

Pierre Goovaerts

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Education:

- Catholic University of Louvain-la-Neuve (Belgium), *B.S., Agriculture Engineering with Highest Honors (summa cum laude)*, 1987.
- Catholic University of Louvain-la-Neuve (Belgium), *Ph.D., Agricultural Science with Highest Honors (summa cum laude with congratulations from the Jury)*, 1992.
- Stanford University, Dept. of Geological and Environmental Sciences, *Post-Doctoral Research Fellow & Fulbright Scholar*, January 1993 to December 1994.

Professional Experience:

- *Director*, Board of Lake LeAnn Property Owner's Association, June 2012 to June 2013.
- *Associate Editor*, Mathematical Geosciences, October 2009 to present.
- *Geostatistician*, Computer Sciences Corporation, July 2008 to present. Geostatistical characterization of contaminated sediments, estimation of volumes of sediments to be dredged, design of sampling schemes and remediation strategies.
- *Associate Professor (courtesy appointment)*, Soil and Water Science Department, University of Florida, Gainesville, January 2006 to present.
- *President*, PGeostat LLC., January 2003 to present.
- *Chief Scientist*, BioMedware Inc., November 2002 to present.
- *Assistant Professor*, Dept. of Civil and Environmental Engineering, The University of Michigan at Ann Arbor, September 1997 to October 2002.

Teaching of classes in hydrology, statistics and probability, and geostatistics.

Consultant for EPA, NRC, BioMedware, ScoreBoard, Terumo, ERIM, CDM, Universities of Nebraska, Cincinnati and Tennessee, Tufts University. Review reports and contribute to development and application of (geo)statistics to environmental sciences, remote sensing, health science, forestry, design of experiment, and agriculture.

- *Senior Research Assistant*, Dept. of Environmental Sciences and Land Management, Catholic University of Louvain-la-Neuve, Belgium, September 1993 to September 1997.
- *Research Assistant*, Dept. of Environmental Sciences and Land Management, Catholic University of Louvain-la-Neuve, Belgium, April 1989 to April 1993.

Honors and awards received:

- Award for the best paper published in "Mathematical Geology", 1993.
- Firmin Van Brée Fellow of the Hoover foundation of the Belgian American Educational Foundation, 1993.
- Fulbright Research Scholarship, Stanford University, CA, 1993.
- Recipient of the 1999 Andrei Borisovich Vistelius Research Award attributed by the International Association of Mathematical Geology for an original and outstanding contribution, as a young scientist, to the application of mathematics and informatics to the earth sciences.
- Award for the best paper in Pedometrics published in 2000.
- 2013 Distinguished Lecturer Award, International Association of Mathematical Geology.

National and International Service:

- Secretary of the ISSS (International Soil Science Society) Working Group on Pedometrics (1998 to 2002), and elected chair for the period 2002-2003.
- Editor of the Newsletter of the ISSS (International Soil Science Society) Working Group on Pedometrics: 1998 to 2002.
- Member of the Editorial Board of the Oxford Univ. Press Series on Applied Geostatistics: 1998 to present.
- Member of the Education Committee of the IAMG, International Association for Mathematical Geology, (1999).
- Member of the Student Grant Commission of the IAMG (1999).
- Member of the Executive Committee of the North American Council on Geostatistics.
- Member of the Organizing and Scientific Committees of the 1st-6th European Conference on Geostatistics for Environmental Applications (1996, 1998, 2000, 2002, 2004, 2006).
- Member of the Scientific Committee of the Vth & VIth, VIIth International Geostatistical Congress (1996, 2000, 2004) and the 1999 Annual Conference of the International Association for Mathematical Geology.
- Member of the Science Advisory Board for the 4th, 5th & 6th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences.
- Member of PhD dissertation committees at the Universities of Santa Cruz (CA, 1994), Gent (Belgium, 1997), Louvain-la-Neuve (Belgium, 1997 & 2001), the Helsinki University of Technology (Finland, 1998), the French Institute of Petroleum (Paris, 1998), the Technical University of Lisbon (Lisbon, 1999), the National Polytechnic Institute of Lorraine (Nancy, 2001), the University of Michigan (2002), the New University of Lisbon (2004), The University of Florida (2008), Edith Cowan University (2011,2014), the Aix-Marseille University (2014).

- Session chair: 1st, 2nd, 3rd, 5th, 6th, 7th & 8th European Conference on Geostatistics for Environmental Applications (Lisbon, 1996; Valencia, 1998; Avignon, 2000; Lausanne, 2004; Rhodes, 2006; Southampton, 2008; Gent, 2010), 3rd, 7th, 8th, 12th, 15th & 16th Annual Conferences of the International Association for Mathematical Geology (Barcelona, 1997; Cancun, 2001; Berlin, 2002; Liege, 2006; Stanford 2009; Budapest, 2010), Vth, VIIth and VIIIth International Geostatistical Congress (Sydney, 1996; Calgary, 2004; Santiago, 2008), 3rd, 4th & 6th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences (Quebec, 1998; Amsterdam, 2000; Portland, 2004), 3rd, 4th & 7th Pedometrics Conference (Sydney, 1999; Gent, 2001; Tubingen, 2007), Association of American Geographer's annual meeting (San Francisco, 2007; Boston, 2008; Las Vegas, 2009; Washington DC, 2010; Seattle WA, 2011), URISA's GIS in Public Health Conference (New Orleans, 2007), International Society for Exposure Assessment 2008 (Pasadena, 2008), Spatial Statistics (The Netherlands, 2011), Environmental Health (Brazil, 2011).
- Keynote speaker: 2nd Pedometrics Conference (Madison, 1997), Soil Quality Workshop (Edmonton, 1998), 5th Annual Conference of the International Association for Mathematical Geology (Trondheim, 1999), 3rd Pedometrics Conference (Sydney, 1999), 6th, 9th and 11th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences (Portland, 2004; Leicester, 2010; Lansing, 2014), 6th European Conference on Geostatistics for Environmental Applications (Greece, 2006), 15th Annual Conferences of the International Association for Mathematical Geology (Stanford, 2009), VIII Iberian Geochemistry Conference / XVIII Geochemical Week (Castelo Branco, 2011), 9th International Symposium on Environmental Geochemistry (Aveiro, 2012), WALIS Forum (Perth, 2013), CRCSI (Cooperative Research Center for Spatial Information) Annual Conference (Christchurch, 2013).

Editorial Activities:

- External reviewer for the following agencies: NSF, NIH, NRC, National Environmental Research Council (UK), Natural Environment Research Council (UK), Swiss National Science Foundation, Romanian National Council for Scientific Research, and the "Fonds pour la Formation de Chercheurs et l'Aide a la Recherche" (FCAR), Quebec.
- Reviewer for 70 journals, including: Applied Geochemistry; Aquatic Living Resources; Australian Journal of Soil Research; Biology and Fertility of Soils; Biometrics; BMC Cancer; Canadian Journal of Fisheries and Aquatic Sciences; Canadian Journal of Forest Research; Canadian Journal of Remote Sensing; Canadian Journal of Statistics; Computational Geosciences; Computers and Electronics in Agriculture; Computer and Geosciences; Continental Shelf Research; Ecological Modeling; Ecology; Environmental and Ecological Statistics; Environmental Forensics Journal; Environmental Health; Environmental Management; Environmental Pollution; Environmental Science & Technology; Environmetrics; Epidemiology; European Journal of Population; European Journal of Soil Science; European Journal of Soil Biology; Forest Science; Geoderma; Geographical Analysis; Geographical and Environmental Modelling; Ground Water Monitoring & Remediation; Health and Place; Hydrological Sciences Journal; International Journal of Applied Earth Observation and Geoinformation; International Journal of Climatology; International Journal of Health

Geographics; International Journal of Geographical Information Systems; International Journal of Geographical Information Science; International Journal of Geothermal Research and its Applications; Journal of Agriculture, Ecosystems and Environment; Journal of the American Water Resources Association; Journal of Applied Meteorology; Journal of Computational and Graphical Statistics; Journal of Contaminant Hydrology; Journal of Engineering Mathematics; Journal of Environmental Management; Journal of Environmental Quality; Journal of Geographical Information Sciences; Journal of Geographical Systems; Journal of Geophysical Research; Journal of Hazardous Materials; Journal of Health and Place; Journal of Hydrology; Journal of Hydrometeorology; Journal of Sedimentary Research; Journal of Water Resources Planning and Management; Letters in Spatial and Resource Sciences; Mathematical Geology; METRON -International Journal of Statistics; Photogrammetric Engineering and Remote Sensing; Plant and Soil; Precision Agriculture; Remote sensing of Environment; Soil and Tillage Research; Soil Science Society of America Journal; Soil Science; Soil and Sediment Contamination: an International Journal; Stochastic Environmental Research and Risk Assessment; Transaction in GIS; The Science of the Total Environment; Water, Air and Soil Pollution; Water Resources Research; Weed Research.

- Reviewer for the Consortium for Risk Evaluation with Stakeholder Participation, report entitled “*Defining background groundwater quality at the Savannah River Site.*”.
- Editor of special issues in *Geoderma* (2001, 2007), *Journal of Geographical Systems* (2005), *Environmental and Ecological Statistics* (2007).

Short courses taught:

- 18 hr short course on Geostatistical Analysis of Environmental Data, Faculty of Agriculture (UCL, Belgium), April 28-30 1997, attendance: 12.
- 9 hr short course on Spatial Data Analysis, Ecole Polytechnique Federale de Lausanne (EPFL, Switzerland), February 12-13 1998, attendance: 15.
- 15 hr seminar on geostatistics, Snowden Mining Industry Consultants PtY Ltd (Perth), September 1999, attendance: 14.
- 10 hr short course on modeling of local uncertainty and stochastic simulation, Edith Cowan University (ECU, Perth), September 1999, attendance: 10.
- 9 hr short course on Spatial Data Analysis, Ecole Polytechnique Federale de Lausanne (EPFL, Switzerland), February 12-13 2000, attendance: 20.
- 8 hr short course “Geostatistical Analysis of Environmental Data”, Institute for Statistics and Information Management of the New University of Lisbon, November 2002, attendance: 25.
- 1.5 day short course “Geostatistical Analysis of Spatial Data”, The University of Michigan, March 12-13 2003, attendance: 15.
- 1.5 day short course “Exploratory Spatial Data Analysis”, The University of Michigan, June 11-12 2003, attendance: 10.
- 5 day short course “Advanced Spatial Analysis Workshop for Public Health”, Olympia (WA), August 11-15 2003, attendance: 10.

- 2 day short course “Introduction to Geostatistical Analysis of Spatial Data”, The University of Michigan, 12/2-12/3 2003, 4/27-4/28 2004, 12/7-12/8 2004, 10/25-10/26 2005.
- 2 day short course “Advanced Geostatistical Analysis of Spatial Data”, The University of Michigan, December 4-5 2003, April 29-30 2004, December 9-10 2004, October 26-27 2005.
- 5 day short course “Advanced Spatial Analysis Workshop for Public Health and Biosurveillance”, Ann Arbor, August 24-27 2004, attendance: 10.
- 5 day short course “Advanced Spatial Analysis Workshop for Public Health and Biosurveillance”, Ann Arbor, August 23-26 2005, attendance: 8.
- 4 day short course “Advanced Spatial Analysis Workshop for Public Health”, in-house at Chicago Dept of Public Health, attendance: 16.
- 5 day short course “Geostatistical Analysis of Environmental Data”, Florida (August 2005 to 2011, March 2006 to 2010, August 2012), India (April 2010, February 2011), Utah (April 2011), Portugal (May 2010, December 2010), attendance: 25 per course.
- 5 day short course “Introduction Course to Methods for Spatio-temporal Analysis of Exposure and Health Data”, Geneva, February 13-17 2006, attendance: 10.
- 5 day short course “Introduction Course to Methods for Spatio-temporal Analysis of Exposure and Health Data”, Paris, March 27-31 2006, attendance: 15.
- 4 day short course “Geostatistical Analysis of Environmental Data”, in-house at US EPA Region 5, Chicago, February 2007, attendance: 13.
- 5 day short course “Introduction Course to Methods for Spatio-temporal Analysis of Exposure and Health Data”, Niamey (Niger), December 6-10 2010, attendance: 20.
- 5 day short course “Geostatistical Analysis of Environmental Data”, February 2011, Hyderabad (India), attendance: 15.
- 5 day short course “Geostatistical Analysis of Environmental Data”, April 2011, Utah State University, Logan, attendance: 21.
- 5 day short course “Geostatistical Analysis of Environmental Data”, August 2011, University of Florida, Gainesville, attendance: 13.
- 2 day short course “Application of Geostatistics to Environmental Epidemiology”, Beijing (China), October 31-November 1 2011, attendance: 140.
- 2 day short course “Traitement de Données Spatialisées”, INERIS, Verneuil-en-Halatte, October 17-18 1 2011, attendance: 15.
- 2 day short course “Application of Geostatistics to Environmental Epidemiology”, Beijing (China), November 7-8 2011, attendance: 50.
- 5 day short course “Geostatistical Analysis of Environmental Data”, February 2012, University of Evora, Portugal, attendance: 7.
- 5 day short course “Geostatistical Analysis of Environmental Data”, May 2012, in-house at French Institute for Radiological Protection and Nuclear Safety (IRSN), Centre de Cadarache, attendance: 15.

- 5 day short course “Geostatistical Analysis of Environmental Data”, December 2012, in-house at French Institute for Radiological Protection and Nuclear Safety (IRSN), Laboratoire d'Analyse Economique des Risques Nucléaires, Fontenay-aux-Roses, attendance: 10.
- 2 day short course “Geostatistics in Practice”, May 2013, International School for Geoscience Resources (KIGAM, Korea), attendance: 27.
- 1 day short course “Geostatistics in Practice”, May 2013, Tokyo University of Agriculture & Technology, attendance: 21.
- 2 day short course “Introduction to Environmental Health Geostatistics”, November 2013, WALIS Forum (Perth, Australia), attendance: 20.
- 3 day short course “Environmental Geostatistics”, July 2014, International School for Geoscience Resources (KIGAM, Korea), attendance: 28.
- 3 day short course “Introduction to Environmental Health Geostatistics”, September 2014, Universidad Nacional de Colombia (Bogota, Colombia), attendance: 22.
- 3 day short course “Introduction to Environmental Geostatistics”, October 2014, University of Caldas (Manizales, Colombia), attendance: 18.
- 5 day Module MA19 titled “Geostatistics” offered in the Master program of Engineering School, March 2015, The University of Palermo (Italy), attendance: 20.
- 3 day short course “Environmental Geostatistics”, September 2015, International School for Geoscience Resources (KIGAM, Korea), attendance: 40.

Consulting activities (PGeostat, LLC)

For the last 15 years, I have acted as a consultant for various companies and agencies. My duties ranged from reviewing report on (geo)statistical analysis of environmental data to the development of new methodologies and customized programs for performing such analysis. Here is the list of current and past projects in which I have been involved, sorted by client names:

1. Altarum (formerly ERIM, Environmental Research Institute of Michigan)
Development of methodology and corresponding computer program to conduct Monte-Carlo analysis allowing the estimation of errors in total carbon emissions from Alaskan wildfires (2005).
2. CDM
My collaboration with CDM relates to the geostatistical treatment of data collected within EPA Pilot Study Analysis of the Kalamazoo River Superfund Site (2002).
3. CRESP (Consortium for Risk Evaluation with Stakeholder Participation)
Review of the Technical report CCL/CRESP TR01-1 entitled "*Defining Background Groundwater Quality at the Savannah River Site*" (2001).
4. Computer Sciences Corporation
Geostatistical characterization of contaminated sediments, estimation of volumes of sediments to be dredged, design of sampling schemes and remediation strategies. Review

of Quality Assurance Project Plans (QAPP) for numerous sampling, characterization and remediation designs involving sites throughout the Great Lakes region.

5. Eastern Research Group, Inc
External Peer review of the EPA's draft Report entitled "*Levels of Polychlorinated Dibenzodioxins, Polychlorinated Dibenzofurans, PCBs and Mercury in Rural Soils of the U.S.*" (2006).
6. Fields Groups, USEPA Region 5
Review of the Report entitled "*A Geostatistical Assessment of Metals in Passaic River Sediment*", and additional analysis (2002).
7. French Institute for Radiological Protection and Nuclear Safety (IRSN)
Accidents at nuclear power plants can lead to the contamination of vast territories and the substantial loss of agricultural productions, depending on various factors, such as land-cover around the plant or meteorological conditions at the time of the accident. IRSN asked PGeostat to conduct a preliminary probabilistic assessment of the agricultural consequences of an accident occurring at a French nuclear power plant.
8. French National Institute for Industrial Environment and Risks (INERIS)
Support technique et encadrement scientifique pour la thématique d'analyse des relations spatiales entre données socioéconomiques, environnementales et sanitaires menée par l'INERIS dans le cadre du programme DRC33.
9. New York City Department of Health and Mental Hygiene
Preparation of a series of data sets for testing syndromic surveillance methods. Data sets had to be based on observed NYC emergency department data from 2004–2012 and include a combination of outbreak types, duration, season and magnitude. Simulated outbreaks covering the following five different syndromes needed to be inserted into NYC emergency department data (January 1, 2010–December 31, 2011): Diarrhea, vomit, fever, respiratory, and influenza-like illness (ILI). Development of an interface that enables NYC DOHMSH to generate new simulated outbreaks as needed.
10. Scoreboard
Development of new geostatistical tools for the analysis and extrapolation of cellular signal data (1999-2000).
11. Stratus Consulting
Assist Stratus Consulting in developing estimates of the spatial extent and degree of oiling along Louisiana shorelines resulting from the Deepwater Horizon oil spill.
12. Tacoma-Pierce County Health Department
As part of the Tacoma Smelter Plume project, there have been a number of studies looking at soil contamination from the Asarco smelter. A significant amount of soil sampling data has been collected over a very large area. The different studies had different objectives, and so sampling methodology differed between studies, and thus the results are not perfectly comparable. The objective of this contract is for the

Geostatistician consultant to: 1) develop a revised mapping methodology-protocol to incorporate both wind rose information and field data in the geostatistical mapping of arsenic concentration estimates and the probability of exceeding specific arsenic levels, 2) estimate the proportion of residential parcels exceeding specific arsenic thresholds at the block group level, and 3) develop power curves for various composite sampling strategies. The results of this project will be used to design a residential sampling and remediation program.

13. Terumo Cardiovascular Systems

Design of experiments to assess the risks of failure of medical units and confidence levels under various scenarios (2002).

14. Thomas Richards

Geostatistical evaluation of soil arsenic background level for a former commercial property, followed by a 3D modeling of the spatial distribution of soil lead and arsenic concentrations and delineation of areas that exceed the clean up level.

15. Tufts University

SERDP project entitled "*Development of Assessment Tools for Evaluation of the Benefits of DNAPL Source Zone Treatment*"(2004-2006).

The primary objective of the research is to develop and evaluate a suite of geostatistical and modeling tools that can be utilized by site managers to: (1) predict and monitor plume development following DNAPL source zone treatment and (2) assess the cost/benefit trade-off in the selection of source zone remediation technology.

16. University of Louvain-la-Neuve, Belgium

The overall objective of the project is to map the spatial distribution of 43 different soil pollutants (organic and inorganic) over the entire Walloon region (16,844 km²) using data collected during several sampling campaigns, models of atmospheric depositions in urban areas, information on soil type and landuse. My main duties involve the development and application of advanced geostatistical techniques to detect spatial outliers and combine all these sources of information in the high-resolution mapping (500 m spacing) of soil pollution.

17. University of Nebraska, Lincoln

USDA project entitled "*Thematic Soil Mapping and Crop-Based Strategies for Site-Specific Management*" (2003-3004).

The overall objective of the project is to increase the efficiency of site-specific management of primary plant nutrients and other soil properties and thereby increase the profitability of farming and decrease negative environmental impact. My main duties involve the development of advanced geostatistical techniques for soil mapping at high spatial resolution, accounting for multiple sources of secondary information such as digital elevation model or thematic maps.

18. University of Tennessee, Institute for Environmental Modeling

NRC project entitled "*Bayesian Subsurface Radiological Surveying and Analysis*".

This project aims to add new capabilities to SADA (Spatial Analysis and Decision

Assistance) software, mainly (1) the incorporation of prior (soft) knowledge on the spatial distribution of contaminants in the characterization of contaminated sites, (2) the automatic modeling of patterns of spatial variability, and (3) the optimization of 3D sampling designs.

19. University of Michigan, Ann Arbor

UM project entitled "Dioxin Exposure Study" (<http://www.sph.umich.edu/dioxin/>).

Elevated levels of dioxins have been found in the soil of the Tittabawassee River flood plain and nearby areas. Beginning in the fall of 2004, the University of Michigan is conducting a two-year study to find out whether the elevated levels of dioxins in the soil in the city of Midland, and in the Tittabawassee River flood plain between Midland and Saginaw, have also caused elevated levels of dioxins in residents' bodies. My main duties involve the geostatistical incorporation of field and atmospheric deposition data from the incinerator for modeling the spatial distribution of soil dioxin in Midland.

20. University of Michigan, Ann Arbor

UM project entitled "Multi-Ethnic Study of Atherosclerosis".

This study aims to investigate relationships between exposure to ambient air pollution and cardiovascular morbidity and mortality. My main duties involve the development of a space-time geostatistical approach for estimating air pollutant concentrations at addresses of patients participating to the study (2005).

21. XS, Inc., North Carolina

Written and oral review of XS' AgVeritas product methodology to analyze spatially-reference data in the area of precision agriculture.

Grants and contracts with BioMedware

1. NIH SBIR Phase I; Geostatistical software for health and exposure analysis; 1/1/04-6/30/04; \$99,889; PI.
2. NIH SBIR Phase I; Geostatistical software for detection of cancers; 9/1/04-2/30/05; \$99,911; PI.
3. NIH SBIR Phase II; Simulation algorithms for spatial pattern recognition; 1/1/05-12/31/06; \$998,063; PI.
4. NIH SBIR Phase II; Geostatistical software for health and exposure analysis; 9/1/05-8/31/07; \$749,449; PI.
5. NIH SBIR Phase II; Geostatistical software for the space-time analysis of health disparities; 9/1/06-8/31/08; \$717,614; PI.
6. NIH SBIR Phase I; Geostatistical software for the analysis of individual-level epidemiologic data; 9/1/07-2/30/08; \$95,538; PI.
7. NIH contract; Automated pattern recognition in satellite imagery; 9/1/07-2/30/08; \$149,999; co-PI.
8. NIH SBIR Phase I; Geostatistical software for the boundary analysis of cancer maps;

- 7/1/08-6/30/08; \$99,979; PI.
9. NIH contract; Automated pattern recognition in satellite imagery; 9/1/09-8/31/11; \$750,000; PI.
 10. NIH SBIR Phase II; Geostatistical software for the analysis of individual-level epidemiologic data; 7/1/09-6/30/11; \$816,386; PI.
 11. NIH SBIR Phase I; Three-dimensional visualization, interactive analysis and contextual mapping of space-time cancer data; 11/1/10-10/31/11; \$143,421; PI.
 12. NIH R21; A geostatistical framework for the multi-scale boundary analysis of space-time trends in health outcomes; 12/1/12-11/30/14; \$275,000; PI.
 13. Pipeline Research Council International; Non-destructive pipeline stress detection using geostatistical pattern recognition analysis of magnetic flux leakage data; 1/1/13-12/31/14; \$250,000; PI.
 14. NIH SBIR Phase I; Geostatistical software for space-time interpolation and uncertainty modeling; 9/1/13-8/31/14; \$183,478; PI.
 15. NIH SBIR Contract Phase I; METRIC Software to Measure Cancer Health Environment; 9/12/14-5/11/15; \$199,947; PI.
 16. NIH SBIR Phase I; Geostatistical software for spatial and multi-dimensional joinpoint regression analysis of time series of health outcomes; 1/1/16-12/31/16; \$204,574; PI.

Grants and contracts at U of M

1. NSF; Propagation of Uncertainty in the Field Extrapolation of Laboratory Measurements: Application to Dioxin Contaminated Sediments; 9/1/99-8/31/02; \$250,000; PI (Dr. P. Adriaens, co-PI); 1 GSRA supported.
2. EPA/DOD; Bayesian Approach to UXO Site Characterization with Incorporation of Geophysical Information; 1/1/01-12/31/02; \$142,000; subcontractor for Sandia National Laboratories, 1 GSRA supported.
3. OVPR; Educational Program for Spatial Analysis/GIS; 9/1/00-8/31/01; \$221,000; \$0, collaborator (PIs: D. Brown, J.D. Nuystuen, E.D. Rothman).
4. OVPR; Initiating Research in Spatial Analysis of Society-Environment Interactions in Southeastern Michigan; 9/1/00-8/31/01; \$277,000; \$0, collaborator (PIs: D. Brown, R.W. Marans, G.R. Smith, M.L. Wilson).
5. NASA; Developing Land Cover Scenarios in Metropolitan and Non-metropolitan Michigan, USA: a Stochastic Simulation Approach; 9/1/01-8/31/04; \$360,000; \$160,000; co-PI (Dr. D. Brown, PI), 1 GSRA supported.
6. SERDP; Development of Assessment Tools for Evaluation of the Benefits of DNAPL Source Zone Treatment; 5/1/02-5/1/05; \$895,913; co-PI (Dr. L. Abriola, PI), 2 GSRA supported.

Publications

A recent scientometric analysis of geostatistics over the period 1967-2005 (Zhou *et al.*, 2007 Scientometric analysis of geostatistics using multivariate methods. *Scientometrics*, DOI 10.1007/s11192-007-1798-5) identified Dr. Goovaerts as one of the most prolific and highly cited authors (largest annual citation per publication, ACP) in the field. Google scholar h-index for 2015 is 43 (13,000 citations), while the i-10 index (number of publications with at least 10 citations) is 114.

Books

1. Jacquez, G.M., Goovaerts, P., Kaufmann, A. and R. Rommel. 2014. *SpaceStat 4.0 User Manual: Software for the Space-Time Analysis of Dynamic Complex Systems*, 04/2014; Edition: Fourth Edition, Publisher: BioMedware.
2. Goovaerts, P. 1997. *Geostatistics for Natural Resources Evaluation*. Oxford Univ. Press, New-York, 483 p. 4th printing in June 2005. Reference textbook used in many universities, including the Ph.D. program in Geostatistics at Stanford University. 4th most cited book in the geostatistical literature.

Refereed Journals

1. Goovaerts, P., Wobus, C., Jones, R., and M. Rissing. 2016. Geospatial estimation of the impact of Deepwater Horizon Oil Spill on plant oiling along the Louisiana shorelines. *Journal of Environmental Management*, in review.
2. Goovaerts, P., Albuquerque, M.T.D., and I.M.H.R. Antunes. 2016. A multivariate geostatistical methodology to delineate areas of potential interest for future sedimentary gold exploration. *Mathematical Geosciences*, in press.
3. Kerry, R., Vowles, M., Goovaerts, P., and B. Ingram. 2016. Spatial analysis of drug poisoning deaths in the American West, particularly Utah. *International Journal of Drug Policy*, in press.
4. Siska, P., Goovaerts, P., and I.-K. Hung. 2016. Evaluating susceptibility of karst dolines (sinkholes) for collapse in Sango, Tennessee, USA. *Progress in Physical Geography*, in press.
5. Goovaerts, P., Xiao, H., Adunlin, G., Ali, A., Tan, F., Gwede, C.K., and Y. Huang. 2015. Geographically-weighted regression analysis of percentage of late-stage prostate cancer diagnosis in Florida. *Applied Geography*, **62**: 191-200.
6. Goovaerts, P., Xiao, H., Gwede, C.K., Tan, F., Huang, Y., Adunlin, G., and A. Ali. 2015. Impact of age, race and socio-economic status on temporal trends in late-stage prostate cancer diagnosis in Florida. *Spatial Statistics*, in press, doi:10.1016/j.spasta.2015.07.002.
7. Aidoo, E.N., Mueller, U., Goovaerts, P., and G. Hyndes. 2015. Evaluation of geostatistical estimators and their applicability to characterize the spatial patterns of recreational fishing catch rates. *Fisheries Research*, **168**: 20-32.

8. Jacquez, G.M., Emam, K.E., Essex, A., Shi1, C., Kaufmann, A., Beale, L., Curtis, A., Cusick, T., Goldberg, D., Goovaerts, P., and B. Kohler. 2015. Geospatial cryptography: A new research direction in Geographic Information Science. *International Journal of Geographic Information Science*, in review.
9. Kerry, R., Goovaerts, P., Gimenez, D., Oudemans, P. and E. Muñiz. 2015. Investigating geostatistical methods to model within-field yield variability of cranberries for potential management zones. *Precision Agriculture*, 1-27, DOI 10.1007/s11119-015-9408-7.
10. Xiao, F., Tan, F., Adunlin, G., Ali, A., Goovaerts, P., Gwede, C.K. and Y. Huang. 2015. Factors associated with overall survival prostate cancer in Florida: A multilevel analysis. *Journal of Health Care for the Poor and Underserved*, **26**, 266-277.
11. Goovaerts, P. 2014. Geostatistics - A common link between medical geography, mathematical geology and medical geology. *Danie Krige Commemorative Volume of the Journal of the Southern African Institute of Mining and Metallurgy*, **114**, 605-613.
12. Goovaerts, P. and G. Glass. 2014. Geostatistical modeling of the spatial distribution of surface soil arsenic around a smelter. *Journal of the Japanese Society of Soil Physics*, **128**, 5-10.
13. Xiao, F., Tan, F., Goovaerts, P., Adunlin, G., Ali, A., Huang, Y. and C.K. Gwede. 2014. Factors associated with time-to-treatment of prostate cancer in Florida. *Journal of Health Care for the Poor and Underserved*, **24**, 132-146.
14. Xiao, F., Tan, F., Goovaerts, P., Adunlin, G., Ali, A., Gwede, C.K. and Y. Huang. 2014. Impact of comorbidities on prostate cancer stage at diagnosis in Florida. *American Journal of Men's Health*, doi: 10.1177/1557988314564593.
15. Zapata-Rios, X., Rivero, R.G., Naja, G.M. and P. Goovaerts. 2013. Reply to Comments by John M. Huston et al. on "Spatial and temporal phosphorus distribution changes in a large wetland ecosystem", *Water Resources Research*, **50**(6), 5367-5371.
16. Goovaerts, P. 2013. Analysis of geographical disparities in temporal trends of health outcomes using space-time joinpoint regression. *Journal of Applied Earth Observation and Geoinformation*, **22**, 75-85.
17. Kerry, R., Goovaerts, P., Smit, I. and B.R. Ingram. 2013. A comparison of multiple indicator kriging and area-to-point Poisson kriging for mapping patterns of herbivore species abundance in Kruger National Park, South Africa. *International Journal of Geographical Information Science*, **27**, 47-67, DOI:10.1080/13658816.2012.663917.
18. Xiao, F., Tan, F., Goovaerts, P., Ali, A., Adunlin, G., Gwede, C.K. and Y. Huang. 2013. Multilevel factors associated with overall mortality for men diagnosed with prostate cancer in Florida. *American Journal of Men's Health*, doi: 10.1177/1557988313512862.
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11. Goovaerts, P. 2011. Merging areal and point data in medical geography and soil mapping. *Proceedings of Geocomputation 2011*, London, United Kingdom, July 2011.
12. Goovaerts, P. 2011. Fate and Transport: Geostatistics and Environmental Contaminants. In: Nriagu JO (ed.) *Encyclopedia of Environmental Health*, volume 2, pp. 701–714 Burlington: Elsevier.
13. Kerry, R., Goovaerts, P., Smit, I. and B.R. Ingram BR. 2011. Incorporating Environmental data into Poisson Kriging Approaches for Mapping Patterns of Herbivore Species Abundance in Kruger National Park, South Africa. *Proceedings of Geocomputation 2011*, London, United Kingdom, July 2011.
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15. Goovaerts, P. 2010. Three-dimensional visualization, interactive analysis and contextual mapping of space-time cancer data. *Proceedings of 13th Agile International conference*, Guimarães, Portugal, May 2010.
16. Goovaerts, P. 2010. Geostatistical software. In M.M. Fischer and A. Getis, editors, *Handbook of Applied Spatial Analysis: Software Tools, Methods and Applications*. Springer-Verlag, Berlin, Germany, pages 125-134.
17. Goovaerts, P. 2010. Applications of geostatistics in cancer studies. In P.M. Atkinson and C.D. Lloyd, editors, *geoENV VII - Geostatistics for Environmental Applications*. Springer-Verlag, Berlin, Germany, pages 107-120.
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19. Kerry, R., Goovaerts, P., Smit, I. and B.R. Ingram BR. 2010. Comparing the Accuracy of Indicator and Poisson Kriging for Investigating Patterns of Herbivore Species Abundance in Kruger National Park, South Africa. *Proceedings of 9th Ninth International Symposium on Spatial Accuracy Assessment in Natural resources and Environmental Sciences*, Leicester, United Kingdom, July 2010.
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21. Goovaerts, P., Maxwell, S.K., and J.R. Meliker. 2009. Automatic classification of Landsat timeseries using geostatistics and discriminant analysis. *Proceedings of StatGIS 2009*, Milos, Greece.
22. Goovaerts, P., Schofield, J., and J. Telech. 2009. Geostatistical estimation of contaminated sediment volumes: Review of common challenges and solution. *Proceedings of StatGIS 2009*, Milos, Greece.
23. Goovaerts, P. 2008. How can geostatistics be tailored to the analysis of environmental health data? In: Ortiz J. and Emery X. (eds) *Geostatistics 2008*. Kluwer Academic Publishers, Dordrecht, The

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24. Kerry, R., Ingram, B.R., Goovaerts, P. 2008. How many samples are needed to estimate a reliable RMEL variogram? In: Ortiz J. and Emery X. (eds) *Geostatistics 2008*. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1155-1160.
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26. Goovaerts, P. 2007. Spatial uncertainty in medical geography: A geostatistical perspective. In S. Shekhar and H. Xiong (eds) *Encyclopedia of GIS*. Springer-Verlag, Berlin, Germany, 1106-1112.
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28. Goovaerts, P. 2005. Geostatistical Analysis of Spatial Data, in 6.64 Geoinformatics, edited by Peter Atkinson, in *Encyclopedia of Life Support Systems (EOLSS)*, Developed under the auspices of the UNESCO, Eolss Publishers, Oxford, UK, [<http://www.eolss.net>].
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41. Mohammadi, J., Van Meirvenne, M. and P. Goovaerts. 1997. Mapping cadmium concentration and the risk of exceeding a local sanitation threshold using indicator geostatistics. In A. Soares, J. Gomez-Hernandez, and R. Froidevaux, editors, *geoENV I - Geostatistics for Environmental Applications*, pages 327-337. Kluwer Academic Publishers, Dordrecht.
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Other Publications

1. Goovaerts, P. 2007. Book review "Public Health Reasoning and Epidemic Modelling: The Case of Black Death", *Computers and Geosciences*, **33**(3): 445-446.
2. Goovaerts, P. 2006. A novel geostatistical approach for modeling, visualizing and propagating spatial uncertainty in cancer mortality maps. ISEE/ISEA 2006 Conference Abstracts Supplement, *Epidemiology*, **17**(6): Suppl:S113-S114.
3. Goovaerts, P., Auchincloss, A., and A.V. Diez-Roux. 2006. Performance comparison of spatial and space-time interpolation techniques for prediction of air pollutant concentrations in the Los Angeles area. *Proceedings of IAMG'2006*, Liege, September 4-8.

4. Goovaerts, P. 2005. Book review "Geostatistical Analysis of Compositional Data", *SIAM Review*, **47**(3): 605-606.
5. Goovaerts, P. 2005. Automatic interpolation of network data using indicator kriging. In G. Dubois, editor, EUR 21595. Automatic mapping algorithms for routine and emergency monitoring data. Office for Official Publications of the European Communities, Luxembourg, pages 89-101.
6. Goovaerts, P. 2005. Analysis and detection of health disparities using Geostatistics and a space-time information system. The case of prostate cancer mortality in the United States, 1970-1994. Proceedings of GIS Planet 2005, Estoril, May 30-June 2.
7. Goovaerts, P. 2005. Visualization and propagation of spatial uncertainty in cancer mortality rates using Poisson kriging and p-field simulation. Proceedings of Geocomputation 05, Ann Arbor, MI, July 2005.
8. Goovaerts, P. 2004. Book review "Spatial and temporal statistics: sampling field soils and their vegetation", *Geoderma*, **123**: 189-190.
9. P. Goovaerts, G. AvRuskin, J. Meliker, M. Slotnick, G.M. Jacquez, J. Nriagu. 2004. Modeling uncertainty about pollutant concentration and human exposure using geostatistics and a space-time information system: Application to arsenic in groundwater of Southeast Michigan. In *Accuracy 2004: Proceedings of the 6th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences*.
10. Jacquez, G. M., G. AvRuskin, E. Do, H. Durbeck, D. A. Greiling, P. Goovaerts, A. Kaufmann, and B. Rommel. 2004. Complex Systems Analysis using Space-Time Information Systems and Model Transition Sensitivity Analysis. In *Accuracy 2004: Proceedings of the 6th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences*.
11. Goovaerts, P., Warner, A., Crabtree, B., Marcus, A. and G. Jacquez. 2003. Detection of local anomalies in high resolution hyperspectral imagery using geostatistical filtering and local spatial statistics. Proceedings of IEEE workshop on *Advances in Techniques for Analysis of Remotely Sensed Data*, NASA Goddard Visitor Center, Greenbelt MD, October 27-28, 2003.
12. Hirotaka, S., P. Goovaerts, S.A. McKenna. 2002. Impact of accuracy of prior information and geophysical sensors on geostatistical characterization of UXO sites. *The UXO/Countermine Forum*; Orlando, FL, September 3-6, 2002.
13. S.A. McKenna, S. Hirotaka, P. Goovaerts. 2002. Estimating the spatial distribution of UXO from limited data using geostatistics. *The Countermine Forum*; Orlando, FL, September 3-6, 2002.
14. Lemke, L.D., L.M. Abriola, and P. Goovaerts. 2002, Exploration of the influence of hydraulic property correlation on predictions of DNAPL infiltration and entrapment, Groundwater 2002 IAHR Groundwater Symposium Proceedings; Berkeley, CA, Mar 25-29, 2002.
15. Sasena, M.J., Papalambros, P.Y. and P. Goovaerts. 2002. Global Optimization of Problems with Disconnected Feasible Regions via Surrogate Modeling. To appear in the 9th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, September 4-6, 2002. Paper No. AIAA-2002-5573.

16. Barabás, N., P. Adriaens, P. Goovaerts. 2001. Geostatistical assessment of natural transformation of dioxins in estuarine sediments. In SETAC 22nd Annual Meeting. Changing Environmental Awareness: Societal Concerns and Scientific Responses. Society of Environmental Toxicology and Chemistry, Baltimore, Maryland.
17. Sasena, M.J., Papalambros, P.Y. and P. Goovaerts, 2001. The Use of Surrogate Modeling Algorithms to Exploit Disparities in Function Computation Time within Simulation-Based Optimization. Presented at the Fourth Congress of Structural and Multidisciplinary Optimization in Dalian, China, June 4-8, 2001.
18. Lemke, L.D., E.J. Hahn, C.D. Drummond, K.M. Rathfelder, L.M. Abriola, and P. Goovaerts, 2000. Comparison of sequential Gaussian and sequential indicator geostatistical simulations using three-dimensional flow and transport models in a homogenous, non-uniform aquifer [abstr]: Gordon Research Conference (Modeling Flow and Transport in Porous Media) Aug, 6-10, 2000.
19. Sasena, M.J., Papalambros, P.Y., and P. Goovaerts. 2000. Metamodeling sampling criteria in a global optimization framework, Proceedings of the 8th AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach, CA, Sept. 2000, AIAA-2000-4921.
20. Barabás, N., Goovaerts, P. and P. Adriaens. 2000. Geostatistical Interpretation of Dioxin Reactivity in Sediments. DIOXIN 2000 20th International Symposium on Halogenated Environmental Organic Pollutants & POPS. Proceedings. Vol. 45, pages 332-335.
21. Adriaens, P., A.L. Barkovskii, Q. S. Fu, N. Barabás and P. Goovaerts, 2000. Extrapolation of Laboratory-Derived Dioxin Dechlorination Patterns to the Field: Assessing Natural Attenuation in Passaic River Sediments. 16th Ann. Int. Conf. Contam. Soils, Sediments and Water, Amherst, MA.
22. Goovaerts, P. 2000. Geostatistical Mapping of Satellite Data using P-field simulation with conditional probability fields. Proceedings of the Fourth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences (Amsterdam), pp. 253-260.
23. Goovaerts, P. 1999. Combining minimum error variance and spatial variability in the modeling of petrophysical properties. Stanford Center for Reservoir Forecasting, Stanford University, Unpublished annual report No 12.
24. Goovaerts, P. 1999. Combining minimum error variance and spatial variability in the mapping of environmental variables. In H.T. Mowrer, R.L. Czaplewski and R.H. Hamre, editors, *Spatial Accuracy Assessment in Natural Resources and Environmental Sciences: Third International Symposium*, Ann Arbor Press, Michigan, pages 299-306.
25. Goovaerts, P. 1998. Regional estimation of soil properties from local observations. In Proceedings of the Soil Quality Workshop, Alberta Agriculture Food, and rural development, Edmonton January 30-31, 1998, pages 51-58.
26. Goovaerts, P. 1998. Impact of the simulation algorithm, magnitude of ergodic fluctuations and number of realizations on the spaces of uncertainty of flow predictions. Stanford Center for Reservoir Forecasting, Stanford University, Unpublished annual report No 11.
27. Goovaerts, P. 1997. Algorithmically-defined spaces of uncertainty for flow properties. In V. Pawlowsky-Glahn, editor, *Proceedings of IAMG'97*, pages 848-853. CIMNE, Barcelona.
28. Goovaerts, P. 1997. Book review "Le sol: Interface dans l'Environnement, Ressource pour le

Developpement”, *Geoderma*, **75**: 149-150.

29. Goovaerts, P. and A.G. Journel. 1995. Integration of soil map (facies) information in modelling the spatial variation of continuous soil (petrophysical) properties. Stanford Center for Reservoir Forecasting, Stanford University, Unpublished annual report No 8.
30. Hennebert, P. and P. Goovaerts. 1995. Spatial variability of chemical properties and experimental design on an oxisol in Burundi. In *AFRICALAND, Management of Acid Soils, Land Development for Sustainable Agriculture*, 5th Regional Workshop, Network review, Bujumbura, Burundi, 6-11 May 1992, pages 49-68.
31. Goovaerts, P. 1994. On the necessity of checking the Markov approximation and the collocated cokriging alternative. *Geostatistics*, **7**(1): 10-12.
32. Goovaerts, P. 1994. Prediction and stochastic modelling of facies types using classification algorithms and simulated annealing. Stanford Center for Reservoir Forecasting, Stanford University, Unpublished annual report No 7.
33. Goovaerts, P. 1993. Comparative performance of indicator cokriging vs kriging in estimating conditional probabilities of categorical variables, using a large categorical soil data set. Stanford Center for Reservoir Forecasting, Stanford University, Unpublished annual report No 6.

Invited Lectures, presentations or seminars (1996-present)

1. *A Geostatistical Approach for Integrating the Spatial Uncertainty in Environmental Decision-Making*, Departement de Genie Rural, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, April 96.
2. *Geostatistics and GIS for Environmental Applications*, Department of Soil Management, Gent University, May 96.
3. *Accounting for local uncertainty in environmental decision-making processes*, 5th International Geostat Congress, Wollongong (Australia), September 96.
4. *Application of Geostatistics to Environmental Sciences*, Department of Statistics, Catholic University of Louvain-la-Neuve, Belgium, October 96.
5. *Kriging vs stochastic simulation for risk analysis in soil contamination*, 1st European meeting on Geostatistics for Environmental Applications, Lisbon, November 96.
6. *Geostatistical Modeling of Uncertainty and its Incorporation in Environmental Decision-Making Processes*, Department of Civil and Environmental Engineering, The University of Michigan, April 97.
7. *Geostatistics in Soil Science: State-of-the-Art and Perspectives*, opening keynote address at Pedometrics'97, Madison (WI), August 97.
8. *Algorithmically-defined spaces of uncertainty for flow properties*, 3rd Annual Conference of the International Association for Mathematical Geology, Barcelona, September 1997.
9. *Delineation of Hot-Spots of Contamination Using Geostatistics and Point Measurements of Soil Quality*, invited speaker at Milieuplatform 97, University of Leuven (Belgium), October 97.
10. *Geostatistical Assessment of the Risk of Soil Contamination by Heavy Metals and its Incorporation in the Delineation of Hazardous Areas*, AGU Chapman Conference on Applications of GIS, Remote Sensing, Geostatistics, and Solute Transport Modeling to the Assessment of Nonpoint Source Pollutants in the Vadose Zone, Riverside (CA), October 97.
11. *Stochastic Simulation of Lithofacies and Reservoir Properties using Simulated Annealing*, French Institute of Petroleum, Paris, January 98.
12. *Regional Estimation of Soil properties from Local Observations*, invited speaker at Soil Quality Workshop organized by Alberta Agriculture Food, and rural development, Edmonton, January 98.
13. *Quantifying Environmental Risks Through Stochastic Simulation*, Department of Mathematics, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, February 98.
14. *Impact of the Simulation Algorithm, Magnitude of Ergodic Fluctuations and Number of Realizations on the Spaces of Uncertainty of Flow Predictions*, Stanford Center for Reservoir Forecasting, 11th annual meeting, May 98.
15. *Combining Minimum Error Variance and Spatial Variability in the Mapping of Environmental Variables*, 3rd International Symposium on Accuracy Assessment in Natural Resources and Environmental Sciences, Quebec, May 98.
16. *Impact of the Simulation Algorithm, Magnitude of Ergodic Fluctuations and Number of Realizations*

- on the Spaces of Uncertainty of Flow Predictions*, NACOG meeting, Santa Fe, New Mexico, July 98.
17. *Combining Minimum Error Variance and Spatial Variability in the Mapping of Soil properties*, Workshop of the AISS Pedometrics Group on Advanced in Soil Geostatistics, Montpellier, August 98.
 18. *Quantifying Environmental Risks Through Stochastic Simulation*, Department of Statistics, University of Michigan, September 98.
 19. *Geostatistics in Soil Science: State-of-the-Art and Perspectives*, CANR Biometry Group Seminar Series, Michigan State University, East Lansing, September 98.
 20. *Geostatistical Modeling of Spatial Variability*, IESET Seminar Series, University of Michigan, November 98.
 21. *Accounting for Scale-dependent Correlation in the Spatial Prediction of Soil Properties*, 2nd European meeting on Geostatistics for Environmental Applications, Valencia, November 98.
 22. *Performance Comparison of Geostatistical Algorithms for Incorporating Elevation into the Mapping of Precipitation*, Technical University of Lisbon, Lisbon, March 99.
 23. *Geostatistics in Soil Ecology: State-of-the-Art and Perspectives*, Kellogs Ecological Station, Kalamazoo, March 99.
 24. *Combining Minimum Error Variance and Spatial Variability in the Modeling of Petrophysical Properties*, invited speaker at 5th SIAM conference, mini-symposium on "Recent developments in stochastic modeling and simulation", San Antonio, March 99.
 25. *Applications of Geostatistics*, Colloquium Series in Applications of Spatial Statistics, University of Wisconsin, Madison, April 99.
 26. *Combining Minimum Error Variance and Spatial Variability in the Modeling of Petrophysical Properties*, Stanford Center for Reservoir Forecasting, 12th annual meeting, May 99.
 27. *Geostatistics in Environmental Sciences: State-of-the-Art and Perspectives*, International Symposium of Geoinformatics and Socioinformatics, University of Michigan, Ann Arbor, June 99.
 28. *Environmental Geostatistics: State-of-the-Art and Perspectives*, invited speaker at NCR 170 meeting, University of Illinois, Urbana. July 99.
 29. *Performance Comparison of Geostatistical Algorithms for Incorporating Elevation into the Mapping of Precipitation*, Geocomputation 99, Fredericksburg, Virginia, July 99.
 30. *Combining Minimum Error Variance and Spatial Variability in the Modeling of Petrophysical Properties*, keynote address at the 5th Annual Conference of the International Association for Mathematical Geology, Trondheim, Norway, August 99.
 31. *Kriging versus Stochastic Simulation for Quantifying Uncertainty in Environmental Applications*, invited speaker at Joint Statistical Meetings 1999, Baltimore, Maryland, August 99.
 32. *Geostatistical Modeling of Uncertainty in Soil Science*, keynote address at Pedometrics'99, Sydney, Australia, September 99.
 33. *Performance Comparison of Geostatistical Algorithms for Incorporating Elevation into the Mapping of Precipitation*, guest speaker at Geostatistical Association of Australia, Perth, Australia, October 99.

34. *Geostatistical Assessment of the Risk of Exceeding Location-specific Thresholds and its Impact on Sampling Designs: Application to Airborne Cd Contamination*, NACOG meeting, Austin, Texas, October 99.
35. *Geostatistical Mapping of Satellite Data using P-field Simulation with Conditional Probability Fields*, Fourth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Amsterdam, The Netherlands, July 2000.
36. *Geostatistical Mapping of Satellite Data using P-field Simulation with Conditional Probability Fields*, NACOG meeting, Ann Arbor, August 2000.
37. *Is there a future for Geostatistics in Remote Sensing and Exposure Assessment?* Workshop on "Exposure Assessment Using High Spatial Resolution, Hyperspectral Imagery: Challenges and Opportunities", Ann Arbor, August 2000.
38. *Accounting for Measurement Error in Uncertainty Modeling and Decision Making using Indicator Kriging and p-field Simulation: Application to a Dioxin Contaminated Site*, Fourth International Conference on Environmetrics and Chemometrics, Las Vegas, September 2000.
39. *Geostatistical Assessment of Scale-dependent Correlation Between Soil Properties*, Kirkham conference 2000, Iowa State University, November 2000.
40. *Delineation of Hazardous Areas and Additional Sampling Strategy in Presence of a Location-specific Threshold*, 3rd European meeting on Geostatistics for Environmental Applications, Avignon, November 2000.
41. *Geostatistical Incorporation of Spatial Coordinates into Supervised Classification of Hyperspectral Data*, invited speaker at Joint Statistical Meetings 2001, Atlanta, Georgia, August 2001.
42. *Geostatistical Modeling of Spatial Uncertainty using p-field Simulation*, Biomedware, Ann Arbor, August 2001.
43. *Accounting for Measurement and Interpolation Errors in Soil Contaminant Mapping and Decision-Making*, 7th Annual Conference of the International Association for Mathematical Geology, Cancun, Mexico, September 2001.
44. *Assessment of the Production and Economic Risks of Site-specific Liming using Geostatistical Uncertainty Modelling*, Pedometrics'01, Gent, Belgium, September 2001.
45. *Geostatistical Modeling and Propagation of Uncertainty in Soil Science*, invited speaker at 2001 ASA-CSSA-SSSA Annual Meetings, Charlotte, North Carolina, October 2001.
46. *Bayesian Approach to UXO Site Characterization with Incorporation of Geophysical Information*, SERDP In-Progress Review meeting, Washington DC, May 2002.
47. *Geostatistical Integration of Monitoring Data and GIS Layers*, invited speaker at International Symposium on Environmental Biotechnology 2002, Veracruz, Mexico, June 2002.
48. *Geostatistical Modeling and Propagation of Uncertainty: Application to the Management of Agricultural Fields*, 8th Annual Conference of the International Association for Mathematical Geology, Berlin, Germany, September 2002.
49. *Exploration of Scale-dependent Correlation Between Cancer Mortality Rates in Both Space and Time using Geostatistics*, Conference on "Space Time Information Systems", Ann Arbor, January 2003.

50. *A Naive Geostatistical Analysis of Microscopy Imagery*, Conference on "Analysis of Colocalization in Microscopy Imagery", Ann Arbor, March 2003.
51. *Exploring Scale-dependent Correlation Between Cancer Mortality Rates using Geostatistics*, National Cancer Institute, Washington DC, April 2003.
52. *Introduction to Geostatistical Methods*, Mini Symposium on "Spatial Methods for Environmental Sampling, Risk Characterization, and Management", World Congress on Risk, Brussels, Belgium, June 2003.
53. *Building Spatially Distributed Models using Geostatistics: A Review and Potential Applications to the Prediction of Spread of Infectious Diseases*, Conference on "Model Transition Sensitivity Analysis", Ann Arbor, July 2003.
54. *Assessment of the Production and Economic Risks of Site-specific Liming using Geostatistical Uncertainty Modelling*, Geocomputation 2003, Southampton, UK, September 2003.
55. *Selective Remediation of Contaminated Sites using a Two-level Multiphase Strategy and Geostatistics*, Pedometrics'03, Reading, UK, September 2003.
56. *Partnerships for Technological Transfer of Enabling Technology to Public Health: Geostatistical Filtering as an Answer to the Small Numbers Problem*, GeoMed 03, Baltimore, Maryland, October 2003.
57. *Detection of Local Anomalies in High Resolution Hyperspectral Imagery using Geostatistical Filtering and Local Spatial Statistics*, IEEE workshop on Advances in Techniques for Analysis of Remotely Sensed Data, NASA Goddard Visitor Center, Greenbelt, Maryland, October 2003.
58. *Neutral Models for Pattern Recognition on Remotely Sensed Imagery*, Biomedical Information Science and Technology Initiative (BISTI), 2003 Symposium, Digital Biology: The Emerging Paradigm, Bethesda, Maryland, November 2003.
59. *Geostatistical Modeling of Uncertainty Attached to the Spatial Distribution of Arsenic in Groundwater of Southeast Michigan*, AGU Fall Meeting, San Francisco, California, December 2003.
60. *Modeling Uncertainty about Pollutant Concentration and Human Exposure using Geostatistics and a Space-time Information System: Application to Arsenic in Groundwater of Southeast Michigan*, Tufts University, Boston, MA, April 2004.
61. *The Geostatistical Pandora Box*, invited speaker, Spatial Analysis and Decision Assistance 2004 NRC Workshop, Rockville, Maryland, May 2004.
62. *Software for the Analysis of Health and Exposure Data*, Conference on "Software for the Analysis of Health and Exposure Data", Ann Arbor, May 2004.
63. *Long Island Study Revisited*, Conference on "Software for the Analysis of Health and Exposure Data", Ann Arbor, May 2004.
64. *Modeling Uncertainty about Pollutant Concentration and Human Exposure using Geostatistics and a Space-time Information System: Application to Arsenic in Groundwater of Southeast Michigan*, keynote address, Sixth International Symposium on Spatial Accuracy Assessment in Natural resources and Environmental Sciences, Portland, Maine, June 2004.
65. *Simulation-based Assessment of a Geostatistical Approach for Estimation and Mapping of the Risk of*

- Cancer*, Seventh International Geostatistics Congress, Banff, Alberta, Canada, September 2004.
66. *Detection of Local Anomalies in High Resolution Hyperspectral Imagery using Geostatistical Filtering and Local Spatial Statistics*, Seventh International Geostatistics Congress, Banff, Alberta, Canada, September 2004.
 67. *Detection of Spatial Clusters and Outliers using the LISA Statistics and Geostatistically Simulated Spatial Neutral Models*, Fifth European Conference on Geostatistics for Environmental Applications (GeoENV 2004), Neuchatel, Swizerland, October 2004.
 68. *Detection of Local Anomalies in High Resolution Hyperspectral Imagery using Geostatistical Filtering and Local Spatial Statistics*, AGU Fall Meeting, San Francisco, California, December 2004.
 69. *Modeling Uncertainty about Pollutant Concentration and Human Exposure using Geostatistics and a Space-time Information System: Application to Arsenic in Groundwater of Southeast Michigan*, University of Florida, Gainesville, Fl, March 2005.
 70. *Analysis and Detection of Health Disparities using Geostatistics and a Space-time Information System*, GIS Planet 2005, Estoril, Portugal, May 2005.
 71. *Visualization and Propagation of Spatial Uncertainty in Cancer Mortality Rates using Poisson Kriging and p-field Simulation*, GeoComputation 05, Ann Arbor, MI, July 2005.
 72. *Exploring the Spatial Non-stationarity of Relationships among Soil Properties Using Geographically-weighted Regression*, Pedometrics 05, Naples, FL, September 2005.
 73. *Exploring the Non-stationarity of Relationships among Spatial Attributes using Geographically-weighted Regression and Geostatistical Neutral Models*, University of California, Santa Cruz, CA, January 2006.
 74. *Modeling the Impact of the Environment on Human Health: How can Geostatistics and Space-Time Information Systems help you?*, Stanford University, Palo Alto, CA, January 2006.
 75. *Visualization and Analysis of Health data using a Space-time Information System*, World Health Organization, Geneva, Switzerland, February 2006.
 76. *Performance Comparison of Spatial and Space-time Interpolation Techniques for Prediction of Air Pollutant Concentrations in the Los Angeles Area*, Association of American Geographers Annual Meeting, Chicago, IL, March 2006.
 77. *Analysis and Detection of Health Disparities using Geostatistics and a Space-time Information System: The case of prostate cancer mortality in the United States, 1970-1994*, Center for Minority Prostate Cancer Training & Research, Tallahassee, FL, March 2006.
 78. *A Novel Geostatistical Approach for Modeling, Visualizing and Propagating Spatial Uncertainty in Cancer Mortality Maps*, International Conference on Environmental Epidemiology & Exposure, Paris, France, September 2006.
 79. *Performance Comparison of Spatial and Space-time Interpolation Techniques for Prediction of Air Pollutant Concentrations in the Los Angeles Area*, 12th Annual Conference of the International Association for Mathematical Geology, Liege, Belgium, September 2006.

80. *Geostatistical Analysis of Health Data: State-of-the-art and Perspectives*, opening keynote address at Sixth European Conference on Geostatistics for Environmental Applications (GeoENV 2006), Rhodes, Greece, October 2006.
81. *Exploring Health Disparities using Geostatistics and a Space-time Information System: The case of prostate and cervix cancer mortality in the United States, 1970-1994*, invited speaker, Race, Ethnicity and Place Conference III, San Marcos, Texas, November 2006.
82. *Space-Time Visualization and Geostatistical Analysis of Environmental and Health Data*, Fall iGISa (Illinois Geographic Information Systems Association) 2006 meeting, Chicago, Illinois, November 2006.
83. *Space-Time Visualization and Detection of Health Disparities using Geostatistics and a Space-time Information System: The case of prostate and cervix cancer mortality in the United States, 1970-1994*, Association of American Geographer's 2007 annual meeting, San Francisco, California, March 2007.
84. *Space-Time Visualization and Detection of Health Disparities using Geostatistics and a Space-time Information System: The case of prostate and cervix cancer mortality in the United States, 1970-1994*, URISA's GIS in Public Health Conference, New Orleans, Louisiana, May 2007.
85. *Geostatistical Modeling of the Spatial Distribution of Soil Dioxin in the Vicinity of an Incinerator*, invited speaker, 56th session of the International Statistical Institute, Lisbon, Portugal, August 2007.
86. *Geostatistical Modeling of the Spatial Distribution of Soil Dioxin in the Vicinity of an Incinerator*, Pedometrics 07, Tuebingen, Germany, August 2007.
87. *Geostatistical Modeling of the Spatial Distribution of Soil Dioxin in the Vicinity of an Incinerator*, 17th Annual Conference of the International Society of Exposure Analysis, Durham, North Carolina, October 2007.
88. *Space-Time Visualization and Detection of Health Disparities using Geostatistics and a Space-time Information System: The case of prostate and cervix cancer mortality in the United States, 1970-1994*, 2007 AACR conference on The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, Atlanta, Georgia, November 2007.
89. *Geostatistical Analysis of Health Data: State-of-the-art and Perspectives*, Association of American Geographer's 2008 annual meeting, Boston, Massachusetts, March 2008.
90. *Visualization and Analysis of Health data using a Space-time Information System*, Center for Minority Prostate Cancer Training & Research, Tallahassee, FL, March 2008.
91. *Recent Development in Applied Geostatistics: Going Beyond the Generation of Pretty Color Maps*, Rutgers, The State University of New Jersey, New Brunswick, NJ, June 2008.
92. *Problems and Some Solutions in the Analysis of Spatial Data*, National Geospatial Agency, Washington DC, June 2008.
93. *Space-Time Visualization and Detection of Health Disparities using Geostatistics and a Space-time Information System: The case of prostate and cervix cancer mortality in the United States, 1970-1994*, 2008 NIH SBIR/STTR Conference, Atlanta, Georgia, July 2008.

94. *How can Geostatistics Help Quantifying Uncertainty in Water Management Applications?*, St. Johns River Water Management District, Palatka, Florida, August 2008.
95. *Applications of Geostatistics in Cancer Studies*, Seventh European Conference on Geostatistics for Environmental Applications (GeoENV 2008), Southampton, United Kingdom, September 2008.
96. *Recent Applications of Geostatistics to Environmental Epidemiology*, invited speaker, Workshop on Spatial Epidemiology, Instituto Superior Técnico of Lisbon, Portugal, September 2008.
97. *Geostatistical Analysis of Health and Exposure Data: State-of-the-art and Perspectives*, International Conference on Environmental Epidemiology & Exposure, Pasadena, California, October 2008.
98. *New Geospatial Approaches to Cancer Control and Surveillance*, Department of Geography, UC Santa Barbara, California, October 2008.
99. *How Can Geostatistics be Tailored to the Analysis of Environmental Health Data?*, Eighth International Geostatistics Congress, Santiago, Chile, December 2008.
100. *Geostatistical Estimation of Contaminated Sediment Volumes: Review of Common Challenges and Solutions*, Fifth International Conference on Remediation of Contaminated Sediments, Jacksonville, Florida, February 2009.
101. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, Association of American Geographer's 2009 annual meeting, Las Vegas, Nevada, March 2009.
102. *Geostatistical Mapping of Late Stage Breast Cancer Incidence*, URISA's GIS in Public Health Conference, Providence, Rhode Island, June 2009.
103. *Geostatistical Estimation of Contaminated Sediment Volumes: Review of Common Challenges and Solutions*, StatGIS 2009, Milos, Greece, June 2009.
104. *Automatic Classification of Landsat Timeseries using Geostatistics and Discriminant Analysis*, StatGIS 2009, Milos, Greece, June 2009.
105. *Geostatistical Estimation of Contaminated Sediment Volumes: Review of Common Challenges and Solutions*, 15th Annual Conference of the International Association for Mathematical Geosciences, Stanford University, California, August 2009.
106. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, keynote address at 15th Annual Conference of the International Association for Mathematical Geosciences, Stanford University, California, August 2009.
107. *Geostatistical Space-time models of Environmental Contaminants*, SETAC (Society of Environmental Toxicology and Chemistry) North America 30th Annual Meeting, New Orleans, Louisiana, November 2009.
108. *Geostatistical Estimation of Contaminated Sediment Volumes: Review of Common Challenges and Solutions*, Association of American Geographer's 2010 annual meeting, Washington, DC, March 2010.
109. *Three-dimensional Visualization, Interactive Analysis and Contextual Mapping of Space-time Cancer Data*, 13th Agile International conference, Guimarães, Portugal, May 2010.

110. *Spatial Uncertainty and Hypothesis Testing in Medical Geography: A Geostatistical Perspective*, keynote address at *9th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences*, Leicester, UK, July 2010.
111. *Geostatistical Characterisation of Soil and Sediment Contamination: Leaving the Ivory Tower for the Field*, 9th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Leicester, UK, July 2010.
112. *Three-dimensional Visualization, Interactive Analysis and Contextual Mapping of Space-time Data*, 16th Annual Conference of the International Association for Mathematical Geosciences, Budapest, Hungary, August 2010.
113. *Visualizing the Impact of Place and Race on Late-stage Cancer Incidence*, invited speaker, Race, Ethnicity and Place Conference V, Binghamton, New-York, October 2010.
114. *Visualizing the Impact of Time, Place and Race on Late-stage Cancer Incidence*, School of Public Health, University of Illinois, Chicago, November 2010.
115. *Geostatistical Boundary Analysis of Temporal Trends in Late-stage Prostate Cancer Incidence across Florida*, Spatial Statistics 2011, Enschede, The Netherlands, March 2011.
116. *Visualizing the Impact of Time, Place and Race on Late-stage Cancer Incidence*, Association of American Geographer's 2011 annual meeting, Seattle, WA, April 2011.
117. *Merging Areal and Point Data in Medical Geography and Soil Mapping*. Geocomputation 2011, London, United Kingdom, July 2011.
118. *Space-time Trend Analysis of Health Outcomes: Prostate Cancer Late-stage Diagnosis in Florida*. The International Symposium on Spatial-Temporal Analysis and Data Mining, London, United Kingdom, July 2011.
119. *The Role of Geostatistics in Medical Geology*, keynote address at VIII Iberian Geochemistry Conference / XVIII Geochemical Week, Castelo Branco, Portugal, September 2011.
120. *The Role of Geostatistics in Medical Geology*, GEOMED 2011, 4th International conference on Medical geology, Bari, Italy, September 2011.
121. *Regard sur une approche localisée par un spécialiste international du traitement de données spatialisées en santé environnement*, keynote address at Colloque Environment Santé, Amiens, France, September 2011.
122. *Geostatistics Applied to Environmental Epidemiology*, Xi'an University, Xi'an, China, November 2011.
123. *Geostatistical Analysis of Health Data with Different Levels of Aggregation*, First International Conference on Geospatial Geocoding, Redland, California, December 2011.
124. *Geostatistical Change of Support*, ESRI campus, Redland, California, December 2011.
125. *Recent Developments in Geostatistics: Change of Support and Spatial Analysis of Temporal Trends in Health Outcomes*, Seminar at ISEGI, Universidade Nova de Lisboa, Portugal, February 2012.
126. *Geostatistics in Practice*, Seminar at Wayne State University, Detroit, Michigan, April 2012.

127. *Visualization and Comparison of Spaces of Uncertainty using Three-dimensional Display and Multi-dimensional Scaling*, 14th Agile International conference, Avignon, France, April 2012
128. *Visualization and Comparison of Spaces of Uncertainty using Three-dimensional Display and Multi-dimensional Scaling*, 2012 meeting of Stanford Center for Reservoir Forecasting, Asilomar, California, May 2012.
129. *The Role of Geostatistics in Environmental Epidemiology*, keynote address at 9th International Symposium on Environmental Geochemistry, Aveiro, Portugal, July 2012.
130. *Challenges Associated With the Application of Geostatistics to Survey Data*, Meeting of the Spatial Sciences Node of the NSF-Census Research Network (SS-NCRN) “Measuring People in Place”, Boulder, Colorado, October 2012.
131. *Geographical, Temporal and Racial Disparities in Late-stage Prostate Cancer Incidence across Florida: A Multiscale Joinpoint Regression Analysis*, invited speaker, Race, Ethnicity and Place Conference VI, San Juan, Puerto Rico, October 2012.
132. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Brazilian National Institute for Space Research - INPE, Brazil, March 2013.
133. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Brazilian National Institute for Space Research – INPE, Brazil, March 2013.
134. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Institut Agronomique et Vétérinaire Hassan II Rabat, Morocco, March 2013.
135. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Office Chérifien des Phosphates(OCP), Benguéir, Morocco, March 2013.
136. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Middle East Technical University, Turkey, April 2013.
137. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Middle East Technical University, Turkey, April 2013.
138. *The Role of Geostatistics in Medical Geology*, invited speaker, IAMG Distinguished Lecture, Conservatoire national des arts et Métiers, France, April 2013.
139. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, ITC, Netherlands, April 2013.
140. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Department of Earth Sciences, Utrecht University, Netherlands, April 2013.
141. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Royal Institute of Technology, Stockholm, Sweden, April 2013.
142. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, National Chung Hsing University, Taichung, Taiwan, May 2013.

143. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, National Taiwan University, Taipei, Taiwan, May 2013.
144. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, National Cheng Kung University, Tainan, Taiwan, May 2013.
145. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, International School for Geoscience Resources (KIGAM), South Korea, May 2013.
146. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Tokyo University of Agriculture & Technology, Japan, May 2013.
147. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Kyoto University, Japan, May 2013.
148. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Hokkaido University, Japan, May 2013.
149. *Visualization and Comparison of Spaces of Uncertainty using Three-dimensional Display and Multi-dimensional Scaling*, Spatial Statistics 2013, Columbus, Ohio, June 2013.
150. *Space-time Analysis of Late-stage Breast Cancer Incidence in Michigan*, 2013 International Medical Geography Symposium, Lansing, Michigan, July 2013.
151. *Geostatistical Mapping of Dioxin and Arsenic in Soils around Point Sources of Contamination*, invited speaker, IAMG Distinguished Lecture, University of Cape Town, South Africa, August 2013.
152. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Stellenbosch University, South Africa, August 2013.
153. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Kruger National Park, South Africa, August 2013.
154. *Geostatistical Mapping of Dioxin and Arsenic in Soils around Point Sources of Contamination*, Pedometrics 2013, Nairobi, Kenya, August 2013.
155. *Geostatistics: a Common Link Between Medical Geography, Mathematical Geology and Medical Geology*, 19th Annual Conference of the International Association for Mathematical Geosciences, Madrid, Spain, September 2013.
156. *A Spatial Statistical Approach for Sedimentary Gold Exploration – a Portuguese Case Study*, 19th Annual Conference of the International Association for Mathematical Geosciences, Madrid, Spain, September 2013.
157. *The Role of Geostatistics in Medical Geology*, invited speaker, IAMG Distinguished Lecture, Spanish Geological Survey, Madrid, Spain, September 2013.
158. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Instituto Superior Técnico of Lisbon, Portugal, September 2013.

159. *Geostatistics Analysis of Imagery Data: a Brief Overview and Recent Developments*, invited speaker, IMA (Institute for Mathematics and its Applications) Workshop Imaging in Geospatial Applications, Minneapolis, Minnesota, October 2013.
160. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Edith Cowan University, Perth, Australia, October 2013.
161. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, BHP Billiton, Perth, Australia, October 2013.
162. *Geostatistical Characterisation of Soil and Sediment Contamination: Leaving the Ivory Tower for the Field*, keynote address at Walis Forum, Perth, New Australia, November 2013.
163. *The Impact of Place and Time on the Proportion of Late-stage Diagnosis: The Case of Prostate Cancer in Florida and Breast Cancer in Michigan*, keynote address at CRC SI (Cooperative Research Center for Spatial Information) Annual Conference, Christchurch, New Zealand, November 2013.
164. *Geostatistics in Practice*, invited speaker, IAMG Distinguished Lecture, Landcare Research, Palmerston North, New Zealand, November 2013.
165. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Landcare Research, Lincoln, New Zealand, November 2013.
166. *Combining Areal & Point Data in Geostatistical Interpolation: Applications to Soil Science & Medical Geography*, invited speaker, IAMG Distinguished Lecture, Université de Liège, Liège, Belgium, December 2013.
167. *Applying Geostatistics to Crime Data: Development of Predictive & Prevention Models*, invited speaker, Portuguese National Republican Guard (GNR) headquarters, Lisbon, Portugal, January 2014.
168. *Environmental Protection using Geostatistical Time Models*, invited speaker, Portuguese National Republican Guard (GNR) headquarters, Lisbon, Portugal, January 2014.
169. *Geostatistics in Practice*, invited speaker, Hope University, Liverpool, UK, March 2014.
170. *Geostatistics in Practice*, invited speaker, UCLA Department of Statistics, Los Angeles, April 2014.
171. *Geostatistics in Practice*, invited speaker, Wayne State University Department of Geology, Detroit, April 2014.
172. *The Role of Geostatistics in Medical Geology*, solicited speaker, European Geophysical Union Meeting 2014 (EGU 2014), Vienna, Austria, April 2014.
173. *The Impact of Place and Time on the Proportion of Late-stage Diagnosis: The Case of Breast Cancer in Michigan and Prostate Cancer in Florida*, invited speaker, Washington University School of Medicine, Siteman Cancer Center, St Louis, May 2014.
174. *The Importance of Spatial Support in Environmental Modeling and Decision-making*, keynote address at 11th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Lansing, Michigan, July 2014.

175. *Application of Geostatistics to Environmental Epidemiology: The Case of Lung Cancer Mortality in the Southeastern US*, invited presentation at International Conference on Multidisciplinary Cancer Care, Bogota, Colombia, September 2014.
176. *The Importance of Spatial Support in Environmental Modeling and Decision-making: A Geostatistical Approach*, invited seminar, Aix Marseille University, Marseille, France, October 2014.
177. *Application of Boundary Analysis to Medical Geology*, 20th Annual Conference of the International Association for Mathematical Geosciences, New Delhi, India, October 2014.
178. *The Role of Geostatistics in Environmental Epidemiology*, invited seminar, Institute of Environmental Health Sciences, Wayne State University, Detroit, Michigan, December 2014.
179. *Non-destructive Pipeline Stress Detection using Geostatistical Pattern Recognition Analysis of Magnetic Flux Leakage ILI Data*, PRCI 2015 Research Exchange Meeting, Houston, Texas, February 2015.
180. *Geostatistics in Practice*, invited seminar, Engineering School, The University of Palermo, Palermo, Italy, March 2015.
181. *The Role of Geostatistics in Medical Geology*, Association of American Geographer's 2015 annual meeting, Chicago, IL, April 2015.
182. *Non-destructive Pipeline Stress Detection using Geostatistical Pattern Recognition Analysis of Magnetic Flux Leakage ILI Data: Updates*, Fall 2015 Meeting of the PRCI Pipeline Technical Committees, San Ramon, California, October 2015.
183. *Geostatistical Characterization of Soil & Sediment Contamination: Leaving the Ivory Tower for the Field*, invited seminar, Rio Tinto, Perth, Australia, October 2015.
184. *Geostatistics in Practice*, invited seminar, Edith Cowan University, Perth, Australia, October 2015.
185. *Geostatistical Space-time Interpolation of Air Pollution: A Pragmatic Approach and Software Interpolation*, Association of American Geographer's 2016 annual meeting, San Francisco, CA, March 2016.
186. *Environmental Space-time Epidemiology: From Cancer to Lead Poisoning*, invited speaker, Jackson Area Landlord Association, Jackson, MI, April 2016.