *Statistics in Medicine*, **19**, 2377-2397.
- Wikle, C. K. and **Cressie, N.** (2000). Space-time statistical modeling of environmental data, in *Quantifying Spatial Uncertainty in Natural Resources: Theory and Applications for GIS and Remote Sensing*, eds H. T. Mowrer and R. G. Congalton. Ann Arbor Press, Chelsea, MI, 213-235.

**2001**

- Cressie, N.** and Collins, L. B. (2001). Analysis of spatial point patterns using bundles of product density LISA functions. *Journal of Agricultural, Biological, and Environmental Statistics*, **6**, 118-135.
- Cressie, N.** and Collins, L. B. (2001). Patterns in spatial point locations: Local indicators of spatial association in a minefield with clutter. *Naval Research Logistics*, **38**, 333-347.

- Cressie, N.** and Johannesson, G. (2001). Kriging for cut-offs and other difficult problems, in *geoENV III - Geostatistics for Environmental Applications*, eds P. Monestiez, D. Allard, and R. Froidevaux. Kluwer, Dordrecht, NL, 299-310.
- Cressie, N.** and Liu, C. (2001). Binary Markov mesh models and symmetric Markov random fields: Some results on their equivalence. *Methodology and Computing in Applied Probability*, **3**, 5-34.
- Daniels, M. J. and **Cressie, N.** (2001). A hierarchical approach to covariance-function estimation for time series. *Journal of Time Series Analysis*, **22**, 253-266.
- Huang, H. C. and **Cressie, N.** (2001). Multiscale graphical modeling in space: Applications to command and control, in *Spatial Statistics: Methodological Aspects and Applications*, ed. M. Moore. Springer Lecture Notes in Statistics, No. **159**, Springer, New York, NY, 83-113.
- Lee, J., Kaiser, M. S., and **Cressie, N.** (2001). Multiway dependence in exponential family conditional distributions. *Journal of Multivariate Analysis*, **79**, 171-190.
- Ver Hoef, J. M. and **Cressie, N.** (2001). Spatial statistics: Analysis of field experiments, in *Design and Analysis of Ecological Experiments, 2nd edn*, eds S. M. Scheiner and J. Gurevitch. Oxford University Press, New York, NY, 289-307.
- Ver Hoef, J. M., **Cressie, N.**, Fisher, R. N., and Case, T. J. (2001). Uncertainty and spatial linear models for ecological data, in *Spatial Uncertainty for Ecology*, eds C. Hunsaker, M. Goodchild, M. Friedl, and T. Case. Springer-Verlag, New York, NY, 214-237.
- Zhu, J., Lahiri, S. N., and **Cressie, N.** (2001). Asymptotic distribution of the empirical cumulative distribution function predictor under nonstationarity, in *Spatial Statistics: Methodological Aspects and Applications*, ed. M. Moore. Springer Lecture Notes in Statistics, No. **159**, Springer, New York, NY, 1-20.

## 2002

- Cressie, N.** (2002). Geographic Information Systems (GIS), spatial statistics in. Entry in *Encyclopedia of Environmetrics*, Vol. **2**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 894-897.
- Cressie, N.** (2002). Spatial statistics in environmental epidemiology. Entry in *Encyclopedia of Environmetrics*, Vol. **4**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 2076-2080.
- Cressie, N.** (2002). Variogram. Entry in *Encyclopedia of Environmetrics*, Vol. **4**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 2313-2316.
- Cressie, N.** (2002). Variogram estimation. Entry in *Encyclopedia of Environmetrics*, Vol. **4**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 2316-2321.
- Cressie, N.** and Pardo, L. (2002). Model checking in loglinear models using  $\phi$ -divergences and MLEs. *Journal of Statistical Planning and Inference*, **103**, 437-453.
- Cressie, N.** and Pardo, L. (2002). Phi-divergence statistic. Entry in *Encyclopedia of Environmetrics*, Vol. **3**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 1551-1555.
- Cressie, N.** and Pavlicova, M. (2002). Calibrated spatial moving average simulations. *Statistical Modelling*, **2**, 267-279.
- Cressie, N.** and Wikle, C. K. (2002). Space-time Kalman filter. Entry in *Encyclopedia of Environmetrics*, Vol. **4**, eds A. H. El-Shaarawi and W. W. Piegorsch. Wiley, New York, NY, 2045-2049.
- Gabrosek, J. and **Cressie, N.** (2002). The effect on attribute prediction of location uncertainty in spatial data. *Geographical Analysis*, **34**, 262-285.
- Huang, H. C., **Cressie, N.**, and Gabrosek, J. (2002). Fast, resolution-consistent spatial prediction of global processes from satellite data. *Journal of Computational and Graphical Statistics*, **11**, 63-88.

*Refereed Articles, ctd:*

- Irwin, M. E., **Cressie, N.**, and Johannesson, G. (2002). Spatial-temporal nonlinear filtering based on hierarchical statistical models (with discussion). *Test*, **11**, 249-302. (Corrigenda: 2003, Vol. **12**, p. 279.)
- Kaiser, M.S., **Cressie, N.**, and Lee, J. (2002). Spatial mixture models based on exponential family conditional distributions. *Statistica Sinica*, **12**, 449-474.
- Lahiri, S.N., Lee, Y., and **Cressie, N.** (2002). On asymptotic distribution and asymptotic efficiency of least squares estimators of spatial variogram parameters. *Journal of Statistical Planning and Inference*, **103**, 65-85.
- Mugglin, A. S., **Cressie, N.**, and Gemmell, I. (2002). Hierarchical statistical modelling of influenza-epidemic dynamics in space and time. *Statistics in Medicine*, **21**, 2703-2721.
- Shen, X., Huang, H. C., and **Cressie, N.** (2002). Nonparametric hypothesis testing for a spatial signal. *Journal of the American Statistical Association*, **97**, 1122-1140. (Correction: 2005, Vol. **100**, pp. 716-718.)
- Zhu, J., Lahiri, S. N., and **Cressie, N.** (2002). Asymptotic inference for spatial CDFs over time. *Statistica Sinica*, **12**, 843-861.

**2003**

- Cressie, N.** and Kornak, J. (2003). Spatial statistics in the presence of location error with an application to remote sensing of the environment. *Statistical Science*, **18**, 436-456.
- Cressie, N.**, Pardo, L., and Pardo, M. (2003). Size and power considerations for testing loglinear models using  $\phi$ -divergence test statistics. *Statistica Sinica*, **13**, 555-570.
- Aldworth, J. and **Cressie, N.** (2003). Prediction of nonlinear spatial functionals. *Journal of Statistical Planning and Inference*, **112**, 3-41.
- Frey, J. and **Cressie, N.** (2003). Some results on constrained Bayes estimators. *Statistics and Probability Letters*, **65**, 389-399.
- Hrafinkelsson, B. and **Cressie, N.** (2003). Hierarchical modeling of count data with application to nuclear fall-out. *Environmental and Ecological Statistics*, **10**, 179-200.
- Wright, D. L., Stern, H. S., and **Cressie, N.** (2003). Loss functions for estimation of extrema with an application to disease mapping. *Canadian Journal of Statistics*, **31**, 251-266.

**2004**

- Cressie, N.**, Richardson, S., and Jaussent, I. (2004). Ecological bias: Use of maximum-entropy approximations. *Australian and New Zealand Journal of Statistics*, **46**, 233-255.
- Johannesson, G. and **Cressie, N.** (2004). Finding large-scale spatial trends in massive, global, environmental datasets. *Environmetrics*, **15**, 1-44.
- Johannesson, G. and **Cressie, N.** (2004). Variance-covariance modeling and estimation for multi-resolution spatial models, in *geoENV 2002 - Geostatistics for Environmental Applications*, eds X. Sanchez-Vila, J. Carrera, and J. Gomez-Hernandez. Kluwer, Dordrecht, NL, 319-330.
- Ver Hoef, J. M., **Cressie, N.**, and Barry, R. P. (2004). Flexible spatial models based on the Fast Fourier Transform (FFT) for cokriging. *Journal of Computational and Graphical Statistics*, **13**, 265-282.
- Wendt, D. A., Irwin, M. E., and **Cressie, N.** (2004). Waypoint analysis for command and control. *Naval Research Logistics*, **51**, 1045-1067.

2005

- Cressie, N.** and Pavlicova, M. (2005). Lognormal kriging: Bias adjustment and kriging variances, in *Geostatistics Banff 2004: Proceedings of the Seventh International Geostatistics Congress*, eds O. Leuangthong and C. V. Deutsch. Springer, Dordrecht, NL, 1027-1036.
- Cressie, N.**, Perrin, O., and Thomas-Agnan, C. (2005). Likelihood-based estimation for Gaussian MRFs. *Statistical Methodology*, **2**, 1-16.
- Cressie, N.**, Zhang, J., and Craigmire, P. F. (2005). Geostatistical prediction of spatial extremes and their extent, in *Geostatistics for Environmental Applications, Proceedings of the Fifth Conference on Geostatistics for Environmental Applications*, eds P. Renard, H. Demougeot-Renard, and R. Froidevaux. Springer, Berlin, DE, 27-37.
- Tzeng, S., Huang, H.-C., and **Cressie, N.** (2005). A fast, optimal spatial-prediction method for massive datasets. *Journal of the American Statistical Association*, **100**, 1343-1357.

2006

- Cressie, N.** (2006). Block kriging for lognormal spatial processes. *Mathematical Geology*, **38**, 413-443.
- Cressie, N.**, Frey, J., Harch, B., and Smith, M. (2006). Spatial prediction on a river network. *Journal of Agricultural, Biological, and Environmental Statistics*, **11**, 127-150.
- Cressie, N.**, Perrin, O., and Thomas-Agnan, C. (2006). Doctors' prescribing patterns in the Midi-Pyrénées region of France: Point-process aggregation, in *Case Studies in Spatial Point Process Modeling*, eds A. Baddeley, P. Gregori, J. Mateu, R. Stoica, and D. Stoyan. *Springer Lecture Notes in Statistics*, No. **185**, Springer, New York, NY, 183-195.
- Craigmire, P. F., **Cressie, N.**, Santner, T. J., and Rao, Y. (2006). A loss function approach to identifying environmental exceedances. *Extremes*, **8**, 143-159.
- Kornak, J., Irwin, M. E., and **Cressie, N.** (2006). Spatial point process models of defensive strategies: Detecting changes. *Statistical Inference for Stochastic Processes*, **9**, 31-46.
- Pavlicova, M., **Cressie, N.**, and Santner, T. J. (2006). Testing for activation in data from fMRI experiments. *Journal of Data Science*, **4**, 275-289.

2007

- Cressie, N.**, Buxton, B. E., Calder, C. A., Craigmire, P. F., Dong, C., McMillan, N. J., Morara, M., Santner, T. J., Wang, K., Young, G., and Zhang, J. (2007). From sources to biomarkers: A Bayesian approach to human exposure modeling. *Journal of Statistical Planning and Inference*, **137**, 3361-3379.
- Johannesson, G., **Cressie, N.**, and Huang, H.-C. (2007). Dynamic multi-resolution spatial models. *Environmental and Ecological Statistics*, **14**, 5-25.
- Li, H., Calder, C. A., and **Cressie, N.** (2007). Beyond Moran's *I*: Testing for spatial dependence based on the SAR model. *Geographical Analysis*, **39**, 357-375.
- Sain, S. and **Cressie, N.** (2007). A spatial model for multivariate lattice data. *Journal of Econometrics*, **140**, 226-259.
- Shi, T. and **Cressie, N.** (2007). Global statistical analysis of MISR aerosol data: A massive data product from NASA's Terra satellite. *Environmetrics*, **18**, 665-680.

2008

- Cressie, N.** and Johannesson, G. (2008). Fixed rank kriging for very large spatial data sets. *Journal of the Royal Statistical Society, Series B*, **70**, 209-226.
- Cressie, N.** and Kapat, P. (2008). Some diagnostics for Markov random fields. *Journal of Computational and Graphical Statistics*, **17**, 726-749.
- Cressie, N.** and Verzelen, N. (2008). Conditional-mean least-squares fitting of Gaussian Markov random fields to Gaussian fields. *Computational Statistics and Data Analysis*, **52**, 2794-2807.
- Berliner, L. M., **Cressie, N.**, Jezek, K., Kim, Y., Lam, C. Q., and van der Veen, C. J. (2008). Equilibrium dynamics of ice streams: A Bayesian statistical analysis. *Statistical Methods and Applications*, **17**, 145-165.
- Berliner, L. M., Jezek, K., **Cressie, N.**, Kim, Y., Lam, C. Q., and van der Veen, C. J. (2008). Modeling dynamic controls on ice streams: A Bayesian statistical approach. *Journal of Glaciology*, **54**, 705-714.
- Pavlicova, M., Santner, T.J., and **Cressie, N.** (2008). Detecting signals in fMRI data using powerful FDR procedures. *Statistics and its Interface*, **1**, 23-32.
- Zhang, J., Craigmile, P.F., and **Cressie, N.** (2008). Loss function approaches to predict a spatial quantile and its exceedance region. *Technometrics*, **50**, 216-227.

2009

- Cressie, N.**, Calder, C. A., Clark, J. S., Ver Hoef, J. M., and Wikle, C. K. (2009). Accounting for uncertainty in ecological analysis: The strengths and limitations of hierarchical statistical modeling (with discussion). *Ecological Applications*, **19**, 553-570.
- Calder, C. A. and **Cressie, N.** (2009). Kriging and variogram models, in *International Encyclopedia of Human Geography*, Vol. **1**, eds R. Kitchin and N. Thrift. Elsevier, Oxford, UK, 49-55.
- Craigmile, P. F., Calder, C. A., Li, H., Paul, R., and **Cressie, N.** (2009). Hierarchical model building, fitting, and checking: A behind-the-scenes look at a Bayesian analysis of arsenic exposure pathways (with discussion). *Bayesian Analysis*, **4**, 1-62.
- Huang, C., Yao, Y., **Cressie, N.**, and Hsing, T. (2009). Multivariate intrinsic random functions for cokriging. *Mathematical Geosciences*, **41**, 887-904.
- Kang, E. L., Liu, D., and **Cressie, N.** (2009). Statistical analysis of small-area data based on independence, spatial, non-hierarchical, and hierarchical models. *Computational Statistics and Data Analysis*, **53**, 3016-3032.

2010

- Cressie, N.** and Kang, E. L. (2010). High-resolution digital soil mapping: Kriging for very large datasets, in *Proximal Soil Sensing*, eds R.A. Viscarra Rossel, A. B. McBratney, and B. Minasny. Springer, Dordrecht, NL, 49-63.
- Cressie, N.**, Shi, T., and Kang, E. L. (2010). Fixed rank filtering for spatio-temporal data. *Journal of Computational and Graphical Statistics*, **19**, 724-745.
- Ahlqvist, O., Ban, H., **Cressie, N.**, and Zuniga-Shaw, N. (2010). Statistical counterpoint: Knowledge discovery of choreographic information using spatio-temporal analysis and visualization. *Applied Geography*, **30**, 548-560.
- Huang, C., Hsing, T., **Cressie, N.**, Ganguly, A. R., Protopopescu, V. A., and Rao, N. S. (2010). Bayesian source detection and parameter estimation of a plume model based on sensor network measurements (with discussion). *Applied Stochastic Models in Business and Industry*, **26**, 331-361.

Kang, E.L., **Cressie, N.**, and Shi, T. (2010). Using temporal variability to improve spatial mapping with application to satellite data. *Canadian Journal of Statistics*, **38**, 271-289.

## 2011

**Cressie, N.** and Medak, F.M. (2011). Using power-divergence statistics to test for homogeneity in product-multinomial distributions, in *Modern Mathematical Tools and Techniques in Computing Complexity*, eds L. Pardo, N. Balakrishnan, and M.A. Gil. Springer-Verlag, Berlin, DE, 157-169.

Braverman, A., **Cressie, N.**, and Teixeira, J. (2011). A likelihood-based comparison of temporal models for physical processes. *Statistical Analysis and Data Mining*, **4**, 247-258.

Huang, C., Hsing, T., and **Cressie, N.** (2011). Nonparametric estimation of the variogram and its spectrum. *Biometrika*, **98**, 775-789.

Huang, C., Hsing, T., and **Cressie, N.** (2011). Spectral density estimation through a regularized inverse problem. *Statistica Sinica*, **21**, 1115-1124.

Kang, E.L. and **Cressie, N.** (2011). Bayesian inference for the Spatial Random Effects model. *Journal of the American Statistical Association*, **106**, 972-983.

Katzfuss, M. and **Cressie, N.** (2011). Spatio-temporal smoothing and EM estimation for massive remote-sensing data sets. *Journal of Time Series Analysis*, **32**, 430-446.

Li, H., Calder, C.A., and **Cressie, N.** (2011). One-step estimation of spatial dependence parameters: Properties and extensions of the APLE statistic. *Journal of Multivariate Analysis*, **105**, 68-84.

Paul, R. and **Cressie, N.** (2011). Lognormal block kriging for contaminated soil. *European Journal of Soil Science*, **62**, 337-345.

Sain, S., Furrer, R., and **Cressie, N.** (2011). A spatial analysis of multivariate output from regional climate models. *Annals of Applied Statistics*, **5**, 150-175.

Wunch, D., et al. (42 co-authors, including **Cressie, N.**). (2011). A method for evaluating bias in global measurements of CO<sub>2</sub> total columns from space. *Atmospheric Chemistry and Physics*, **11**, 12317-12337.

## 2012

**Cressie, N.** (2012). Spatio-temporal statistics in Earth sciences, in *Water Information Research and Development Alliance (WIRADA) Science Symposium Proceedings*, Melbourne, Australia, 1-5 August 2011, 323-329.

**Cressie, N.**, Assunção, R., Holan, S. H., Levine, M., Nicolis, O., Zhang, J., and Zhou, J. (2012). Dynamical random-set modeling of concentrated precipitation in North America. *Statistics and its Interface*, **5**, 169-181.

Kang, E. L., **Cressie, N.**, and Sain, S. (2012). Combining outputs from the North American Regional Climate Change Assessment Program by using a Bayesian hierarchical model. *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, **61**, 291-313.

Katzfuss, M. and **Cressie, N.** (2012). Bayesian hierarchical spatio-temporal smoothing for very large datasets. *Environmetrics*, **23**, 94-107.

Nguyen, H., **Cressie, N.**, and Braverman, A. (2012). Spatial statistical data fusion for remote-sensing applications. *Journal of the American Statistical Association*, **107**, 1004-1018.

Zhuang, L. and **Cressie, N.** (2012). Spatio-temporal modeling of Sudden Infant Death Syndrome data. *Statistical Methodology*, **9**, 117-143.



## 2013

- Cressie, N.** and Liu, D. (2013). Geographic Information Systems (GISs), spatial statistics in. Entry in *Encyclopedia of Environmetrics*, second edition, eds A.H. El-Shaarawi and W.W. Piegorsch. Wiley, Chichester, UK (4 pp.)
- Cressie, N.**, Morara, M., Buxton, B., McMillan, N., Strauss, W., and Wilson, N. (2013). A Bayesian multivariate analysis of children's exposure to pesticides. *Environmetrics*, **24**, 357-366.
- Cressie, N.** and Wang, R. (2013). Statistical properties of the state obtained by solving a nonlinear multivariate inverse problem. *Applied Stochastic Models in Business and Industry*, **29**, 424-438.
- Box, J.E., **Cressie, N.**, Bromwich, D. H., Jung, J-H., van den Broeke, M., Van Angelen, J. H., Forster, R., Miège, C., Mosley-Thompson, E., Vinther, B., and McConnell, J. R. (2013). Greenland ice sheet mass balance reconstruction. Part I: net snow accumulation (1600-2009). *Journal of Climate*, **25**, 3919-3934.
- Clifford, D., **Cressie, N.**, England, J. R., Roxburgh, S. H., and Paul, K. I. (2013). Unbiased, efficient estimation and prediction of biomass from log-log allometric models. *Forest Ecology Management*, **310**, 375-381.
- Kang, E. L. and **Cressie, N.** (2013). Bayesian hierarchical ANOVA of regional climate-change projections from NARC-CAP Phase II. *International Journal of Applied Earth Observation and Geoinformation*, **22**, 3-15.
- Parslow, J., **Cressie, N.**, Campbell, E., Jones, E., and Murray, L. (2013). Bayesian learning and predictability in a stochastic nonlinear dynamical model. *Ecological Applications*, **23**, 679-698.
- Sengupta, A. and **Cressie, N.** (2013). Empirical hierarchical modeling for count data using the Spatial Random Effects model. *Spatial Economic Analysis*, **8**, 389-418.
- Sengupta, A. and **Cressie, N.** (2013). Hierarchical statistical modeling of big spatial datasets using the exponential family of distributions. *Spatial Statistics*, **4**, 14-44.
- Zhuang, L., **Cressie, N.**, Pomeroy, L., and Janies, D. (2013). Multi-species SIR models from a dynamical Bayesian perspective. *Theoretical Ecology*, **6**, 457-473.

## 2014

- Cressie, N.** (2014). Environmental informatics: Uncertainty quantification in the environmental sciences, in *Past, Present, and Future of Statistical Science*, eds X. Lin, D.L. Banks, C. Genest, G. Molenberghs, D.W. Scott, and J-L Wang. CRC Press, Boca Raton, FL, 429-449.
- Clifford, D., Pagendam, D., Baldock, J., **Cressie, N.**, Farquharson, R., Farrell, M., MacDonald, L., and Murray, L. (2014). Re-thinking soil carbon modelling: A stochastic approach to quantify uncertainties. *Environmetrics*, **25**, 265-278.
- Nguyen, H., Katzfuss, M., **Cressie, N.**, and Braverman, A. (2014). Spatio-temporal data fusion for very large remote sensing datasets. *Technometrics*, **56**, 174-185.
- Porter, A. T., Holan, S. H., Wikle, C. K., and **Cressie, N.** (2014). Spatial Fay-Herriot models for small area estimation with functional covariates. *Spatial Statistics*, **10**, 27-42.
- Zhuang, L. and **Cressie, N.** (2014). Bayesian hierarchical statistical SIRS models. *Statistical Methods and Applications*, **23**, 601-646.

## 2015

- Cressie, N.** and Burden, S. (2015). Figures of merit for simultaneous inference and comparisons in simulation experiments. *Stat*, **4**, 196-211.

- Cressie, N.** and Burden, S. (2015). Evaluation of diagnostics for hierarchical spatial statistical models, in *Geometry Driven Statistics*, eds I.L. Dryden and J.T. Kent. Wiley, Chichester, UK, pp. 241-259.
- Bradley, J.R., **Cressie, N.**, and Shi, T. (2015). Comparing and selecting spatial predictors using local criteria (with discussion). *Test*, **24**, 1-28. (Rejoinder: 2015, Vol. **24**, pp. 54-60.)
- Burden, S., **Cressie, N.**, and Steel, D. G. (2015). The SAR model for very large datasets: A reduced-rank approach. *Econometrics*, **3**, 317-338.
- Zammit-Mangion, A., **Cressie, N.**, Ganesan, A. L., O'Doherty, S., and Manning, A. J. (2015). Spatio-temporal bivariate statistical models for atmospheric trace-gas inversion. *Chemometrics and Intelligent Laboratory Systems*, **149**, 227-241.

## 2016

- Cressie, N.** and Kang, E. L. (2016). Hot enough for you? A spatial exploratory and inferential analysis of North American climate-change projections. *Mathematical Geosciences*, **48**, 107-121 (doi:10.1007/s11004-015-9607-9).
- Cressie, N.**, Wang, R., Smyth, M., and Miller, C.E. (2016). Statistical bias and variance for the regularized inverse problem: Application to space-based atmospheric CO<sub>2</sub> retrievals. *Journal of Geophysical Research: Atmospheres*, **121**, 5526-5537 (doi:10.1002/2015JD024353).
- Cressie, N.** and Zammit-Mangion, A. (2016). Multivariate spatial covariance models: A conditional approach. *Biometrika*, **103**, 915-935.
- Bradley, J.R., **Cressie, N.**, and Shi, T. (2016). A comparison of spatial predictors when datasets could be very large. *Statistics Surveys*, **10**, 100-131.
- Davies, G. and **Cressie, N.** (2016). Analysis of variability of tropical Pacific sea surface temperatures. *Advances in Statistical Climatology, Meteorology and Oceanography*, **2**, 155-169.
- Sengupta, A., **Cressie, N.**, Kahn, B. H., and Frey, R. (2016). Predictive inference for big, spatial, non-Gaussian data: MODIS cloud data and its change-of-support. *Australian and New Zealand Journal of Statistics*, **58**, 15-45.
- Zammit-Mangion, A., **Cressie, N.**, and Ganesan, A.L. (2016). Non-Gaussian bivariate modelling with application to atmospheric trace-gas inversion. *Spatial Statistics*, **18**, 194-220.

## 2017

- Cressie, N.**, Burden, S., Shumack, C., Zammit-Mangion, A., and Zhang, B. (2017). Environmental Informatics. *Wiley StatsRef: Statistics Reference Online*, pp. 1-8 (doi:10.1002/9781118445112.stat07717.pub2).
- Cressie, N.**, Wang, R., and Maloney, B. The Atmospheric Infrared Sounder (AIRS) retrieval, revisited, *IEEE Geosciences and Remote Sensing Letters*, **14**, 1504-1507.
- Braverman, A., Chatterjee, S., Heyman, M., and **Cressie, N.** (2017). Probabilistic evaluation of competing climate models. *Advances in Statistical Climatology, Meteorology and Oceanography*, **3**, 93-105.
- Hobbs, J., Braverman, A., **Cressie, N.**, Granat, R., and Gunson, M. (2017) Simulation-based uncertainty quantification for estimating atmospheric CO<sub>2</sub> from satellite data. *SIAM/ASA Journal on Uncertainty Quantification*, **5**, 956-985.
- Nguyen, H., **Cressie, N.**, and Braverman, A. (2017). Multivariate spatial data fusion for very large remote sensing data. *Remote Sensing*, **9**, 142 (doi:10.3390/rs9020142).

*Refereed Articles, ctd:*

Sayre, R., et al. (16 co-authors, including **Cressie, N.**). (2017). A three-dimensional mapping of the ocean based on environmental data. *Oceanography*, **30**, 90-103 (doi:10.5670/oceanog.2017.116).

Zhang, B., **Cressie, N.**, and Wunch, D. (2017). Statistical properties of atmospheric greenhouse gas measurements looking down from space and looking up from the ground. *Chemometrics and Intelligent Laboratory Systems*, **162**, 214-222.

**2018**

**Cressie, N.** (2018). Mission CO<sub>2</sub>ntrol: A statistical scientist's role in remote sensing of atmospheric carbon dioxide, (with discussion). *Journal of the American Statistical Association*, **113**, 152-181.

**Cressie, N.** (2018). A statistical analysis of the Jacobian in retrievals of satellite data, in *Handbook of Mathematical Geosciences: Fifty Years of IAMG*, eds B.S. Daya Sagar, Q. Cheng, and F.P. Agterberg. Springer, Berlin, DE, 117-130.

Bowman, K. W., **Cressie, N.**, Qu, X., and Hall, A. (2018). A hierarchical statistical framework for emergent constraints: Application to snow-albedo feedback. *Geophysical Research Letters*, **45** 13,050-13,059.

Hardouin, C. and **Cressie, N.** (2018). Two-scale spatial models for binary data. *Statistical Methods and Applications*, **27**, 1 - 24.

Marchetti, Y., Nguyen, H., Braverman, A., and **Cressie, N.** (2018). Spatial data compression via adaptive dispersion clustering. *Computational Statistics and Data Analysis*, **117**, 138-153.

Zammit-Mangion, A., **Cressie, N.**, and Shumack, C. (2018). On statistical approaches to generate Level 3 products from remote sensing retrievals. *Remote Sensing*, **10**, 155 (doi:10.3390/rs10010155).

**2019**

**Cressie, N.** and Hardouin, C. (2019). A diagonally weighted matrix norm between two covariance matrices. *Spatial Statistics*, **29**, 316-328.

Weinberg, D., et al. (16 co-authors, including **Cressie, N.**) (2019). Effects of a government-academic partnership: Has the NSF-Census Bureau Research Network helped improve the U.S. statistical system? *Journal of Survey Statistics and Methodology*, forthcoming.

Zammit-Mangion, A. and **Cressie, N.** (2019). FRK: An R package for spatial and spatio-temporal prediction with large datasets. *Journal of Statistical Software*, forthcoming.

Zhang, B. and **Cressie, N.** (2019). Estimating spatial changes over time of Arctic sea ice using hidden  $2 \times 2$  tables, *Journal of Time Series Analysis*, **40**, 288-311.

Zhang, B., **Cressie, N.**, and Wunch, D. (2019). Inference for errors-in-variables models in the presence of systematic errors with an application to a satellite remote sensing campaign. *Technometrics*, **61**, 187-201.

*Manuscripts*

Huang, H.-C., **Cressie, N.**, and Zammit-Mangion, A. False discovery rates to detect signals from incomplete spatially aggregated data, under journal review.

Nguyen, H., **Cressie, N.**, and Hobbs, J. Consequences of misspecification of the prior mean, the prior covariance, and the measurement error covariance for Optimal Estimation retrievals, under journal review.

Pagendam, D., et al. (seven co-authors, including **Cressie, N.**). Predicting soil carbon cycling in the presence of uncertainties in data, processes and parameters: The biophysical-statistical approach, in preparation.

Zhang, B. and **Cressie, N.** Bayesian spatio-temporal modeling of Arctic sea ice extent, in preparation.

*Unrefereed Articles:*

**1977**

**Cressie, N.** (1977). Clustering on the circle. *Bulletin of the International Statistical Institute*, **47**, Book 4, 124-127.

**1979**

**Cressie, N.** (1979). Straight line fitting and variogram estimation (with discussion). *Bulletin of the International Statistical Institute*, **48**, Book 3, 573-580.

**1981**

**Cressie, N.** (1981). How useful are asymptotic results in extrema problems? *Bulletin of the International Statistical Institute*, **49**, Contributed Papers Volume, 53-56.

Keightley, D. D. and **Cressie, N. A. C.** (1981). Analysis of hormone receptor assay data by Scatchard, Reciprocal, and Woolf plots (with discussion), in *Estrogen Receptor Assays in Breast Cancer*, eds G. A. Sarfarty et al. Masson, New York, 210-224.

**1982**

**Cressie, N.** (1982). Empirical Bayes estimation in quality control. *Rassegna di Metodi Statistici ed Applicazioni*, **2**, 57-77.

**1984**

**Cressie, N.** (1984). Modelling sets, in *Multifunctions and Integrands*, ed. G. Salinetti. Springer Lecture Notes in Mathematics, No. **1091**, Springer, New York, NY, 138-149.

**1985**

**Cressie, N.** (1985). A geostatistical analysis of the Mercer and Hall wheat data. *Bulletin of the International Statistical Institute*, **51**, Contributed Papers Volume, 277-278.

**Cressie, N.** (1985). The underlying structure of empirical Bayes methods. *Rassegna di Metodi Statistici ed Applicazioni*, **5**, 19-31.

**Cressie, N.** (1985). Kriging nonstationary data, in *Proceedings of the 1985 Meeting of the Italian Statistical Society on Statistics and Natural Resources*, 35-66.

**1987**

**Cressie, N.** (1987). Estimating undercount in the U. S. Decennial Census. *Bulletin of the International Statistical Institute*, **52**, Contributed Papers Volume, 85-86.

**Cressie, N.** (1987). Spatial data analysis and modeling of regional variables, in *1987 Sino-American Statistical Meeting, Beijing*, Contributed Papers Volume, 108-111.

**Cressie, N. A. C.** and Guo, R. (1987). Mapping variables, in *Proceedings of the NCGA Conference, Computer Graphics '87*, Vol. **III**. National Computer Graphics Association, McLean, VA, 521-530.

1988

- Cressie, N.** (1988). Spatial prediction and site selection. *Proceedings of ASA/ EPA Conferences on Interpretation of Environmental Data. III Sampling and Site Selection in Environmental Studies*. Environmental Protection Agency, Washington, DC, 25-30.
- Cressie, N.** (1988). Estimating census undercount at national and subnational levels (with discussion). *Proceedings of Bureau of the Census Fourth Annual Research Conference*. US Bureau of the Census, Washington, DC, 123-150.

1990

- Cressie, N.** (1990). Weighted smoothing of estimated undercount. *Proceedings of Bureau of the Census 1990 Annual Research Conference*. US Bureau of the Census, Washington, DC, 301-325.

1991

- Cressie, N.** (1991). Modeling growth with random sets, in *Spatial Statistics and Imaging (Proceedings of the 1988 AMS-IMS-SIAM Joint Summer Research Conference)*, ed. A. Possolo. Institute of Mathematical Statistics, Hayward, CA, 31-45.
- Cressie, N.** (1991). Small-area prediction of undercount using the general linear model. *Proceedings of the 1990 Symposium on the Measurement and Improvement of Data Quality*. Statistics Canada, Ottawa, 93-105.
- Davidson, J. L. and **Cressie, N. A. C.** (1991). Statistical image algebra: A Bayesian approach, in *Stochastic and Neural Methods in Signal Processing, Image Processing, and Computer Vision*, ed. S. S. Chen. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **569**. SPIE, Bellingham, WA, 288-297.

1992

- Cressie, N.** and Grondona, M. O. (1992). A comparison of variogram estimation with covariogram estimation, in *The Art of Statistical Science*, ed. K. V. Mardia. Wiley, Chichester, UK, 191-208.

1993

- Cressie, N.** (1993). Spatial prediction in a multivariate setting, in *Multivariate Environmental Statistics*, eds G. P. Patil and C. R. Rao. North Holland, New York, NY, 99-107.
- Davidson, J. L. and **Cressie, N.** (1993). Markov pyramid models in image analysis, in *Image Algebra and Morphological Image Processing IV*, eds E. R. Dougherty, P. D. Gader, and J. C. Serra. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **2030**. SPIE, Bellingham, WA, 179-190.
- Helterbrand, J. D. and **Cressie, N. A. C.** (1993). Stochastic recognition of closed object boundaries in images, in *Image Algebra and Morphological Image Processing IV*, eds E. R. Dougherty, P. D. Gader, and J. C. Serra. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **2030**. SPIE, Bellingham, WA, 240-251.
- Majure, J. J. and **Cressie, N.** (1993). Explore: Exploratory spatial data analysis in ARC/INFO, in *Proceedings of the Thirteenth Annual ESRI User Conference*, Vol. **1**. Environmental Systems Research Institute, Redlands, CA, 277-281.

1994

- Cook, D., **Cressie, N.**, Majure, J., and Symanzik, J. (1994). Some dynamic graphics for spatial data (with multiple attributes) in a GIS, in *Compstat '94. Proceedings of 11th Symposium, Vienna, Austria*, eds R. Dutter and W. Grossman. Physica-Verlag, Heidelberg, DE, 105-119.
- Davidson, J. L., Talukder, A., and **Cressie, N.** (1994). Texture analysis using partially ordered Markov models, in *Proceedings of International Conference on Image Processing (ICIP-94)*, Vol. **III**. IEEE Computer Society Press, Los Alamitos, CA, 402-406.
- Symanzik, J., Majure, J., Cook, D., and **Cressie, N.** (1994). Dynamic graphics in a GIS: A link between ARC/INFO and Xgobi. *Computing Science and Statistics*, **26**, 431-435.

1995

- Hua, X., Davidson, J. L., and **Cressie, N.** (1995). Mine boundary detection using Markov random field models, in *Detection Technologies for Mines and Minelike Targets. Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **2496**. SPIE, Bellingham, WA, 626-636.
- Stern, H.S. and **Cressie, N.** (1995). Bayesian and constrained Bayesian inference for extremes in epidemiology, in *1995 Proceedings of the Section on Epidemiology*. American Statistical Association, Alexandria, VA, 11-20.

1996

- Cressie, N.** (1996). Statistical modeling of environmental data in space and time, in *Spatial Accuracy Assessment in Natural Resources and Environmental Sciences: Second International Symposium*, eds H.T. Mowrer, R.L. Czaplewski, and R.H. Hamre. General Technical Report RM-GTR-277, USDA Forest Service, Fort Collins, CO, 1-3.
- Cressie, N.**, Olsen, A., and Cook, D. (1996). Massive data sets: Problems and possibilities with application to environmental modeling, in *Massive Data Sets: Proceedings of a Workshop*. National Academy Press, Washington, DC, 115-119.
- Majure, J.J., Cook, D., **Cressie, N.**, Kaiser, M., Lahiri, S., and Symanzik, J. (1996). Spatial CDF estimation and visualization with applications to forest health monitoring. *Computing Science and Statistics*, **27**, 93-101.
- Majure, J.J., **Cressie, N.**, Cook, D., and Symanzik, J. (1996). GIS, spatial statistical graphics, and forest health, in *Proceedings of Third International Conference/Workshop on Integrating GIS and Environmental Modeling, Santa Fe, NM, January 21-26, 1996*. National Center for Geographic Information and Analysis. Santa Barbara, CA. Find it on CD and at <http://escholarship.org/uc/item/43x094z3.pdf>.

1997

- Cressie, N.** and Lawson, A. B. (1997). Models and inference for clustering of locations of mines and minelike objects, in *Detection and Remediation Technologies for Mines and Minelike Targets II*, eds A.C. Dubey and R.L. Barnard. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **3079**. SPIE, Bellingham, WA, 519-530.
- Aldworth, J. and **Cressie, N.** (1997). Comparison of spatial cumulative distribution function predictors of a spatial process sampled with measurement error, in *1997 Proceedings of the Section on Statistics and the Environment*. American Statistical Association, Alexandria, VA, 43-48.
- Hua, X., Davidson, J.L., and **Cressie, N.** (1997). Mine boundary detection using partially ordered Markov Models, in *Statistical and Stochastic Methods in Image Processing II*, eds F. Preteux, J. L. Davidson, and E.R. Dougherty. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **3167**. SPIE, Bellingham, WA, 152-163.

*Unrefereed Articles, ctd:*

Huang, H.C. and **Cressie, N.** (1997). Multiscale spatial modeling, in *1997 Proceedings of the Section on Statistics and the Environment*. American Statistical Association, Alexandria, VA, 49-54.

### 1998

**Cressie, N.** and Lawson, A. B. (1998). Bayesian hierarchical analysis of minefield data, in *Detection and Remediation Technologies for Mines and Minelike Targets III*, eds A.C. Dubey, J.F. Harvey, and J.T. Broach. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **3392**. SPIE, Bellingham, WA, 930-940.

### 1999

Gabrosek, J., **Cressie, N.**, and Huang, H. C. (1999). Spatio-temporal prediction of level 3 data for NASA's earth observing systems, in *Spatial Accuracy Assessment: Land Information Uncertainty in Natural Resources*, eds K. Lowell and A. Jaton. Ann Arbor Press, Chelsea, MI, 331-337.

### 2000

**Cressie, N.** (2000). Position paper: Workshop on Hierarchical Modeling in Environmental Statistics (Columbus, OH, May 14-16, 2000). Referenced at <https://stat.osu.edu/about/events/conferences>.

**Cressie, N.** (2000). Spatial statistics and environmental sciences, in *2000 Proceedings of the Section on Statistics and the Environment*. American Statistical Association, Alexandria, VA, 1-10.

**Cressie, N.** and Mugglin, A. S. (2000). Spatio-temporal hierarchical modeling of an infectious disease from (simulated) count data, in *Compstat. Proceedings in Computational Statistics*, eds J. G. Bethlehem and P. G. M. van der Heijden. Physica-Verlag, Heidelberg, DE, 41-52.

### 2001

**Cressie, N.** and Johannesson, G. (2001). Space-time modeling of total column ozone (TCO) satellite data: Exploratory analysis in a multiresolution context, in *Proceedings of the First Spanish Workshop on Spatio-Temporal Modelling of Environmental Processes (METMA)*. Benicassim, Castellon, Spain, 41-49.

**Cressie, N.** and Ver Hoef, J. M. (2001). Multivariate geostatistics for precision agriculture (with discussion). *Bulletin of the International Statistical Institute*, Invited Papers Volume **59**, Book 1, 407-410.

Wendt, D., **Cressie, N.**, and Johannesson, G. (2001). A spatial-temporal statistical approach to command and control problems in battle-space digitization, in *Battlespace Digitization and Network-Centric Warfare*, ed. R. Suresh. *Society of Photo-Optical Instrumentation Engineers (SPIE) Proceedings*, Vol. **439**. SPIE, Bellingham, WA, 232-243.

### 2002

Pavlicova, M., **Cressie, N.**, and Santner, T. J. (2002). Using enhanced FDR for simultaneous thresholding of fMRI data, in *2002 Proceedings of the Joint Statistical Meetings, Biometrics Section*. American Statistical Association, Alexandria, VA, 2653-2658.

Sain, S. and **Cressie, N.** (2002). Multivariate lattice models for spatial environmental data, in *2002 Proceedings of the Joint Statistical Meetings, Section on Statistics and the Environment*. American Statistical Association, Alexandria, VA, 2820-2825.



2003

**Cressie, N.,** Wendt, D., Johannesson, G., Mugglin, A., and Hrafnkelsson, B. (2003). A spatial-temporal statistical approach to problems in command and control, in *Proceedings of the Sixth Annual US Army Conference on Applied Statistics 2000, Army Research Laboratory*, eds B. Bodt and E. Wegman, 170-190.

Johannesson, G., **Cressie, N.**, and Huang, H.-C. (2003). Dynamic multi-resolution spatial models, in *Proceedings of AIC2003: Science of Modeling*, eds T. Higuchi, Y. Iba, and M. Ishiguro. Institute of Statistical Mathematics, Tokyo, Japan, 167-174.

2004

**Cressie, N.** and Irwin, M. (2004). Release of *Web-Project: ENSO*, showing long-lead forecasting of Tropical Pacific sea surface temperature anomalies (<http://niasra.uow.edu.au/cei/webprojects/UOW175993.html>).

2005

**Cressie, N.** and Yao, Y. (2005). Release of *Web-Project: TCO*, showing spatial prediction of total column ozone over the globe using a fast multi-resolution spatial statistical model (<http://niasra.uow.edu.au/cei/webprojects/UOW175994.html>).

**Cressie, N.**, Berliner, L. M., and Jezek, K. C. (2005). Release of *Web-Project: Ice Streams*, in combination with release of *Tutorial on Bayesian Statistics for Geophysicists*, showing physical-statistical modeling of ice-stream dynamics (<http://niasra.uow.edu.au/cei/webprojects/UOW175996.html>).

Berliner, L. M., **Cressie, N.**, Jezek, K., Kim, Y., and Lam, C. Q. (2005). Hierarchical Bayesian modeling of the movement of ice streams, in *Statistical Solutions to Modern Problems: Proceedings of the 20th International Workshop on Statistical Modelling, Sydney, Australia, July 10-15, 2005*, eds A. R. Francis, K. M. Matawie, A. Oschlack, and G. K. Smyth, 3-15.

Ganguly, A. R., Hsing, T., Katz, R., Erickson, D. J., Ostrouchov, G., Wilbanks, T. J., and **Cressie, N.** (2005). Multivariate dependence among extremes, abrupt change, and anomalies in space and time for climate applications, in *Proceedings of the International Workshop on Data Mining Methods for Anomaly Detection*, eds D. Margineantu, S. Bay, P. Chan, and T. Lane, 25-26.

2006

**Cressie, N.** and Johannesson, G. (2006). Spatial prediction for massive datasets, in *Mastering the Data Explosion in the Earth and Environmental Sciences: Proceedings of the Australian Academy of Science Elizabeth and Frederick White Conference*. Australian Academy of Science, Canberra, Australia (11 pp.).

2007

Calder, C.A. and **Cressie, N.** (2007). Some topics in convolution-based spatial modeling. *Bulletin of the International Statistical Institute - LXII* (Proceedings of the 56th Session of the International Statistical Institute, Lisbon, Portugal), 132-139.

Paul, R., **Cressie, N.**, Buxton, B. E., Calder, C. A., Craigmile, P. F., Li, H., McMillan, N. J., Morara, M., Sanford, J., Santner, T. J., and Zhang, J. (2007). A Bayesian hierarchical model of arsenic exposure based on NHEXAS data: A comparison of US EPA Region 5 and Arizona, in *2007 Proceedings of the Joint Statistical Meetings*. American Statistical Association, Alexandria, VA, 1055-1062.

Sain, S.R., Furrer, R., and **Cressie, N.** (2007). Combining regional climate model output via a multivariate Markov random field model. *Bulletin of the International Statistical Institute - LXII* (Proceedings of the 56th Session of the International Statistical Institute, Lisbon, Portugal), 1375-1382.

Shi, T. and **Cressie, N.** (2007). Data mining of MISR aerosol product using spatial statistics. *Proceedings of the 2007 IEEE Symposium on Computational Intelligence and Data Mining*. IEEE Press, Piscataway, NJ, 712-719.

## 2008

**Cressie, N.** and Kang, L. (2008). Soil mapping using spatial statistics: Kriging for very large datasets, in *Proceedings of First Global Workshop on High Resolution Digital Soil Sensing and Mapping*, Vol. I, Sydney, Australia (14 pp.).

## 2009

Katzfuss, M. and **Cressie, N.** (2009). Maximum likelihood estimation of covariance parameters in the spatial-random-effects model, in *2009 Proceedings of the Joint Statistical Meetings*. American Statistical Association, Alexandria, VA, 3378-3390.

## 2010

**Cressie, N.** and Calder, C. A. (2010). Release of *Web-Project: STB*, showing statistical modeling and analysis of human-exposure pathways from sources to biomarkers (<http://niasra.uow.edu.au/cei/webprojects/UOW175997.html>).

Smith, R. and **Cressie, N.** (2010). Statistical interpolation methods; supplement to the White Paper, "Spatial and temporal interpolation of environmental data," written for the Workshop on Creating Surface Temperature Datasets to Meet 21st Century Challenges, Met Office Hadley Centre, Exeter, UK, September 2010 (8 pp.) (<http://www.surfacetemperatures.org/whitepapers>).

## 2011

**Cressie, N.**, Hoeting, J. A., Lele, S., McRoberts, R., Ogle, K., Smith, R., Stefanski, L., and Ziv, G. (2011). Measuring, monitoring and forecasting progress toward sustainability, in *Mathematical and Statistical Challenges for Sustainability: Report of a Workshop held November 15-17, 2010*. (18 pp.) American Mathematical Society, Providence, RI, 102-118.

**Cressie, N.** and Katzfuss, M. (2011). Release of *Web-Project: CO<sub>2</sub>*, in combination with release of *Tutorial on Fixed Rank Kriging of CO<sub>2</sub> data*, showing global spatial and spatio-temporal statistical modeling and mapping of CO<sub>2</sub> (<http://niasra.uow.edu.au/cei/webprojects/UOW175995.html>).

Bradley, J.R., **Cressie, N.**, and Shi, T. (2011). Selection of rank and basis functions in the spatial random effects model, in *2011 Proceedings of the Joint Statistical Meetings*. American Statistical Association, Alexandria, VA, 3393-3406.

## 2012

**Cressie, N.**, Mannshardt, E., and Kang, E. L. (2012). Release of *Web-Project: Warming*, showing projected temperature increases in North America in the period 2041-2070 (<http://niasra.uow.edu.au/cei/webprojects/UOW177279.html>).

- Bradley, J.R., **Cressie, N.**, and Shi, T. (2012). Local spatial-predictor selection, in *2012 Proceedings of the Joint Statistical Meetings*. American Statistical Association, Alexandria, VA, 3098-3110.
- Sengupta, A., **Cressie, N.**, Frey, R., and Kahn, B. (2012). Statistical modeling of MODIS cloud data using the Spatial Random Effects model, in *2012 Proceedings of the Joint Statistical Meetings*. American Statistical Association, Alexandria, VA, 3111-3123.

*Other Contributions (book reviews, discussions, letters, etc.):*

**1974**

A two-dimensional random walk (Abstract in Proceedings of the 3rd Conference on Stochastic Processes). *Advances in Applied Probability*, **6**, 248-249.

**1975**

Testing for uniformity against a clustering alternative. Unpublished Ph.D. Thesis, Princeton University (153 pp.).

**1977**

Book review of “Lecture Notes on Queuing Systems” by G. Conolly. *Journal of the Royal Statistical Society A*, **140**, 97-98.

Comment on “Estimation of spatial distributions from point sources with applications to air pollution measurement” by P. Switzer. *Bulletin of the International Statistical Institute*, **47**, Book 2, 144.

**1979**

Random set limit theorems (Abstract in Proceedings of the 8th Conference on Stochastic Processes). *Advances in Applied Probability*, **11**, 281-282.

**1981**

Comment on “Random fields in models in surface science” by R. J. Adler. *Bulletin of the International Statistical Institute*, **49**, Book 2, 680-681.

Comment on “The relation of sums and extremes of random variables” by T. Mori. *Bulletin of the International Statistical Institute*, **49**, Book 2, 899-900.

**1982**

Revised the book, “Image Analysis and Mathematical Morphology” by J. Serra. Academic Press, London, UK.

Statistics in Resource Development theme of the 6th Australian Statistical Conference (Melbourne, 23-27 August 1982). *Bulletin of Australian News in Geomathematics*, February, 1982.

Letter to the Editor. *The Statistician*, **31**, 117.

Book review of “Applied Regression Analysis, Second Edition” by N. R. Draper and H. Smith. *Australian Journal of Statistics*, **24**, 387-390.

Short course on geostatistics. *Statistical Society of Australia Newsletter*, No. **21**, November 1982.

**1984**

Book review of “Statistics on Spheres” by G. S. Watson. *Journal of the American Statistical Association*, **79**, 733.

*Other Contributions, ctd:*

**1985**

Comment on “Some aspects of the spline smoothing approach to nonparametric regression curve fitting” by B. W. Silverman. *Journal of the Royal Statistical Society B*, **47**, 34-35.

Response to a Letter to the Editors (joint with L. J. Sheffield and H. J. Whitford). *Journal of Chronic Diseases*, **38**, 1030.

Intensity estimation in a spatial model of overlapping particles, with G. M. Laslett and S. Liow. Unpublished manuscript (12 pp.).

**1986**

Comment on “Size and shape spaces for landmark data in two dimensions” by F. L. Bookstein. *Statistical Science*, **1**, 226.

Comment on “Statistical synthetic estimates of undercount for small areas” by C. T. Isaki, G. J. Diffendal, and L. K. Schultz. *Proceedings of Bureau of the Census Second Annual Research Conference*. U. S. Bureau of the Census, Washington, DC, 580-583.

ASA/NSF/Census Fellowship Program: Some perceptions and suggestions. An evaluation of the ASA/NSF/Census Fellowship Program, 1980-1986 (a report to the American Statistical Association under the chairmanship of W. Allen Spivey), A51-A58.

**1987**

Book review of “Spatial Data Analysis by Example” by G. Upton and B. Fingleton. *Technometrics*, **29**, 114-116.

Comment on “Census undercount adjustment and the quality of geographic population distributions” by A. L. Schirm and S. H. Preston. *Journal of the American Statistical Association*, **82**, 980-983.

Written testimony given to Congressional Hearing called by U. S. House of Representatives Committee on Post Office and Civil Service, Subcommittee on Census and Population, on “The Impact of Population Undercount,” San Francisco, CA, 8/17/87.

Statistics for spatial data. *Stat Lab News*, No. **1**, June 1987, pp. 2, 6, 7.

Exact interpolation. *Geostatistics: An Interdisciplinary Geostatistics Newsletter*, **1**, Summer 1987, 11-13.

Comment on “Recursive methods in image processing” by P. J. Green and D. M. Titterton. *Bulletin of the International Statistical Institute*, **52**, Book 4, 100-101.

Comment on “Application of some empirical Bayes methods to small area estimation” by E. Spjøtvoll and I. Thomsen. *Bulletin of the International Statistical Institute*, **52**, Book 4, 473.

Mixing ergodicity and geostatistics. *Geostatistics: An Interdisciplinary Geostatistics Newsletter*, **2**, Autumn 1987, 9-12.

**1988**

To adjust or not to adjust: U. S. census counts. *Stat Lab News*, No. **2**, October 1988, 7-8.

Editorial: Statistics in chemistry. *Chemometrics and Intelligent Laboratory Systems*, **3**, 249-250.

*Other Contributions, ctd:*

### 1989

Comment (joint with F. Pesarin) on “Space-time modelling with long-memory dependence: Assessing Ireland’s wind resource” by J. Haslett and A. E. Raftery. *Applied Statistics*, **38**, 31-32.

Book review of “Asymptotics for Generalized Chi-Square Goodness-of-Fit Tests” by F. C. Drost. *Journal of the Royal Statistical Society A*, **152**, 258-259.

Letter to the Editor. *Geostatistics: An Interdisciplinary Geostatistics Newsletter*, **3**, Spring 1989, 15.

### 1990

Book review of “Transformation and Weighting in Regression” by R. J. Carroll and D. Ruppert. *Mathematical Reviews*, **90**, 6595-6596.

Reply to G. Wahba’s Letter to the Editor, *American Statistician*, **44**, 256-258.

Report to Special Advisory Panel, U. S. Bureau of the Census, on Final Guidelines for Adjustment of the 1990 Decennial Census (14 pp.).

### 1991

Book review of “Robust Estimation and Testing” by R. G. Staudte and S. J. Sheather. *Mathematical Reviews*, **91**, 3307-3308.

Response (joint with D. Ruppert and R. Carroll) to “Generalized Linear Models for Enzyme Kinetic Data” by J. A. Nelder. *Biometrics*, **47**, 1610-1615.

Produced and participated in one-hour videotape, “Oscar Kempthorne: From Observation to Inference,” for *American Statistical Association Committee for the Filming of Distinguished Statisticians*.

[https://www.youtube.com/watch?v=59TjKM8s\\_dA](https://www.youtube.com/watch?v=59TjKM8s_dA)

<https://www.youtube.com/watch?v=PgfmoO1YQDo>

<https://www.youtube.com/watch?v=01YUnb2JPfA>

<https://www.youtube.com/watch?v=umZK3gnPnec>

<https://www.youtube.com/watch?v=hUKkuTeQk4E>.

First International Conference/Workshop on Integrating Geographic Information Systems and Environmental Modeling. *Amstat News*, December 1991, 21.

Hierarchical testing of parametric models using the power-divergence family of test statistics, by F. M. Medak and N. Cressie. *Statistical Laboratory Preprint*, No. **91-14**, Iowa State University, Ames, IA.

### 1992

Report to Environmental Protection Agency (joint with L. Young, W. S. Liggett, R. J. Little, and J. H. Matis); “Review of EMAP Statistics and Design, Review Meeting Held November 4-6, 1991, San Francisco, California” (20 pp.).

Comment on “Should we have adjusted the Census of 1980?” by D. A. Freedman and W. C. Navidi. *Survey Methodology*, **18**, 32-34.

*Other Contributions, ctd:*

**1994**

Comment (joint with M. S. Kaiser) on “Small area estimation: An appraisal” by M. Ghosh and J. N. K. Rao. *Statistical Science*, **9**, 76-80.

Comment on “An approach to statistical spatial-temporal modeling of meteorological fields” by M. S. Handcock and J. R. Wallis. *Journal of the American Statistical Association*, **89**, 379-382.

Editorial: Limits of detection. *Chemometrics and Intelligent Laboratory Systems*, **22**, 161-163.

**1995**

Book review of “Optimally Sequentially Planned Decision Procedures” by N. Schmitz. *Metrika*, **42**, 141-143.

**1997**

Book review of “Introduction to Disjunctive Kriging and Nonlinear Geostatistics” by J. Rivoirard. *SIAM Review*, **39**, 337-340.

Cook, D., et al. (6 co-authors, including **Cressie, N.**). Exploring associations among mid-Atlantic stream indicators using dynamic multivariate graphics and geographic mapping in a highly immersive virtual reality environment. *Computing Science and Statistics*, **29**, 220.

Comment on “Trends in ozone exposure in Harris County, Texas” by R. J. Carroll, R. Chen, T. H. Li, H. J. Newton, H. Schmiediche, N. Wang, and E. I. George. *Journal of the American Statistical Association*, **92**, 411-413.

Comment on “Random sampling or geostatistical modelling? Choosing between design-based and model-based sampling strategies for soil” by D.J. Brus and J.J. de Gruijter. *Geoderma*, **80**, 51-52.

Comment (joint with H.-C. Huang) on “On Bayesian analysis of mixtures with an unknown number of components” by S. Richardson and P.J. Green. *Journal of the Royal Statistical Society B*, **59**, 777.

Reply (joint with S.S. Carroll) to Discussion by David C. Garen, of “A comparison of geostatistical methodology used to estimate snow water equivalent” by S.S. Carroll and **N. Cressie**. *Journal of the American Water Resources Association*, **33**, 221-222.

Environmental statistics at Iowa State University. *Newsletter of American Statistical Association Section on Statistics and the Environment*, Vol. **1**, 1997.

American Statistical Association Section on Statistics and the Environment: Strategic plan review. *Amstat News*, November 1997, 27-28.

**1998**

Letter to the Editor. *American Journal of Human Biology*, **10**, 1-2.

Comment on “Model-based geostatistics” by P.J. Diggle, J.A. Tawn, and R.A. Moyeed. *Applied Statistics*, **47**, p. 335.

Obituary (joint with C. G. Crawford): Geoffrey S. Watson, 1921-1998. *International Association for Mathematical Geology Newsletter*, No. **56**, June 1998, p. 9.

Book review (joint with J. Symanzik) of “Variowin - Software for Spatial Data Analysis in 2D” by Y. Pannatier. *Computational Statistics*, **13**, 419-422.

*Other Contributions, ctd:*

Environmental statistics and ENVR. *Newsletter of American Statistical Association Section on Statistics and the Environment*, Vol. **2**, 1998.

ENVR 1998 award recipients and newsletter. *Amstat News*, August/September 1998, p. 29.

ENVR - The year in review. *Amstat News*, December 1998, p. 42.

Comment (joint with C.K. Wikle): Strategies for dynamic space-time statistical modeling. Discussion of “The kriged Kalman filter” by K.V. Mardia, C. Goodall, E. Redfern, and F.J. Alonso. *Test*, **7**, 257-264.

Abstract (joint with J. Gabrosek and H.-C. Huang): Spatial data analysis, statistical modeling and spatial prediction of earth’s total column ozone. *Computing Science and Statistics*, **30**, p. 42.

## 1999

Letter to the Editor. *American Journal of Human Biology*, **11**, 433-434.

Environmental statistics at The Ohio State University. *Newsletter of the American Statistical Association Section on Statistics and the Environment*, Vol. **3**, Summer 1999, p. 3.

ENVR committee structure. *Amstat News*, November 1999, p. 46.

## 2000

Environmental and spatial statistical research at The Ohio State University. *Newsletter of the American Statistical Association Section on Statistics and the Environment*, Vol. **4**, Summer 2000, pp. 5, 7.

Spatial Statistics in the Life and Medical Sciences. *Biostatistics Newsletter*, The Ohio State University, 2000.

Workshop on Hierarchical Modeling in Environmental Statistics. *The International Environmetrics Society (TIES) Newsletter*, Vol. **6**, August 2000, p. 9.

Workshop on Hierarchical Modeling in Environmental Statistics (joint with T. Gregoire). *Amstat News*, July 2000, p. 51.

## 2002

Environmental Data Seminar at The Ohio State University. *The International Environmetrics Society (TIES) Newsletter*, Vol. **8**, May 2002, pp. 10-11.

The perspective of quantitative science in the debate about environmental degradation: Panel discussion. *TIES Newsletter*, Vol. **8**, November 2002, pp. 10-18.

Directed Markov point processes – characterisation and construction, by A. J. Baddeley, M. G. Nair, and **N. Cressie**. *Department of Statistics Technical Report No. 693*, The Ohio State University, Columbus, OH (29 pp.).

## 2003

El Niño forecasting using Hierarchical Dynamic (HiDyn) Models: A web-based product. *The International Environmetrics Society (TIES) Newsletter*, Vol. **9**, November 2003, pp. 15-16.

Poster: Modifying the FDR procedure for use with fMRI data, by M. Pavlicova, **N. Cressie**, T. J. Santner, and A. Algaze. *NeuroImage*, **19**, S919 (2003), where notice of the poster presentation appears under the title, “Using enhanced FDR to find activation in fMRI images.”



**2004**

Comment on “Markov chain Monte Carlo methods for high dimensional inversion in remote sensing” by H. Haario et al. *Journal of the Royal Statistical Society B*, **66**, 638.

**2007**

Comment on “Modern statistics for spatial point processes” by J. Moller and R. Waagepetersen. *Scandinavian Journal of Statistics*, **34**, 690-691.

**2009**

Statistical Counterpoint, by **N. Cressie**, O. Ahlqvist, H. Ban, and the Synchronous Objects team, one of the Synchronous Objects for “One Flat Thing, reproduced,” a webpage showing visualization/animation of dance (<http://synchronousobjects.osu.edu/content.html#/statisticalCounterpoint>).

“Noel Cressie on Dance and Statistics,” a blog on Synchronous Objects for “One Flat Thing, reproduced” (<http://synchronousobjects.osu.edu/blog/2009/03/noel-cressie-on-dance-and-statistics/>).

**2010**

Comment: Statistical dependence in stream networks, by **N. Cressie** and D. O’Donnell, a comment on “A moving average approach for spatial statistical models for stream networks” by J. Ver Hoef and E. Peterson. *Journal of the American Statistical Association*, **105**, 18-21.

Comment: Hierarchical statistical modeling for paleoclimate reconstruction, by **N. Cressie** and M. P. Tingley, a comment on “The value of multi-proxy reconstruction of past climate” by B. Li, D. Nychka, and C. Ammann. *Journal of the American Statistical Association*, **105**, 895-900.

White Paper: Spatial and temporal interpolation of environmental data, by T. Smith, P. Jones, E. Kent, M. Cox, **N. Cressie**, D. Dee, and R. Smith, written for the Workshop on Creating Surface Temperature Datasets to Meet 21st Century Challenges, Met Office Hadley Centre, Exeter, UK, September 2010 (8 pp.) (<http://www.surface-temperatures.org/whitepapers>).

White Paper: The (statistical) science of sustainability, by **N. Cressie**, written for the Workshop on Mathematical Challenges for Sustainability, DIMACS Center, Rutgers University, NJ, November 2010 (4 pp.).

**2011**

Comment, by **N. Cressie**, a comment on “Spatial prediction in the presence of positional error” by T.R. Fanshawe and P.J. Diggle. *Environmetrics*, **22**, 125-126.

Editorial: Special issue on time series in the environmental sciences, by **N. Cressie** and S.H. Holan. *Journal of Time Series Analysis*, **32**, 337-338.

Tutorial on Fixed Rank Kriging (FRK) of CO<sub>2</sub> data, by M. Katzfuss and **N. Cressie**. Department of Statistics Technical Report No. **858**, The Ohio State University, Columbus, OH (23 pp.).

Tribute to Julian Besag, 1945-2010: A tribute by **N. Cressie** (<http://sustain.bris.ac.uk/JulianBesag/tributes/Oxford.html>).

*Other Contributions, ctd:*

## 2012

Perspectives in statistics for young statisticians, by **N. Cressie**. *Statistical Society of Australia, Inc. (SSAI) Newsletter*, September 2012, 22-23.

Thoughts on Bayesian statistical inference for regional climate projections in North America, by **N. Cressie**. *SAMSI Blog* (<http://samsiatrtp.wordpress.com/category/author-names/noel-cressie/>).

## 2013

Interview: “Spatio-Temporal Statistics as its own discipline: Noel Cressie and Christopher Wikle on their award-winning collaboration,” in *Statistics Views*, John Wiley and Sons (<http://www.statisticsviews.com/details/feature/4277321/Spatio-Temporal-Statistics-as-its-own-discipline-Noel-Cressie--Christopher-Wikle.html>)

Blog: Hierarchical spatio-temporal models and survey research, by C.K. Wikle, S.H. Holan, and **N. Cressie**, in *Statistics Views*, John Wiley and Sons (<http://www.statisticsviews.com/details/feature/4730991/Hierarchical-Spatio-Temporal-Models-and-Survey-Research.html>).

Column: How can survey estimates of small areas be improved by leveraging social-media data?, by **N. Cressie**, S.H. Holan, and C.K. Wikle. Ask the Expert Column, in *The Survey Statistician*, Newsletter of the International Association of Survey Statisticians, No. **68**, July 2013, pp. 14-15.

Interview of **N. Cressie**: methods.blog, the official blog of *Methods in Ecology and Evolution*, published by the British Ecological Society (<https://www.youtube.com/watch?v=kCIxAlpkiOM>).

Technical Brief: Spatial statistical data fusion (SSDF), on work by A. Braverman, **N. Cressie**, and H. Nguyen. *NASA Tech Briefs*, **37**, November 2013 (<http://www.techbriefs.com>).

Foreword: *Spatio-Temporal Design: Advances in Efficient Data Acquisition*, eds J. Mateu and W. Müller. Wiley, Chichester, UK, pp. xix-xx.

## 2014

Interview of A. Braverman and **N. Cressie**: “The search for CO<sub>2</sub>: NASA to launch satellite to map sources and sinks,” in *Biometric Bulletin*, Vol. **31**, Issue 1, January-March 2014.

Interview of **N. Cressie**: ABC Radio National’s Drive program with Waleed Aly, Thursday, 3 July 2014, “NASA satellite to search for climate change clues” (<http://www.abc.net.au/radionational/programs/drive/nasa-satellite-to-search-for-climate-change-clues/5570044>).

Interview of **N. Cressie**: ABC Illawarra with Nick Rheinberger, Friday, 4 July 2014, “UOW and NASA unite for carbon dioxide counting mission” (<http://soundcloud.com/uow-2/professor-noel-cressie-talks-to-abc-illawarra>).

Interview of **N. Cressie**: Australian Broadcasting Corporation’s “StarStuff,” Wednesday, 9 July 2014, “NASA launches satellite to monitor Earth’s CO<sub>2</sub>” (<http://www.abc.net.au/science/starstuff/>).

Working Paper: Visualizing massive spatial datasets using multi-resolution global grids, by T. Stough, A. Braverman, **N. Cressie**, E. Kang, A. Michalak, H. Nguyen, and K. Sahr. *NIASRA Working Paper 05-14* (24 pp.) (<https://niasra.uow.edu.au/content/groups/public/@web/@inf/@math/documents/mm/uow232953.pdf>).

*Other Contributions, ctd:*

White Paper: Statistical science: Contributions to the administration's research priority on climate change, by B. Sanso et al. (11 co-authors, including **N. Cressie**), written by the American Statistical Association's Advisory Committee for Climate Change Policy, April 2014 (5 pp.).

**2015**

Comment: Capturing multivariate spatial dependence: Model, estimate, and then predict, by **N. Cressie**, S. Burden, W. Davis, P. Krivitsky, P. Mokhtarian, T. Seusse, and A. Zammit-Mangion, a comment on "Cross-covariance functions for multivariate geostatistics" by M. G. Genton and W. Kleiber. *Statistical Science*, **30**, 170-175.

Comment: Spatial sampling designs depend as much on "how much?" and "why?" as on "where?", by **N. Cressie** and R.L. Chambers, a comment on "Optimal design in geostatistics under preferential sampling" by G. da Silva Ferreira and D. Gamerman. *Bayesian Analysis*, **10**, 741-748.

Poster: 95% prediction regions: Multivariate uncertainty quantification for retrieved atmospheric states, by **N. Cressie** and S. Burden, presented at the Eleventh International Workshop on Greenhouse Gas Measurements from Space, June 2015, Pasadena, CA, USA (IWGGMS-11)  
(<https://sites.google.com/site/iwggms11/home/upload-talks-here>).

Interview of **N. Cressie**: "Measuring and mapping sources and sinks of carbon dioxide in the atmosphere," in *ArcWatch*, August 2015  
(<https://www.esri.com/esri-news/arcwatch/0815/measuring-and-mapping-sources-and-sinks-of-co2-in-the-atmosphere>).

**2016**

Poster: Bivariate modelling of poverty and unemployment in Missouri, by R. McDonald, A. Zammit-Mangion, and **N. Cressie**, presented at the Workshop on Spatial and Spatio-Temporal Design and Analysis for Official Statistics, May 2016, Columbia, MO, USA.

Interview of **N. Cressie**: ABC Illawarra, 17 June 2016, "OCO-2 Update"  
(<http://niasra.uow.edu.au/cei/archive/index.html>).

Poster: Quantifying weights for fitting an errors-in-variables model to TCCON and OCO-2 calibration data, by B. Zhang, **N. Cressie**, and D. Wunch, presented at OCO-2 Science Team Meeting, October 2016, Boulder, CO, USA.

**2017**

A Common Task Framework (CTF) for objective comparison of spatial prediction methodologies, by C. K. Wikle, **N. Cressie**, A. Zammit-Mangion, and C. Shumack. *Statistics Views*, Wiley, Chichester, UK  
([www.statisticsviews.com/details/feature/10511089/A-Common-Task-Framework-CTF-for-Objective-Comparison-of-Spatial-Prediction-Metho.html](http://www.statisticsviews.com/details/feature/10511089/A-Common-Task-Framework-CTF-for-Objective-Comparison-of-Spatial-Prediction-Metho.html)).

Summary of "Workshop on Spatial and Spatio-Temporal Design and Analysis for Official Statistics," by S. H. Holan, **N. Cressie**, C. K. Wikle, J. R. Bradley, and M. Simpson. NSF-Census Research Network report, archived at Cornell University Library (5 pp.).

A new map of global Ecological Marine Units: An environmental stratification approach, by R. Sayre (and 31 co-authors, including **N. Cressie**), a Special Publication of the American Association of Geographers, Washington, DC, USA (35 pp.).

Uncertainty, Statistical Science, and Black Swans, by **N. Cressie**. *Statistics Views*, Wiley, Chichester, UK  
([www.statisticsviews.com/details/feature/10576983/Uncertainty-Statistical-Science-and-Black-Swans.html](http://www.statisticsviews.com/details/feature/10576983/Uncertainty-Statistical-Science-and-Black-Swans.html)).

*Other Contributions, ctd:*

**2018**

Interview of **N. Cressie** : ABC Illawarra, 25 May 2018, “Election to Fellowship of the Australian Academy of Science” (<https://niasra.uow.edu.au/content/groups/public/@web/@inf/@math/documents/mm/uow248157.zip>).

**2019**

Comment on “Visualizing spatiotemporal models with virtual reality: from fully immersive environments to applications in stereoscopic view” by S. Castruccio, M.G. Genton, and Y. Sun. *Journal of the Royal Statistical Society, Series A*, **182**, 429.