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Educational History

- Ph. D., June 6, 1978, University of Toronto, Toronto, Canada, Geography
 - Dissertation Title: "The impact of configuration and spatial autocorrelation on the specification and interpretation of geographical models."
- M. S., August 17, 1985, Pennsylvania State University, University Park, Pennsylvania, Statistics
- M. A., August 20, 1972, Indiana University of Pennsylvania, Indiana, PA, Geography
- B. Sc., May 24, 1970, Indiana University of Pennsylvania, Indiana, PA, Mathematics

Professional Experience

- Summer school visiting lecturer, Department of Mathematics and Statistics, University of Jyväskylä, Jyväskylä, Finland, 2006
- University of Texas at Dallas, Richardson, Texas, professor (Ashbel Smith Professor endowed chair), 2005-present
- University of Miami, Miami, Florida, professor (and Graduate Faculty member), 2003-2005
- The University of Cambridge, Cambridge, United Kingdom, Leverhulme visiting professor, Spring 2004
- Syracuse University, Syracuse, New York, professor, 1988-2003; Chair, Department of Geography, 1995-1997
- Syracuse University, Syracuse, New York, Interdisciplinary Program in Statistics faculty, 1991-2003
- SUNY/Environmental Sciences and Forestry, Syracuse, New York, adjunct professor, 1992-2003
- Ministerio de Educación del Perú, Lima, Perú consultant, 2000
- Syracuse Research Corporation, Syracuse, New York, consultant, 1998-99, 2003
- University of Rome "La Sapienza", Rome, Italy, 1-month visiting professor, February 1995
- Erasmus University, Rotterdam, Netherlands, visiting professor, Fall 1992
- Syracuse University, Syracuse, New York, Director, Interdisciplinary Program in Statistics, 1991-92 & 1993-95
- NY State Program in Geographic Information and Analysis, Deputy Director, 1989-90
- Oregon State University, Corvallis, Oregon, Department of Statistics, visiting EPA Environmental Monitoring and Assessment Program research affiliate, summers of 1990-93
- State University of New York at Buffalo, Buffalo, New York, assistant professor, 1978-83; associate professor, 1983-1986; professor, 1986-88
- Ryerson Polytechnical University, Toronto, Ontario, Canada, instructor, 1975-78
- University of Toronto, Toronto, Ontario, Canada, teaching/research assistant, 1972-75
- Indiana University of Pennsylvania, Indiana, Pennsylvania, teaching/research assistant, 1970-72

Research Interests

Academic Specialty

- spatial statistics; quantitative/urban/economic geography; applied statistics & statistical consulting; research proposal design

Professional Memberships

Accreditations

- American Statistical Assn. Continuing Education (1994: "Spatial statistics for environmental and earth sciences data," "Skills to increase effectiveness in statistical consulting and collaboration"); ASA Syracuse Chapter workshop (1998: An introduction to generalized linear mixed models")
- Certified Geographic Information Systems (GIS) Professional (GISP), 2009, The GIS Certification Institute (GISCI)

Memberships

- The Association of American Geographers
- The Regional Science Association
- The American Statistical Association
- The Mathematical Association of America
- The Fulbright Association
- Sigma Xi
- American Association for the Advancement of Science
- Spatial Econometrics Association

Honors and other Recognitions

Honors & Recognitions

- 2009 appointed to the Advisory Committee member of the International Collaborative Center for Geo-computation Studies (ICCGS), Wuhan University
- 2008-12 appointed to the Steering Committee, Commission on Modeling Geographical Systems, International Geographical Union
- 2007 elected founding fellow of the Spatial Econometrics Association
- 2007 listed in 61st edition of Marquis Who's Who in America (1st listed in 1994)
- 2007 listed in 25th Silver Anniversary edition of Marquis Who's Who in the World (1st listed in 2002)
- 2004 elected a visiting fellow, Fitzwilliam College, U. of Cambridge
- 1996/97 president, North American Regional Science Council
- 1996 inducted into Sigma Xi (Syracuse Chapter)
- 1995 (1st) Department of Geography outstanding alumnus, U. of Toronto
- 1994 elected to the New York Academy of Sciences
- 1994 listed in 4th edition of American Men and Women of Science
- 1993/94 listed an "International Man of the Year" in the International Biographical Centre's 16th edition of Men of Achievement

- 1993,98 listed in 23rd & 27th Dictionary of International Biography
- 1993 listed in 4th edition of Who's Who in American Education.
- 1992 listed in 24th edition of Who's Who in the East.
- 1991 special guest of the Institute of British Geographers, by request of the Quantitative Methods Study Group, for the annual meeting.
- 1982 outstanding alumnus of Indiana U. of Pennsylvania
- 1972 inducted into Kappa Delta Pi Honor Society in Education.
- 1969/70 elected to Who's Who Among Students in American Universities and Colleges.
- 1969 inducted into Gamma Theta Upsilon International Honorary Geography Society.

Professional Recognitions

- 2009-11 Editor, Geographical Analysis
- 2009 Appointed to the AAG Task Force to update the "Ethics Statement of the AAG"; Ethics, place and Environment (2008) distributed to committee by AAG Executive Director, and was added to the revised bibliography for the "Ethics Statement of the AAG"
- 2009 Certified Geographic Information Systems (GIS) Professional (GISP)
- 2008 Invited Scientific Committee member of the StatGIS'09 Conference
- 2008 RSAI Panel session to commemorate the 20th anniversary of the publication of my landmark book Advanced Spatial Statistics
- 2008 Invited Program Committee member of the 3rd ICA Workshop on Geospatial Analysis and Modeling
- 2008 Journal of Regional Science, 48: 969-989 garnered the #1 spot on the SSRN's Analytical Models, and in the "Top Ten" on the SSRN's Cross-Sectional Models, Spatial Models, Treatment Effects Models downloads
- 2007-present editorial board, J. of Stochastic Environmental Research & Risk Assessment
- 2007-10 editorial board (Associate Editor), Letters in Spatial and Resource Sciences
- 2004-13 editorial board, Journal of Geographical Systems
- 2002-08 Associate Editor, Geographical Analysis
- 2000-present Article Review Board member, URISA J.
- 2007 invited participant, "Science without boundaries," Institute Para Limes, The Netherlands
- 2006 invited panelist, Association of American Geographers special session entitled "Status and trends in spatial statistics in geography," in honor of Honorary Geographer J. Keith Ord
- 2006 review panelist, Small Business Innovation Research, National Science Foundation
- 2005 (with M. Fischer) Regional Science Association dissertation competition judging
- 2005 review panelist, special joint Divisions of Mathematical and Behavioral & Cognitive Sciences competition, National Science Foundation
- 2001-03 AAG Article Award Committee member
- 2001 invited workshop evaluator, ESRI's "geostatistical analyst"

- 2001 invited nominator, John D. & Catherine T. MacArthur Foundation Fellows Program
- 2000-02 review panelist, "Methods, Measurement & Statistics," National Science Foundation
- 2000-02 Scientific Advisory Board member, 5th International Symposium on Spatial Accuracy Assessment in a Natural Resources and Environmental Sciences
- 2000 review panelist, "NSF/EPA Environmental Statistics," National Science Foundation
- 2000 prolific regional science literature author [International Regional Science Review, 23: pp. 323-344].
- 1998 review panelist, GEOID Networks of Centers of Excellence proposal, NSERC (Canada)
- 1998 invited workshop participant, "Status and trends in spatial analysis (the Varenus project)" of the National Science Foundation National Center for Geographic Information and Analysis, Santa Barbara, California.
- 1997 invited lecturer, "Spatial Genomics Workshop" convened by the NSF National Center for Geographic Information and Analysis, Castine, Maine.
- 1996-97 Scientific Advisory Board member, 3rd International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences
- 1991 human geography citation centurion [Transactions, Institute of British Geographers, 1116: 26-27]
- 1991 review panelist, "Geosciences, Geography and Mathematical Sciences," National Science Foundation, May.
- 1991 invited lecturer, "Initiative #7 experts meeting" of the National Science Foundation National Center for Geographic Information and Analysis, Castine, Maine.

Societal Research Recognitions

- Flight #93 memorial design assessment quoted in The Tribune-Review, Thursday, July 20, 2006; Flight 93 memorial design critique for the National Parks Service, 2007 (with citations in the Pittsburgh Post-Gazette, and Johnstown Tribune-Democrat)
- Syracuse pediatric lead poisoning project featured in The Post-Standard, Monday, December 2, 2002, front page & p. 4.
- quoted in The Post Standard about counting crowds (Friday, November 23, 2001, pp. C1, C3)
- Syracuse pediatric lead poisoning project included in Congressional briefing on GIS, January, 1997
- Syracuse pediatric lead poisoning project maps included in the 1997-1998 Consolidated Plan for the City of Syracuse submitted to HUD, June
- Syracuse pediatric lead poisoning project poster invited for displayed during the "Reuniting the Family Conference," Nottingham High School, November
- Syracuse, NY, pediatric blood lead study featured in the Syracuse Record, the SU Alumni News, and the Syracuse Herald-J. (August 30, 1996), Syracuse University Magazine (Vol. 13, #1, Fall 1996, pp. 38-39)

Awards and Fellowships

Awards

- 2010 AAG Distinguish Research Honors recipient
- 2009 elected fellow of the Regional Science Association International (featured in Richardson Neighborsgo, 12/4/2009)
- 2006 Doctor of Science, honoris causa, from Indiana U. of Pennsylvania
- 2005 Fulbright Senior Specialist (with invitation to the U. of Alberta, CA)
- 2005 visiting researcher, Max Planck Institute for Demographic Research/Rostock (Germany)
- 2005 (1st) Center for Ecosystems Science and Policy (CESP) fellow, U. of Miami
- 2004 Leverhulme Trust (UK) visiting professorship to the U. of Cambridge
- 2001 John Simon Guggenheim Memorial Foundation fellowship (<http://www.gf.org/01fellow.html>)
- 2000 elected Fellow of the New York Academy of Sciences
- 1999 distinguished geographer of the year, Pennsylvania Geographical Society
- 1998/9 ASA/USDA-NASS Research Fellow
- 1997 "Second Prize, Best Software 1996" for USA, from Microcomputer Specialty Group, Association of American Geographers
- 1994 "First Prize, Best Software 1993" for EXPLORHO, from Microcomputer Specialty Group, Association of American Geographers
- 1992/93 Fulbright Research Fellow to Canada
- 1980 J. Warren Nystrom doctoral dissertation award, Assn. of American Geographers
- 1972-76 U. of Toronto Open Fellowship
- 1971/summer Foreign Area Research Grant through Indiana U. of Pennsylvania
- 1967-70 PHEAA Scholarship
- 1966-70 Hempfield Council PTA Scholarship
- 1989 (July) National Science Foundation project selected for inclusion in an NSF funded 2-weeks National Center for Supercomputing Applications Education Workshop, U. of Illinois/Champaign-Urbana.
- 1988 invited lecturer, "Initiative #1 experts meeting" of the National Science Foundation National Center for Geographic Information and Analysis, UCSB.
- 1985,87 recipient, Experienced Faculty Travel Award, New York State/UUP
- 1985-87 editorial board member, Annals, Association of American Geographers.
- 1982-90 editorial board member, Geographical Analysis (3 terms).
- 1983-86 member, NATO Scientific Affairs Division Advisory Board.

External Evaluations

- promotion to full professor, SUNY/Buffalo (1986), U. of Tennessee (1987), U. of Toronto (1990), Queen's U./Canada (1995), U. of Iowa (1997), McGill U. (2002), U. of Alaska (2006), U. of Utah (2007), U. of North Texas (2007), Wichita State U. (2008),
- tenure and promotion, U. of Florida (1992), U. of Georgia (1992, 1993), Indiana U. (1994), McGill U. (1997), SUNY/Health Science Center at Syracuse (1998), Macalester College (1999), Syracuse U. (2; 2003), UC/Santa Barbara (2004), Michigan State U. (2004), McMaster U. (2006), Purdue U. (2008), U. of Iowa (2009)
- Faculty university honors:
- Excellence in Scholarship: SUNY Chancellor's Citation (2006)

- Study leave: George Mason U. (2007)
- Professor and Center Director: Ohio State U. (2009)
- Distinguished Research Master honor: Louisiana State U.
- Professor Extra-ordinaire: Université Catholique de Louvain
- The Newton International Scholarship: to go to Cambridge U. from U. of Tokyo

Achievements in Original Achievement, Investigation, and Research

Principal Research Grant Support (\$6.2M +)

- 2008/11 (co-PI with J. Murdoch, C. Eckel, and M. Caughy) "AOC: publicly driven investment, neighborhood change and household behavior," National Science Foundation (Human and Social Dynamics competition) [SES-0827350; \$1,000,178]
- 2007/08 (co-PI with M. Tiefelsdorf) "Training workshop in spatial filter modeling for environmental, health and social scientists and applied statisticians," National Science Foundation [SES 0724964; \$66,794]
- 2006/09 (investigator; with I. Vojnovic /Michigan State U., PI) "Exploring the social dynamics of accessibility, travel behavior, and physical activity by income/race, age, and gender: An inner-city/suburb comparison in the Detroit region," National Science Foundation (Human and Social Dynamics competition) [SES 0624263; \$643,964].
- 2004/07 (investigator; with Dr. John C. Beier/U. of Miami, PI) "Vector-borne disease control in urban environments," Interdisciplinary Exploratory Centers, National Institutes of Health [NIH P20RR20770; \$1,605,302]; see <http://www.intervector.org/>
- 2004/08 (with M. Tiefelsdorf) "Collaborative proposal: Approximating Eigensystems of Matrices Used in Spatial Analysis," Division of Mathematical Sciences and Methodology, Measurement & Statistics Programs, National Science Foundation [\$159,778]
- 2004 (with R. Haining) Leverhulme Trust [\$40,100]
- 2002/08 "Geography-Based Exposure Assessment for Urban Metals," Geography & Regional Science/Methodology, Measurement & Statistics Programs, National Science Foundation [BCS 0552588; \$420,000 + \$7,500 SU/UM/UTD grant + \$11,725 NSF-REU].
- 2001/02 "Scientific visualization of spatial autocorrelation," John Simon Guggenheim Memorial Foundation [\$35,000]
- 2000/01 "Model-based small geographic area estimation: a comparison of two methodologies," USDA-NASS Research Division [\$69,290]
- 1999/03 "An ordinary least squares (OLS) solution to handling spatial autocorrelation latent in georeferenced data," Geography & Regional Science/Measurement, Methods & Statistics Programs, National Science Foundation [\$203,876 + \$10,000 SU grant]
- 1999/00 (with G. Jacquez) supplement to "Biostatistical methods in environmental Epidemiology," the National Cancer Institute [\$49,790]
- 1999 ASA/USDA-NASS Research Fellowship [\$69,290]

- 1996/7 (GIS consultant for W. Coplin and A. Merget) "Community Bench-marks: a program to develop indicators of community conditions," Alfred P. Sloan Foundation [grant of \$579,000].
- 1995/97 "Uncovering relationships between geo-statistical and spatial autoregressive modelling," Geography & Regional Science/Methodology, Measurement & Statistics Programs, National Science Foundation [\$133,847 + \$5000 REU supplement].
- 1995 (GIS consultant for D. Armstrong and L. Wurst) "A unified site file and GIS data base for NYSDOT Region 3," New York State ISTE Transportation Enhancement Program [\$200,000].
- 1993 U.S./Canada Fulbright fellowship [\$25,000]
- 1992/94 Collaborative project between SU and IBM [\$39,443 in equipment]
- 1992/94 Cornell Theory Center [advanced computing resources]
- 1992/93 National Science Foundation (Geography & Regional Science and Statistics & Probability Programs) [\$71,951 + \$10,000 SU match]
- 1991/93, 94/96 NATO Scientific Affairs Collaborative Research Grant Program (with R. Haining, U. of Sheffield, and G. Arbia, U. of Rome); Phases I and II [\$14,300]
- 1989/91 NYS Science & Technology Foundation (consortium comprised of Syracuse U., SUNY College of Environmental Science & Forestry, and Cornell U.) [\$200,000]; follow up (with M. Monmonier, A. Can, F. Csillag, and J. Mercer) [\$30,000]
- 1989/90 National Center for Supercomputing Applications (U. of Illinois) [advanced computing resources]
- 1988/90 National Science Foundation (Geography & Regional Science) [\$40,000]
- 1987 Canadian Studies Program, Canadian Embassy (Academic Relations Office) [\$4,300]
- 1985 National Science Foundation (Geography & Regional Science) [\$10,000]
- 1985 Director, NATO Advanced Studies Institute (grant with R. Haining, U. of Sheffield) [\$35,000]
- 1981/2, 83/4, 85/7 NATO Research Grant for International Collaboration in Science (with R. Bennett, Cambridge U., and R. Haining, U. of Sheffield): Phases I, II and III [\$15,000]
- 1983/84 National Science Foundation (Geography & Regional Science) [\$34,700]
- 1979/80, 81/82 Director, NATO Advanced Studies Institutes (grant with, respectively, R. MacKinnon and A. Lea) [\$35,000; \$35,000]
- Summer, 1979 Association of American Geographers Research Grant [\$400]

Minor Research Grant Support (\$21K +)

- 1998 & 2000 SU Geography Department/Maxwell Dean's Office [\$2500; \$2000]
- 1994 SU/Center for Instructional Development [\$3000]

- 1987 SUNY/Buffalo Office of Teaching Effectiveness [\$1000]
- 1985 & 1987 Tenured Faculty Mini-grant (NY State/United University Professions) [\$750; \$1000]
- 1985 VP-Research, SUNY/Buffalo [\$600]
- 1982 Social Science Research Development Funds Grant, SUNY/Buffalo [\$1063]
- 1982 Baldy Center for Law and Social Policy Faculty Fellowship, SUNY/Buffalo [\$2500]
- 1981 SUNY Research Foundation Grant [\$3450]
- 1981 National Science Foundation travel grant for ISOLDE 81 (Skodsborg, Denmark) [\$894 + room and board]
- 1980 Baldy Center for Law and Social Policy Grant, SUNY/Buffalo [\$95]
- 1978 OUPID Instructional Development Grant (with H. Jacobs) [\$600]
- 1976 U. of Toronto/York U. Joint Program in Transportation Grant [\$2000]

Books (7)

- 2003 *Spatial Autocorrelation and Spatial Filtering: Gaining Understanding through Theory and Scientific Visualization*, Berlin: Springer-Verlag.
- 1999 (with L. Layne; 1st) *A Casebook for Spatial Statistical Data Analysis: A Compilation of Analyses of Different Thematic Datasets*, NY: Oxford University Press.
- 1997 (with C. Amrhein; 1st) *Multivariate Statistical Analysis for Geographers*, Englewood Cliffs, NJ: Prentice Hall.
- 1993 *Spatial Regression Analysis on the PC: Spatial Statistics Using SAS*, Washington, DC: Association of American Geographers "Resource Publications in Geography Series."
- 1991 (with C. Amrhein; 1st) *Statistical Analysis for Geographers*, Englewood Cliffs, NJ: Prentice Hall.
- 1988 *Advanced Spatial Statistics*, Dordrecht: Martinus Nijhoff.
- 1987 *Spatial Autocorrelation: A Primer*, Washington, D. C.: Assn. of American Geographers Resource Publication [used as source for a new GRASS-GIS program to calculate autocorrelation statistics].

Edited Books (6)

- 1998 (with C. Amrhein and J.-M. Hurriot) *Advances in Spatial Modelling and Methodology: Essays in Honor of Jean Paelinck*, Dordrecht: Kluwer
- 1995 (with S. Arlinghaus) *Practical Handbook of Spatial Statistics*, Boca Raton, FL: CRC Press.
- 1990 *Spatial Statistics: Past, Present, and Future*, Ann Arbor, MI: Institute of Mathematical Geography.
- 1986 (with R. Haining) *Transformations Through Space and Time*, The Hague: Martinus-Nijhoff.
- 1983 (with A. Lea) *Evolving Geographical Structures*, The Hague: Martinus Nijhoff.
- 1981 (with R. MacKinnon) *Dynamic Spatial Models*, Alphen aan den Rijn: Sijthoff and Noordhoff.

Journal Guest Editorships (3)

- 2007 (with G. Christakos) *J. of Stochastic Environmental Research & Risk Assessment*; special issue about medical geography as a science of interdisciplinary knowledge synthesis under conditions of uncertainty
- 2006 *Geographical Analysis*: special issue about Poisson modeling of georeferenced counts data
- 1992 (with C. Weiss and C. Duguay) *The Operational Geographer*, 10 (2): 2-3; special issue about spatial data analysis

Publications in Major Refereed Journals (49 single authored; 54 joint authored)

- 2010 (with G. Heuvelink; 2nd) Space-time geostatistics for geography: a case study of radiation monitoring across parts of Germany, *Geographical Analysis*, in press.
- 2010 (with G. Arbia; 1st) Detecting negative spatial autocorrelation in georeferenced random variables, *International J. of Geographical Information Science*, in press.
- 2010 An analytical perspective on sporting events attendance: the 2007-08 US NCAA college bowl games, *Applied Geography*, in press (on line: <http://dx.doi.org/10.1016/j.apgeog.2009.01.005>).
- 2009 (with J. Li and D. Wong; 3rd) Exploring and simulating the regularities in intra-urban population density structure, *Annals of GIS*, 15: 11-22.
- 2009 (with B. Jacob, E. Muturi, E. Caamano, J. Githure, and R. Novak; 2nd) An heteroskedastic error covariance matrix estimator using a first-order conditional autoregressive Markov simulation of ecological sampled *Anopheles arabiensis* aquatic habitat covariates, *Malaria Journal*, 8: 216, 16 pp. (online: doi:10.1186/1475-2875-8-216).
- 2009 (with D. Johnson, A. Hunt; 1st) The geographic distribution of metals in urban soils: the case of Syracuse, NY, *GeoJournal*, 74: 275-291.
- 2009 (with D. Johnson, A. Hunt, J. Hager, J. Brooks, [H. Stella-Levinsohn](#), [A. Lanciki](#), [R. Lucci](#), [D. Prokhorova](#), and [S. Blount](#); 3rd) [Geographic patterns of non-carpeted floor dust loading in Syracuse, New York \(USA\) homes](#), *Environmental Geochemistry and Health*, 31: 353-363.
- 2009 Modeling spatial autocorrelation in spatial interaction data: empirical evidence from 2002 Germany journey-to-work flows, *J. of Geographical Systems*, 11: 117-140.
- 2009 (with R. Haining and J. Law; 3rd) Modelling small area counts in the presence of overdispersion and spatial autocorrelation, *Computational Statistics & Data Analysis*, 53: 2923-2937.
- 2009 (with J. Paelinck; 1st) Specifying a joint space- and time-lag using a bivariate Poisson distribution, *J. of Geographical Systems*, 11: 23-36.
- 2009 (with B. Jacob, E. Muturi, E. Caamano, J. Shililu, J. Githure, and R. Novak; 2nd) [Describing *Anopheles arabiensis* aquatic habitats in two riceland agro-ecosystems in Mwea, Kenya using a negative binomial regression model with a non-homogenous mean](#), *Acta Tropica*, 109 (1): 17-26.
- 2008 Ethical considerations in geographic research: what especially graduate students need to know, *Ethics, Place, and Environment*, 11: 237-253.

- 2008 A comparison of four model specifications for describing small heterogeneous space-time datasets: sugar cane production in Puerto Rico, 1958/59-1973/74, *Papers in Regional Science*, 87: 341-356.
- 2008 Spatial filtering-based contributions to a critique of geographically weighted regression (GWR), *Environment & Planning A*, 40: 2751-2769.
- 2008 (with M. Fischer; 2nd) Modelling spatial autocorrelation in spatial interaction data: An application to patent data in the European Union, *J. of Regional Science*, 48: 969-989.
- 2008 Geographic sampling of urban soils for contaminant mapping: how many samples and from where, *Environmental Geochemistry and Health*, 30: 495-509.
- 2008 (with A. Hunt, D. Johnson, J. Brooks; 4th) [Risk remaining from fine particle contaminants after vacuum cleaning of hard floor surfaces](#), *Environmental Geochemistry and Health*, 30: 597-611.
- 2008 (with B. Jacob and R. Novak; 2nd) Decomposing malaria mosquito aquatic habitat data into spatial autocorrelation eigenvectors in a SAS/GIS[®] module, *Transactions in GIS*, 12: 341-364.
- 2008 (with B. Jacob, J. Gunter, E. Muturi, E. Caamano, J. Shililu, J. Githure, J. Regens, and R. Novak; 2nd) A spatial filtering specification for an auto-negative binomial model of *Anopheles arabiensis* aquatic habitat, *Transactions in GIS*, 12: 515-539.
- 2008 (with B. Berry and M. Tiefelsdorf; 2nd) From spatial analysis to geospatial science, *Geographical Analysis*, 40: 229-238.
- 2007 Spatial structure and spatial interaction: 25 years later, *The Review of Regional Studies*, 37, #1: 28-38.
- 2007 (with M. Millones, M. Vincent, D. Johnson, and A. Hunt; 1st) Impacts of positional error on spatial regression analysis: A case study of address locations in Syracuse, NY, *Transactions in GIS*, 11: 655-679.
- 2007 (with W. Thayer and G. Diamond; 2nd) Geography of asbestos contamination near the World Trade Center site, *Stochastic Environmental Research & Risk Assessment*, 21: 461-471.
- 2007 (with M. Tiefelsdorf; 2nd) Semi-parametric filtering of spatial autocorrelation: the eigenvector approach, *Environment & Planning A*, 39: 1193-1221.
- 2007 (with D. Wong; 1st) Modeling population density across major U.S. cities: a polycentric spatial regression approach, *J. of Geographical Systems*, 9: 53-75.
- 2007 (with J. Paelinck; 1st) An equation by any other name is still the same: on spatial statistics and spatial econometrics, *Annals of Regional Science*, 41: 209-227.
- 2006 (with A. Hunt and D. Johnson; 3rd) Mass transfer of soil indoors by track-in on footwear, *The Science of the Total Environment*, 370: 360-371.
- 2006 Hidden negative spatial autocorrelation, *J. of Geographical Systems*, 8: 335-355.
- 2006 (with P. Peres-Neto; 1st) Spatial modeling in ecology: the flexibility of eigenfunction spatial analyses, *Ecology*, 87: 2603-2613.
- 2006 (with R. Haining; 1st) Beyond mule kicks: the Poisson distribution in geographical analysis, *Geographical Analysis*, 38: 123-139.

- 2006 Assessing spatial dependence in count data: Winsorized and spatial filter specification alternatives to the auto-Poisson model, *Geographical Analysis*, 38: 160-179.
- 2005 (with B. Jacob, K. Arheart, C. Mbogo, A. Githeko, J. Regens, J. Githure, R. Novak, and J. Beier; 3rd) Evaluation of environmental data for identification of *anopheles* (diptera: culicidae) aquatic larval habitats in Kisumu and Malindi, Kenya, *Journal of Medical Entomology*, 42: 751-755.
- 2005 Effective geographic sample size in the presence of spatial autocorrelation, *Annals, Association of American Geographers*, 95: 740-760.
- 2005 A comparison of four analytical disease mapping techniques as applied to West Nile Virus in the coterminous United States, *International Journal of Health Geographics*, 4: 18 (14 pp).
- 2005 (with D. Johnson, J. Hager, A. Hunt, S. Blount, S. Ellsworth, J. Hintz, R. Lucci, A. Mittiga, D. Prokhorova, L. Tidd, M. Millones, and M. Vincent; 4th) Field methods for mapping urban metal distributions in house dusts and surface soils of Syracuse, NY, USA, *Science in China (Series C: Life Sciences)*, 48 (supplement): 192-199.
- 2004 Faster maximum likelihood estimation of very large spatial autoregressive models: an extension of the Smirnov-Anselin result, *J. of Statistical Computation and Simulation*, 74: 855-866.
- 2004 Distributional properties of georeferenced random variables based on the eigenfunction spatial filter, *J. of Geographical Systems*, 6: 263-288.
- 2004 A spatial filtering specification for the auto-logistic model, *Environment & Planning A*, 36: 1791-1811.
- 2004 Extreme eigenfunctions of adjacency matrices for planar graphs employed in spatial analyses, *Linear Algebra & Its Applications*, 388: 201-219.
- 2003 (with D. Wong and T. Whitfield; 1st) Exploring relationships between the global and regional measures of spatial autocorrelation, *J. of Regional Science*, 43: 683-710.
- 2003 (with W. Thayer, P. Goodrum, G. Diamond and J. Hassett; 2nd) Application of geostatistics to risk assessment, *Risk Analysis: An International Journal*, 23: 945-960.
- 2003 Using estimated missing spatial data with the 2-median model, *Annals of Operations Research*, 122: 233-247.
- 2003 (with G. Arbia and R. Haining; 2nd) Spatial error propagation when computing linear combinations of spectral bands: the case of vegetation indices, *Environmental and Ecological Statistics*, 10: 375-396; reply to commentary, 399-400.
- 2002 The geographic distribution of soil-lead concentration: description and concerns, *URISA Journal*, 14: 5-15.
- 2002 A spatial filtering specification for the auto-Poisson model, *Statistics & Probability Letters*, 58: 245-251.
- 2002 Modeling spatial dependence in high spatial resolution hyperspectral data sets, *J. of Geographical Systems*, 4: 43-51.
- 2002 (with A. Getis; 2nd) Comparative spatial filtering in regression analysis, *Geographical Analysis*, 34: 130-140.

- 2000 Eigenfunction properties and approximations of selected incidence matrices employed in spatial analyses, *Linear Algebra & Its Applications*, 321: 95-112.
- 2000 (with Z. Zhang; 2nd) Integrating GIS components and spatial statistical analysis in DBMS, *International J. of Geographical Information Science*, 14: 543-566.
- 2000 A linear regression solution to the spatial autocorrelation problem, *J. of Geographical Systems*, 2: 141-156.
- 1999 (with Z. Zhang; 1st) Computational simplifications needed for efficient implementation of spatial statistical techniques in a GIS, *J. of Geographic Information Science*, 5: 97-105.
- 1999 (with G. Arbia and R. Haining; 2nd) Error propagation modelling in raster GIS: addition and ratioing operations, *Cartography & Geographic Information Systems*, 26: 297-315.
- 1999 Statistical and mathematical sources of regional science theory: map pattern analysis as an example, *Papers in Regional Science*, 78: 21-45.
- 1999 (with M. Tiefelsdorf and B. Boots; 2nd) A variance stabilizing coding scheme for spatial link matrices, *Environment and Planning A*, 31: 165-180.
- 1998 (with P. Doyle, D. Wheeler, and D. Johnson; 1st) A Tale of two swaths: urban childhood blood lead levels across Syracuse, NY, *Annals, Assn. of American Geographers*, 88: 640-665.
- 1998 (with F. Lagona; 1st) On the quality of likelihood-based estimators in spatial autoregressive models when the data dependence structure is misspecified, *J. of Statistical Planning and Inference*, 69: 153-174.
- 1998 Provincial-level spatial statistical modelling of the change in per capita disposable family income in Spain, 1975-1983, *Cybergeo*, www.cybergeo.presse.fr, #46.
- 1998 (with G. Arbia and R. Haining; 2nd) Error propagation modelling in raster GIS: overlay operations, *International J. of Geographical Information Systems*, 12: 145-167.
- 1997 (with Z. Zhang; 2nd) Developing user-friendly spatial statistical analysis modules for GIS: an example using ArcView, *Computers, Environment and Urban Systems*, 21: 5-29.
- 1997 Using estimated missing spatial data in obtaining single facility location-allocation solutions, *l'Espace Géographique*, 26: 173-182.
- 1996 Spatial autocorrelation and eigenfunctions of the geographic weights matrix accompanying geo-referenced data, *The Canadian Geographer*, 40: 351-367.
- 1996 (with D. Johnson and K. McDade; 3rd) Seasonal variation in pediatric blood lead levels in Syracuse, NY, *Environmental Geochemistry and Health*, 18 (#2): 81-88.
- 1995 (with A. Sone; 1st) Trade-offs associated with normalizing constant computational simplifications for estimating spatial statistical models, *J. of Statistical Computation and Simulation*, 51: 165-183.
- 1994 (with R. Haining and G. Arbia; 3rd) Heterogeneity of attribute sampling error in spatial data sets, *Geographical Analysis*, 26: 300-320.

- 1994 (with S. DeGloria and L. Herrington; 1st) Characterizing geographic information and analysis needs in New York State: an overview and assessment, *Cartography and Geographic Information Systems*, 21: 69-80.
- 1993 (with F. Csillag; 1st) Exploring relationships between semi-variogram and spatial autoregressive models, *Papers in Regional Science*, 72: 283-296.
- 1993 (with C. Cordy; 2nd) Efficiency of least squares estimators in the presence of spatial autocorrelation, *Communications in Statistics, Series B*, 22: 1161-1179.
- 1993 Advanced spatial statistics for analyzing and visualizing geo-referenced Data, *International J. of Geographical Information Systems*, 7: 107-123.
- 1992 A spatially adjusted N-way ANOVA model, *Regional Science & Urban Economics*, 22: 347-369.
- 1992 Simplifying the normalizing factor in spatial autoregressions for irregular lattices, *Papers in Regional Science*, 71: 71-86.
- 1992 Teaching spatial statistics to geographers using MINITAB, *J. of Geography in Higher Education*, 16: 45-59.
- 1992 What is spatial autocorrelation? reflections on the past 25 years of spatial statistics, *l'Espace Géographique*, 21: 265-280.
- 1992 (Goodchild, Haining, Wise, et al.) Integrating GIS and spatial data analysis: problems and possibilities, *International J. of Geographical Information Systems*, 6: 407-423.
- 1990 (with V. Tikunov; in Russian; 2nd) Comparative analysis of algorithms for modelling typological maps contents, *Geodesy and Cartography*, No. 8, 39-43.
- 1990 Supercomputing and spatial statistics: a reconnaissance, *The Professional Geographer*, 42: 481-492.
- 1989 (with R. Haining and R. Bennett; 1st) Statistical analysis of spatial data in the presence of missing observations: an application to urban census data, *Environment & Planning A*, 21: 1511-1523.
- 1989 (with R. Haining and R. Bennett; 2nd) Maximum likelihood estimation with missing spatial data and with an application to remotely sensed data, *Communications in Statistics*, 18: 1875-1894.
- 1989 Pure error and lack-of-fit regression diagnostics in the presence of spatial dependence, *Sistemi Urbani*, (#2) 139-151.
- 1988 (with L. Anselin; 2nd) Do spatial effects really matter in regression analysis?, *Papers of the Regional Science Association*, 65: 11-34.
- 1988 Estimating spatial autoregressive model parameters with commercial statistical packages, *Geographical Analysis*, 20: 176-186.
- 1987 Toward a theory of spatial statistics: another step forward, *Geographical Analysis*, 19: 69-82.
- 1987 Teaching spatial autocorrelation by simulation, *J. of Geography in Higher Education*, 11: 143-153; **reprinted** in D. Unwin and C. Wood (eds.), *Readings in Computer Assisted Learning in Geography*. Leicester, UK: Computers in Teaching Initiative Center for Geography, 1990, pp. 155-165.
- 1986 (with M. O'Neill, W. O'Neill, L. Leifer, R. Mooney; 1st) Shape indices: useful measures or red herrings?, *The Professional Geographer*, 38: 263-270.
- 1986 Central place structures using constant elasticity of consumption demand cones: part I, the infinite plane, *Economic Geography*, 62: 74-84.

- 1985 An evaluation of correction techniques for boundary effects in spatial statistical analysis: contemporary methods, *Geographical Analysis*, 17: 81-88.
- 1984 (with R. Bennett and R. Haining; 3rd) The problem of missing data on spatial surfaces, *Annals*, Association of American Geographers, 74: 138-156.
- 1984 Re-examining the question "Are locations unique?", *Progress in Human Geography*, 8: 82-94.
- 1984 (with R. Bennett and R. Haining; 2nd) A statistical approach to the problem of missing spatial data using a first-order Markov model, *The Professional Geographer*, 36: 338-345.
- 1983 The boundary value problem in spatial statistical analysis, *J. of Regional Science*, 23: 377-387.
- 1983 (with R. Haining and R. Bennett; 2nd) Simulating Two dimensional autocorrelated surfaces, *Geographical Analysis*, 15: 247-255.
- 1983 (with C. Amrhein; 1st) An evaluation of correction techniques for boundary effects in spatial statistical analysis: traditional methods, *Geographical Analysis*, 15: 352-360.
- 1982 Dynamic characteristics of spatial economic systems, *Economic Geography*, 58: 178-196.
- 1982 Geometry and spatial interaction, *Annals*, Association of American Geographers, 72: 332-346.
- 1982 A generalized Huff model, *Geographical Analysis*, 14: 135-144.
- 1981 Modelling urban population in a multi-centered city, *J. of Urban Economics*, 9: 298-310.
- 1981 Evaluating the transformation from a monocentric to a polycentric city, *The Professional Geographer*, 33: 189-196.
- 1980 (with K. Jones; 1st) Explorations into the relationship between spatial structure and spatial interaction, *Environment and Planning A*, 12: 187-201.
- 1980 Towards a theory of spatial statistics, *Geographical Analysis*, 12: 325-339.
- 1979 Urban dominance, spatial structure and spatial dynamics: some theoretical conjectures and empirical implications, *Economic Geography*, 55: 95-113.
- 1978 A spatially adjusted ANOVA model, *Geographical Analysis*, 10: 296-301.
- 1976 (with E. Sheppard and L. Curry; 2nd) A final comment on mis-specification and autocorrelation in those gravity parameters, *Regional Studies*, 10: 337-339.
- 1976 Spatial structure and spatial interaction: a review, *Environment and Planning A*, 8: 731-740.
- 1975 (with L. Curry and E. Sheppard; 2nd) Those gravity parameters again, *Regional Studies*, 9: 289-296.
- 1975 A note on spatial autocorrelation, *The Professional Geographer*, 27: 470-474.

Journal Guest Editorships (3)

- 2007 (with G. Christakos) *J. of Stochastic Environmental Research & Risk Assessment*; special issue about medical geography as a science of interdisciplinary knowledge synthesis under conditions of uncertainty

- 2006 *Geographical Analysis*: special issue about Poisson modeling of georeferenced counts data
- 1992 (with C. Weiss and C. Duguay) *The Operational Geographer*, 10 (2): 2-3; special issue about spatial data analysis

Secondary and Non-refereed Publications (22 single authored; 15 joint authored)

- 2009 Introduction, *Geographical Analysis*, 41: 1-2.
- 2007 (with G. Christakos) Medical geography as a science of interdisciplinary knowledge synthesis under conditions of uncertainty, *Stochastic Environmental Research & Risk Assessment*, 21: 459-460.
- 2007 An assessment of Mr. Alec Rawls's "Islamic and jihadist design features of the Crescent/Bowl of Embrace," report submitted to the National Park Service, U.S. Department of the Interior.
- 2006 Beyond the bell-shaped curve: Poisson models in spatial data analysis, *Geographical Analysis*, 38: iii-iv.
- 2006 (with R. Patuelli, M. Tiefelsdorf and P. Nijkamp) The use of spatial filtering techniques: the spatial and space-time structure of German unemployment data, *Discussion Paper # 06-049/3*, Tinbergen Institute, Amsterdam, The Netherlands.
- 2001 (with A. Lea) "Opposites don't attract in spatial autocorrelation," *GEOWorld*, 14, #11 (November), 42-44 (www.geoplace.com/gw/).
- 2000 (with P. Fellows and F. Lagona), "Promoting statistical literacy: a conceptual approach to teaching first-year students," in *1999 Sigma Xi Forum Proceedings*, p. 173.
- 2000 "Small geographic area estimation contributions to federal agricultural data: a Pennsylvania case study," *The Pennsylvania Geographer*, 38 (#1): 3-29.
- 2000 "President's Column," *Sigma Xi News*, 9 (#3), March, pp. 1, 5.
- 1999 "A methodology for small area estimation with special reference to a one-number agricultural census and confidentiality: results for selected major crops and states," *RD Research Report*, Number RD-99-04, National Agricultural Statistics Service, U.S. Department of Agricultural.
- 1999 "President's Column," *Sigma Xi News*, 9 (#2), October, pp. 1, 4.
- 1997 (with F. Lagona) "Specification errors in spatial models: impacts on modeling and estimation," *Discussion Paper* No. 108, Department of Geography, Syracuse University.
- 1997 "Final Report: Spatial Sampling for the 'Community Benchmark Project'" for project funded by the Alfred P. Sloan Foundation, W. Coplin and A. Merget Pls, Public Administration.
- 1995 (with S. Borker, S. Stehman, and S. Halperin) "STT 101: Introduction to Statistics, a final report on development of the course," *Final Report* submitted to the Dean of Arts & Sciences; *Final Report* on "Design of a numerically based introduction to statistics (STT 101)," Syracuse University Faculty Instructional Grants Program, to Center for Instructional Development.
- 1995 (with R. Martin) "Some results on graph spectra, with applications to geographic spatial modelling," *Research Report* No. 461/95, Department of Probability and Statistics, U. of Sheffield.

- 1993 (with A. Sone) "Some trade-offs associated with computational simplifications for estimating spatial statistical/econometric models: preliminary results," Discussion Paper No. 103, Department of Geography, Syracuse University.
- 1993 A course in spatial statistics, Technical Report #153, Department of Statistics, Oregon State University.
- 1992 (with J. Mercer, F. Csillag, M. Monmonier, and A. Can) "The Utility of GIS for State Housing Agency Databases: New York State's SHARS," Final Report submitted to the NYS Science and Technology Foundation.
- 1992 "Estimating missing values in spatial urban census data," *The Operational Geographer*, 10 (2): 23-26 [also translated into French].
- 1992 (with A. Sone) "Trade-offs associated with computational simplifications for estimating spatial statistical models," Working Paper, l'Institut de Mathematiques Economiques, Universite de Bourgogne, Dijon, France (with French "Resumé").
- 1991 "Error assessment, locational errors, and attribute errors," in GIS and spatial data analysis: report on the Sheffield workshop, Regional Research Laboratory Initiative Discussion Paper #11, R. Haining and S. Wise (eds.), University of Sheffield, November pp. 14-15.
- 1991 "Univariate and multivariate modelling of areal data, in GIS and spatial data analysis: report on the Sheffield workshop," in R. Haining and S. Wise (eds.), Regional Research Laboratory Initiative Discussion Paper #11, University of Sheffield, pp. 22-25.
- 1991 (with C. Amrhein) "A statistical model for analyzing error in geographic data in an information system," Discussion Paper No. 38, Department of Geography, University of Toronto.
- 1991 (with A. Sone) "An evaluation study of a location-allocation modeling software package for the PC," Discussion Paper No. 101, Department of Geography, Syracuse University.
- 1990 (with R. Lewis, B. Li, I. Vasiliev, S. McKnight, X. Yang) "Developing MINITAB software for spatial statistical analysis: a tool for education and research," *The Operational Geographer*, 8 (3): 28-33.
- 1990 (with R. Jensen, M. Monmonier, S. DeGloria, L. Herrington) Final Report, New York State Program in Geographic Information and Analysis Planning Grant, Syracuse University, 191 pp.
- 1990 "A New York State Program in Geographic Information and Analysis: report on the planning grant," URISA NYS Chapter Newsletter, Vol. 1, #2 (Winter).
- 1988 "A Reply to R. Martin, Some comments on correction techniques for boundary effects and missing value techniques," *Geographical Analysis*, 20: 70-75.
- 1986 "An overview of the spatial statistics literature," Discussion Paper No. 1986/6, Foundations of Empirical Economics Research Series, Netherlands Economic Institute.
- 1981 "Towards a theory of spatial statistics: a rejoinder," *Geographical Analysis*, 13: 91-93.
- 1978 The impact of configuration and spatial autocorrelation on the investigation and interpretation of geographical models, unpublished doctoral dissertation, Department of Geography, University of Toronto.

- 1977 "Spatial economic dynamics and the Canadian grain handling system: some preliminary findings," Working Paper No. 5, U. of Toronto/York U. Joint Program in Transportation, U. of Toronto.
- 1976 "Spatial autocorrelation problems: some preliminary sketches of a structural taxonomy," *The East Lakes Geographer*, 11: 59-68.
- 1975 "The search for spatial theories: on the role of conceptual and computational models in geographic research," *The Geographical Bulletin*, 9: 7-13.
- 1975 (with L. Bourne) "The spatial organization of urban land use: a statistical evaluation of a classification," Research Paper No. 69, Centre for Urban and Community Studies, University of Toronto.
- 1974 "A maximum likelihood technique for estimating the parameters of a spatial probability function," Discussion Paper No. 16, Department of Geography, University of Toronto.
- 1972 "The use of regression models in geographic research: a classroom methodology," *The Pennsylvania Geographer*, 10: 7-14.

Invited encyclopedia entries (9 single authored; 2 joint authored)

- 2010 "Error propagation," in B. Warf (ed.), *Encyclopedia of Geography*. Thousand Oaks, CA: SAGE, pp., in press.
- 2010 "Methods: spatial autocorrelation," in R. Kitchin and N. Thrift (eds.), *International Encyclopedia of Human Geography*. NY: Elsevier, pp. in press
- 2010 "Methods: spatially autoregressive models," in R. Kitchin and N. Thrift (eds.), *International Encyclopedia of Human Geography*. NY: Elsevier, pp. in press
- 2010 "Spatial filtering," Chapter B.5 in A. Getis and M. Fischer (eds.), *Handbook of Applied Spatial Analysis*. Berlin: Springer-Verlag, pp. 301-318.
- 2010 (with M. Rura, 2nd) "Spatial statistics in SAS," Chapter A.2 in A. Getis and M. Fischer (eds.), *Handbook of Applied Spatial Analysis*. Berlin: Springer-Verlag, 43-52.
- 2008 "Nonstationarity," in K. Kemp (ed.), *Encyclopedia of Geographic Information Science*. Thousand Oaks, CA: SAGE, pp. 319-320.
- 2008 "Regionalized variables," in K. Kemp (ed.), *Encyclopedia of Geographic Information Science*. Thousand Oaks, CA: SAGE, pp. 363-365.
- 2008 "Spatial filtering," in K. Kemp (ed.), *Encyclopedia of Geographic Information Science*. Thousand Oaks, CA: SAGE, pp. 413-415.
- 2005 "Spatial autocorrelation," in K. Kempf-Leonard (ed.), *Encyclopedia of Social Measurement*, Vol. 3. San Diego, CA: Academic Press (Elsevier), pp. 581-590.
- 2005 (with A. Lea) "Locational decision making," in K. Kempf-Leonard (ed.), *Encyclopedia of Social Measurement*, Vol. 2. San Diego, CA: Academic Press (Elsevier), pp. 559-575.
- 2005 "Geographic Information Systems," in S. Kotz, C. Read, N. Balakrishnan, and B. Vidakovic (eds.), *Encyclopedia of Statistical Sciences*, 2nd ed., Vol. 4, pp. 2764-2771; an earlier version appeared in S. Kotz, C. Read, and D. Banks (eds.), updated volumes of *Encyclopedia of Statistical Sciences*, Vol. 3, NY: Wiley, 1999, pp. 268-269.

Contributions to and/or Chapters in Books (13 single authored; 3 joint authored)

- 2009 "Spatial autocorrelation in spatial interaction: complexity-to-simplicity in journey-to-work flows," in P. Nijkamp and A. Reggiani (eds.), *Complexity and Spatial Networks: In Search of Simplicity*. Berlin: Springer-Verlag, pp. 221-237.
- 2009 "Quick but not so dirty ML estimation of spatial autoregressive models," in M. Sonis and G. Hewings (eds.), *Tool Kits in Regional Science*. Berlin: Springer-Verlag, pp. 215-241.
- 2000 "Seemingly invisible farms in southwestern Pennsylvania," in K. Patrick and J. Scarpaci (eds.), *A Geographic Perspective of Pittsburgh and the Alleghenies: From Precambrian to Post-industrial*, Association of American Geographers, pp. 175-181.
- 1998 (with C. Amrhein) "Introduction: Focus on Jean Paelinck," in D. Griffith, C. Amrhein and J-M. Huriot (eds.), *Advances in Spatial Modelling and Methodology: Essays in Honor of Jean Paelinck*, Dordrecht: Kluwer, pp. 1-6.
- 1998 (with J. Paelinck and R. van Gastel) "The Box-Cox transformation: computational and interpretation features of the parameters," in D. Griffith, C. Amrhein and J-M. Huriot (eds.), *Advances in Spatial Modelling and Methodology: Essays in Honor of Jean Paelinck*, Dordrecht: Kluwer, pp. 45-56.
- 1996 "Spatial statistical analysis and GIS: exploring computational simplifications for estimating the neighborhood spatial forecasting model," in P. Longley and M. Batty (eds.), *Spatial Analysis: Modelling in a GIS Environment*, Longman GeoInformation, pp. 255-268.
- 1996 "Introduction: the need for spatial statistics," in S. Arlinghaus and D. Griffith (eds.), *Practical Handbook of Spatial Statistics*, Boca Raton, FL: CRC Press, pp. 1-15.
- 1996 "Some guidelines for specifying the geographic weights matrix contained in spatial statistical models," in S. Arlinghaus and D. Griffith (eds.), *Practical Handbook of Spatial Statistics*, Boca Raton, FL: CRC Press, pp. 65-82.
- 1996 (with A. Can) "Spatial statistical/econometric versions of simple urban population density models," in S. Arlinghaus and D. Griffith (eds.), *Practical Handbook of Spatial Statistics*, Boca Raton, FL: CRC Press, pp. 231-249.
- 1995 "The general linear model and spatial autoregressive models," in L. Anselin and R. Florax (eds.), *New Directions in Spatial Econometrics*, Berlin: Springer-Verlag, 1995, pp. 273-295.
- 1993 Which spatial statistics techniques should be converted to GIS functions? in M. Fischer and P. Nijkamp (eds.), *Geographic Information Systems, Spatial Modelling and Policy Evaluation*, Berlin: Springer-Verlag, pp. 103-114.
- 1992 Model identification for estimating missing values in space-time data series: monthly inflation in the U.S. Urban System, 1977-1990, in G. Haag, U. Mueller, and K. Troitzsch (eds.), *Economic Evolution and Demographic Change: Formal Models in Social Sciences*, Berlin: Springer-Verlag, pp. 192-218.
- 1990 A numerical simplification for estimating parameters of spatial autoregressive models, in D. Griffith (ed.), *Spatial Statistics: Past, Present, and Future*, Ann Arbor, MI: Institute of Mathematical Geography, pp. 185-195.
- 1984 Theory of spatial statistics, in C. Willmott and G. Gaile (eds.), *Spatial Statistics and Models*, Dordrecht, The Netherlands: R. Reidel, pp. 3-15.
- 1984 Measuring the arrangement property of a system of areal units generated by partitioning a planar surface, in G. Bahrenberg, M. Fischer and P.

Nijkamp (eds.), *Recent Developments in Spatial Analysis: Methodology, Measurement, Models*, Aldershot, UK: Gower, pp. 191-200.

- 1982 Geographic infrastructure and numerical spatial analysis, in *Spatial-Economic Structures of the Far East*, Vladivostok: USSR Academy of Sciences, pp. 93-103.

Conference Proceedings (10 single authored; 12 joint authored)

- 2008 Spatial autocorrelation and random effects in digitizing error, in J. Zhang and M. Goodchile (eds), *Spatial Uncertainty*, vol I, Proceedings of the 8th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Shanghai, China: World Academic Press, pp. 94-102.
- 2006 Statistical efficiency of model-informed geographic sampling designs, in C. Mário and M. Painho (eds.), *Proceedings of Accuracy 2006*, Proceedings of the 7th International Symposium on Spatial Accuracy Assessment in a Natural Resources and Environmental Sciences, Lisboa, Portugal: Instituto Geográfico Português, pp. 91-98.
- 2002 (with S. McMaster) Spatial statistical evaluation of a forestry suitability index: assessing uncertainty in spatial decision making, in G. Hunter and K. Lowell (eds.), *Accuracy 2002*, Proceedings of the 5th International Symposium on Spatial Accuracy Assessment in a Natural Resources and Environmental Sciences, Melbourne, AU: RMIT U., pp. 522-530.
- 2000 (with G. Arbia and R. Haining) Error propagation effects in aggregated spatial data with location error, in G. Heuvelink and M. Lemmens (eds.), *Accuracy 2000*, Proceedings of the 4th International Symposium on Spatial Accuracy Assessment in a Natural Resources and Environmental Sciences, Delft, NL: Delft U. Press, pp. 261-266.
- 2000 Spatial statistical reflections on an area frame sampling design for collecting agricultural statistics in South Africa, *Proceedings of the RSAI/Port Elizabeth Technikon Symposium in South Africa on: Challenges for Integrated Regional Development: International & South African Experiences*, Port Elizabeth, South Africa: <http://www.petech.ac.za/RegDev/html/Paper-Griffith.htm>.
- 1999 (with G. Arbia and R. Haining) Uncertainty and error propagation in map analyses involving arithmetic and overlay operations: inventory and prospects, in K. Lowell and A. Jatón (eds.), *Spatial Accuracy Assessment: Land Information Uncertainty in Natural Resources*, Ann Arbor Press pp. 11-25
- 1999 (with P. Fellows) Pixels and eigenvectors: classification of LANDSAT TM imagery using spectral and locational information, in K. Lowell and A. Jatón (eds.), *Spatial Accuracy Assessment: Land Information Uncertainty in Natural Resources*, Ann Arbor Press, pp. 309-317.
- 1997 (with L. Layne) Uncovering relationships between geo-statistical and spatial autoregressive models, in the 1996 *Proceedings on the Section on Statistics and the Environment*, American Statistical Association, pp. 91-96.
- 1996 (with L. Layne and P. Doyle) Further explorations of relationships between semi-variogram and spatial autoregressive models, in H. Mowrer, R. Czaplewski and R. Hamre (eds.), *Spatial Accuracy in Natural Resource and Environmental Sciences: Second International Symposium*. Ft. Collins CO: Rocky

Mountain Forest and Range Experiment Station, General Technical Report RM-GTR-277, pp. 147-154.

- 1994 (with C. Amrhein) Errors in spatial data bases: a summary of results from several research projects, in R. Congalton (ed.), *International Symposium on the Spatial Accuracy of Natural Resource Data Bases*. Bethesda, MD: American Society for Photogrammetry & Remote Sensing, pp. 214-226.
- 1993 (with D. Long, S. DeGloria, G. Carlson, and G. Nielsen) Spatial regression analysis of crop and soil variability within an experimental research field, in P. Robert et al (eds.), *Proceedings of the First Workshop on Soil Specific Crop Management*, Minneapolis, MN, April 14-16, 1992. Madison, WI: ASA-CSSA-SSSA, pp. 365-366.
- 1992 Statistical analysis of spatial urban census data in the presence of missing values, *Proceedings, Statistics Canada Symposium 91: Spatial Issues in Statistics* (held November 12-14), Ottawa: Statistics Canada, pp. 251-268.
- 1991 (with C. Amrhein) A simple model for statistical quality control of geographical data in an information system, *Proceedings, The Canadian Conference on GIS* (held March 18-22), Ottawa: CISM, pp. 94-103.
- 1991 Data quality and visualization: a position paper, in M. Beard, B. Bittenfield, and S. Clapham (eds.), *NCGIA Research Initiative 7: Visualization of Spatial Data Quality, Technical Paper* No. 91-26, NCGIA, C77-C85.
- 1989 Distance calculations and errors in geographic data bases, in M. Goodchild and S. Gopal (eds.), *Accuracy of Spatial Databases*, New York: Taylor & Francis, pp. 81-90; **translated and reprinted in abridged form** in *Nederlands Geodetisch Tijdschrift Geodesia*, 92-1 (1992), 4-8; specially acknowledged by the French National Geographic Institute, 1997.
- 1986 Model identification for estimating missing values in space-time data series: monthly inflation in the U.S. urban system, 1977-1985, in D. Griffith and R. Haining (eds.), *Transformations Through Space and Time*. The Hague: Martinus Nijhoff, pp. 309-319.
- 1986 (with J. Huff, M. Sonis, L. Leifer and D. Straussfogel) Dynamic central place theory: an appraisal and future prospects, in D. Griffith and R. Haining (eds.), *Transformations Through Space and Time*. The Hague: Martinus Nijhoff, pp. 121-151.
- 1985 (with R. Haining and R. Bennett) Estimating missing values in space-time data series, in J. Ord and O. Anderson (eds.), *Time Series Analysis: Theory and Practice 6*. Amsterdam: North-Holland, pp. 273-282.
- 1983 Contraction dynamics of the Puerto Rican sugar industry: a preliminary analysis, in B. Lentnek (ed.), *Contemporary Issues in Latin American Geography*, Proceedings of CLAG #9, pp. 142-143.
- 1983 (with C. Amrhein and J. Guevara) The effect of random Thiessen structure and random processes on the measurement of spatial autocorrelation, *Proceedings, 14th annual Pittsburgh Modelling and Simulation Conference*, pp. 585-589.
- 1983 Phasing-out of the Puerto Rican sugar industry, in D. Griffith and A. Lea (eds.), *Evolving Geographical Structures*. The Hague: Martinus Nijhoff, pp. 196-228.

- 1981 Interdependence in space and time: numerical and interpretative considerations, in D. Griffith and R. MacKinnon (eds.), *Dynamic Spatial Models*. Alphen aan den Rijn: Sijthoff and Noordhoff, pp. 258-287.

Invited Lectures and Presentations

FEATURED/KEYNOTE PRESENTATIONS

- Spatial filtering: past, present, and future, International Symposium on Geo-computation and Analysis (ISGA), LIESMARS, Wuhan University
- Remarks on observational dependence and the utilization of spatial filters in labour-market research, Labour Market Strategies and Policies in the Age of Globalization, IAB, Nuremberg, Germany
- A numerical study of planar and near-planar adjacency matrices used in geographical analysis, MAT-TRIAD 2007, Institute of Mathematics of the Polish Academy of Sciences.
- Spatially structured random effects & Spatial filtering and space-time data, Symposium on Quantitative Ecology, Research Center for Biodiversity of Academia Sinica, Taiwan.
- Entering an interdisciplinary world, 2006 Commencement Address, Indiana U. of Pennsylvania (reported on in the Sunday, May 14, 2006, Indiana Gazette).
- To IUP and beyond, 2006 Department of Geography & Regional Planning, Indiana U. of Pennsylvania, convocation address.
- Prioritizing remediation within a hazardous waste site, Students for Spatial Statistics Workshop, GEOIDE/Wilfrid Laurier U.
- Statistics and the Environment/American Statistical Association, U. of Washington, Seattle
- Syracuse Chapter of Sigma Xi
- Pennsylvania Geographical Society, annual meeting, Indiana, PA
- Third International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Quebec City, Canada
- Presidential address, 44th annual North American meetings of the Regional Science Association International, Buffalo, NY
- Annual Awards Presentation and Graduation Reception for the Department of Geography & Program in Planning, U. of Toronto
- Tinbergen Institute, Rotterdam, New Models Explaining the Development of Regions: The Case of Europe
- GIS and Spatial Modelling workshop and seminar, Department of Geography, U. of Bristol (co-funded by the UK ESRC and the NCGIA)
- Institut National de la Recherche Scientifique-URBANISATION, Séminaire-atelier sur les méthodes quantitatives d'analyse spatiale appliquées aux sciences sociales, U. du Québec, Canada
- National Center for Geographic Information and Analysis, Exploratory Spatial Data Analysis workshop, U. of California/Santa Barbara (U.S. NSF funded)
- Department of Regional Economics, Free U. of Amsterdam, Exploratory spatial data analysis (European Urban and Regional Spatial Analysis Network funded workshop)
- Department of Geography, U. of Sheffield, Remote sensing and GIS research cluster (NATO Scientific Affairs funded workshop)
- Groupe de Contact F.N.R.S. en Géographie Théorique et Quantitative, Université Catholique de Louvain, Louvain-la-Neuve
- l'Institut de Mathématiques Économiques, 26th Annual Colloquium, Université de Bourgogne, Dijon, France

- Capital District ArcInfo User's Group, New York State Museum, Albany
- Max Planck Institute for Solid State Research, Stuttgart, Interdisciplinary Colloquium on Forecasting for Systems with Chaotic Evolution (Marshall Fund funded symposium)
- National Center for Geographic Information and Analysis, U. of Maine (Maine Maritime Academy), Castine (U.S. NSF funded)
- Ecosystem Research Center, Cornell U., Advanced methods for mapping and visualizing environmental data (USEPA funded seminar series)
- plenary session, 6th Annual NYS GIS Conference, Syracuse
- National Center for Geographic Information and Analysis, U. of California/Santa Barbara (U.S. NSF funded)
- NATO Advanced Studies Institute, Hanstholm, Denmark
- NATO Advanced Studies Institute, <i Cappuccini>, Italy (2)
- NATO Advanced Studies Institute, Chateau de Bonas, France

INVITED ACADEMIC LECTURES: GEOGRAPHY DEPARTMENTS

- | | |
|--|---|
| • Boston U., 1977 | • Nanjing Normal University, 2008 |
| • UC/Santa Barbara 1983, 1993 (2); & NCGIA, | • U. of New Mexico, 2005 |
| • 1988, 1989, 1993, 1998 (position paper) | • The U. of North Carolina, 2001 |
| • U. of Bristol: 2004 | • The Ohio State U., 2001 |
| • U. of Cambridge, 1982, 2004 | • U. of Paris I, France, 1986 |
| • Catholic U. of Louvain-la-Neuve, Belgium, 1986 | • Pennsylvania State U., 1985 |
| • U. of Connecticut, 1986 | • U. of Pittsburgh, 1980 |
| • U. of Florida, 1983 | • Pontificia Universidad Catolica del Peru, 2001 |
| • U. of Geneva, 1992 | • Queen's U. (Canada), 1993 |
| • U. of Hawaii, 1990 (2) | • Ryerson Polytechnical U., 1993 (3) |
| • Indiana U., 1992 | • San Diego State U., 1999 (2) |
| • Indiana U. of Pennsylvania, 1985, 2005 (3) | • U. of Sheffield, 1982 |
| • International Institute for Aerospace Survey & Earth Sciences (Cartography), Enschede, The Netherlands, 1992 | • St. Andrews U., 2004 |
| • Kent State U., 1977 | • SUC/Geneseo, 1996 |
| • U. of Kentucky, 1986 | • SUNY/Albany, 1986 |
| • U. of Lancaster (& Mathematics Dept. & Regional Research Lab.), 1991 | • SUNY/Buffalo, 1978, 1994 |
| • Louis Pasteur U. (Strasbourg, FR), 1992 (2) | • Syracuse U., 1979, 1987 |
| • McMaster U., 1980, 1993 | • Texas A&M U., 2000 (3) |
| • U. of Maryland, 1999 (2) | • U. of Toronto, 1978, 1993, 2009 |
| • Memorial U. of Newfoundland, 1976 | • U. of Utrecht (Physical Geography), The Netherlands, 1992 |
| • U. of Miami, 2003 (2), 2005 | • Economic U. of Vienna, 1991, 2005, 2008, 2009 |
| • Michigan State U., 1999, 2008, 2009 (2) | • Virginia Polytechnical Institute & State U., 1976, 1977 |
| • U. of Minnesota, 1977, 1994 (2) | • Wilfred Laurier U., 1982 (2), 1993 |
| • U. of Montreal, 1987 | • U. of Washington, 2002 |
| | • U. of Windsor, 1976 |

INVITED ACADEMIC LECTURES: OTHER ORGANIZATIONS

- School of Remote Sensing Information Engineering, Wuhan University, 2009
- Dept. of Mathematics, U. of New Mexico, 2005
- Dept. of Mathematics, Indiana U. of Pennsylvania, 2005
- Dept. of Mathematics, U. of Alberta, 2005
- Dept. of Mathematics, U. of Miami, 2004
- (with J. Hancock) SUNY/CES&F, "Children's Environmental Health Issues" workshop, 1998
- China Data Center & School of Natural Resources, U. of Michigan, 1999
- School of Natural Resources, U. of Michigan, 2000
- Institute for Social Research, U. of Michigan, 2000
- Institute Para Limes (The Netherlands), 2008
- Dept. of Epidemiology, School of Public Health, U. of Michigan, 2000 (2)—National Cancer Institute funded
- Dept. of Statistics, The Pennsylvania State U., 1984
- Dept. of Theoretical Spatial Economics, Erasmus U., Netherlands, 1986 (3), 1992 (3)
- Department of Earth and Atmospheric Sciences, U. of Alberta, 2000 (2), 2005, 2006
- Dept. of Statistics, SUNY/Buffalo, 1986
- Dept. of Statistics, U. of Paris V, 1986 (2)
- Institute of Public Policy, George Mason U., 1999
- Colloquium in Earth Systems & GeoInformation Sciences, George Mason U., 2006
- Institute of Theoretical Physics, U. of Stuttgart, Germany, 1986
- Institute of Applied Mathematics, U. of Erlangen-Nuernberg, Germany, 1986
- Institute of Geography, U. of Groningen, Netherlands, 1986
- Dept. of Spatial Economics, Free U., Amsterdam, Netherlands, 1986
- Istituto Ricerche Economico-Sociali del Piemonte, Italy, 1987
- Dept. of Forestry, SUNY/CES&F, 1988
- Syracuse Chapter of the American Statistical Association, Syracuse U., 1989, (& Mathematics Dept.) 1999
- Royal Statistical Society/Highlands Group, St. Andrews U., 2004
- (with C. Amrhein) the Applied Geography Conference, Binghamton, New York, 1989
- U. of Illinois/Chicago (in the "Regional Science Seminar Series"), 1990
- National Center for Supercomputing Applications Users Group, U. of Illinois/Chicago, 1990
- International Geographical Union Commission on Mathematical Models Advanced Workshop on Spatial Modelling, Boston U., 1990.
- Institute of British Geographers, U. of Sheffield, 1991
- British ESRC Workshop on "Spatial Analysis for GIS," U. of Sheffield, 1991 (2)
- National Institute of Environmental Health Sciences Workshop on "Exposure assessment using highspatial resolution, hyperspectral imagery," U. of Michigan, 2000
- (with D. Armstrong) Italian National Research Council Workshop on "Spatial Statistical Methods in Archaeological and Cultural Heritage Safeguard Research," Pescara, Italy, 2000 (2)
- Interdisciplinary Consortium for Statistical Applications, Indiana U., 1992
- Dept. of General Economics, Wageningen Agricultural U., 1992
- Dept. of Economics, Universitat Pompeu Fabra, Barcelona, 1992
- Faculty of Business Economics, Katholieke Universiteit Nijmegen, The Netherlands, 1992
- Urban Planning Group, Technische Universiteit Eindhoven, The Netherlands, 1992

- Dept. of Biology, U. of Montreal, 1993
- Institute for Land Information Management, U. of Toronto, 1993
- Dept. of Biometrics, Cornell U., 1993, 1997
- NCGIA/ESRC funded symposium workshop, Bristol U., 1994
- Dept. of Statistics, Probability, & Statistical Applications, U. of Rome "La Sapienza," 1995, 2000, 2001
- Dept. of Political and Social Science, U. of Rome II, 2001
- School of Social Science, U. of Texas/Dallas, 2001, 2006 (Social Sciences Workshop)
- The Carolina Population Center, U. of North Carolina, 2001
- Dept. of Quantitative Methods and Regional Economics, Universita' Degli Studi G. d'Annunzio, Pescara, Italy, 1995, 2000
- Dept. of Statistics, Universita' Degli Studi G. d'Annunzio, Pescara, Italy, 2004
- Sigma Xi Scientific Research Society, Local Chapter Research Presentation, 1997
- Spatial Accuracy in Natural Resource: (with C. Amrhein) Williamsburg, VA, 1994; (with L. Layne & P. Doyle) Ft. Collins, CO, 1996; (with P. Fellows) Quebec, 1998; (with R. Haining & G. Ariba) Amsterdam, 2000; (with S. McMaster) Melbourne, AU, 2002; (with M. Millones & M. Vincent) Portland, ME, 2004; Lisbon, Portugal, 2006
- RSAI/Port Elizabeth Technikon Symposium in South Africa, 2000
- CASA/U. College London, 2004
- Max Planck Institute for Demographic Research/Rostock, Germany, 2004, 2005
- Dept. of Epidemiology and Public Health, U. of Miami, 2003
- Statistics Group, U. of Miami, 2003
- CESP, U. of Miami, 2003
- Geospatial Technologies and Public Health, Texas A&M University, 2007 (2)
- (with Tiefelsdorf and Chun) Department of Civil, Architectural and Environmental Engineering, U. of Texas/Austin

INVITED NON-ACADEMIC LECTURES

- | | |
|--|---|
| <ul style="list-style-type: none"> • Ministerio de Educación del Perú, 12/10-15/2000, 5/14-18/2001—British ESRC funded • USEPA Environmental Research Laboratory, Corvallis, OR, 1985, 1990 • National Agricultural Statistics Service, U.S. Dept. of Agriculture, 1999, 2001 • Rochester Region GIS Special Interest Group, • Center for Governmental Research Inc., 1990 • 1st Syracuse Regional Lead Conference, 1997 • Statistics Canada Methodology Symposium, "Issues in spatial statistics," Ottawa, 1991 | <ul style="list-style-type: none"> • Institute of Tropical Forestry (USDA Forest Service) and the Center for Energy and Environmental Research, U. of Puerto Rico, Rio Piedras, 1992 • Mathematical Sciences Section, Rijksinstituut voor Volksgezondheid en Milieuhygiene, Bilthoven, The Netherlands, 1992. • GI Science & Technology Group, Computational Physics & Engineering Division, Oak Ridge National Laboratory, 1998 • Steinbeis Transfer Centre Applied System Analysis/Stuttgart, Germany, 2005 |
|--|---|

COMPUTER DEMONSTRATIONS AND WORKSHOPS

- 2008 (with Tiefelsdorf) Spatial Filtering with the Eigenvector Approach, UTD (NSF funded)
- 2007 Research Center for Biodiversity of Academia Sinica, Taiwan, Fushan Botanical Garden Research Center
- 2005 Max Planck Institute for Demographic Research/Rostock, Germany
- 1994 Dept. of Geography, SUNY/Buffalo
- 1993 Assn. of American Geographers, 89th annual meeting, Atlanta; Dept. of Geography, UC/Santa Barbara
- 1992 Dept. of Economics, Universitat Pompeu Fabra, Barcelona, Spain; CNRS Pour l'Avancement des Recherches sur l'Interaction Spatiale, U. of Paris I (Sorbonne); "Exploratory spatial data analysis" workshop, Dept. of Regional Economics, Free U. of Amsterdam [funded by the European Urban and Regional Spatial Analysis Network]; Interdisciplinary Consortium for Statistical Applications & Dept. of Geography, Indiana U.; Association of American Geographers, 88th annual meeting, San Diego
- 1991 "Spatial Analysis for GIS," Dept. of Geography, U. of Sheffield [funded by British ESRC]; Dept. of Geography, U. of Ottawa; Cornell Theory Center's National Supercomputer Facility; Statistics Canada (2)
- 1989 (with Anselin) Association of American Geographers, 85th annual meeting, Baltimore (2); Sixth European Colloquium on Theoretical and Quantitative Geography, Chantilly, France
- 1978 Ontario Division of the Canadian Association of Geographers, Ryerson Polytechnical U.

PRESENTATIONS

- Association of American Geographers annual meeting: Milwaukee (70th), 1974; Salt Lake City (73rd), 1977; New Orleans (74th), 1978; Philadelphia (75th), 1979; Louisville (invited for the Nystrom Competition; 76th), 1980; Los Angeles (77th), 1981; San Antonio (78th), 1982; Denver (79th), 1983; Washington, D. C. (80th), 1984; Minneapolis (82nd), 1986; Phoenix (84th), 1988; San Diego (88th), 1992; San Francisco (90th), 1994 (2); Chicago (91st), 1995; Ft. Worth (93rd), 1997; Boston (94th), 1998; Honolulu (95th), 1999 (2); Pittsburgh (96th), 2000; New York (97th), 2001; Los Angeles (98th), 2002 (2); New Orleans (99th), 2003; Philadelphia (100th), 2004; Denver (101st), 2005; Chicago (102nd), 2006; San Francisco (103rd), 2007 (2); Boston (104th), 2008 (3); Las Vegas (105th), 2009
- Regional Science Association annual meeting: Chicago (25th), 1978; Los Angeles (26th), 1979; Milwaukee (27th), 1980; (with B. Holly) Montreal (28th), 1981; Pittsburgh (29th), 1982; Chicago (30th), 1983; Baltimore (34th), 1987; Toronto (35th), 1988; Santa Barbara (CA; 36th), 1989; Boston (37th), 1990; New Orleans (38th), 1991; (with A. Can) Houston (40th), 1993; Niagara Falls (41st), 1994; (with Can; with Tiefelsdorf) Cincinnati, (42nd), 1995; Washington, DC (43rd), 1996; Buffalo (44th), 1997; Santa Fe (45th), 1998; (with A. Getis; with D. Wong) Montreal (46th), 1999; Chicago (47th), 2000; Charleston (48th), 2001; San Juan, Puerto Rico (49th), 2002 (2); Philadelphia (50th), 2003; Seattle (51st), 2004 (2); Las Vegas (52nd), 2005 (2); Toronto (53rd), 2006 (2); Savannah (54th), 2007; Brooklyn (55th), 2008 (4); San Francisco, 2009
- The Spatial Econometrics Association: Cambridge, 2007; Barcelona, 2009 (2)
- Spatial Accuracy Assessment in Natural Resource and Environmental Sciences: Williamsburg, VA, 1994; Ft. Collins, CO, 1996; Quebec, 1998; Amsterdam, 2000; Melbourne, Australia, 2002; (& TIES) Portland, ME, 2004; Lisbon, Portugal, 2006; Shanghai, China, 2008

- American Statistical Association annual meeting: Toronto, 1994; Chicago, 1996; (paper presenter & co-exhibitor) Baltimore, 1999
- The Society for Environmental Geochemistry and Health: New Orleans, 2007
- International Medical Geography Symposium: Ft. Worth, TX, 2005
- GEOMED 2005: U. of Cambridge
- Spatial Ecology Workshop, U. of Miami: 2005
- P20 Exploratory Centers Program Workshop, U. of Miami: 2005
- TIMS/ORSA annual meeting: Chicago, 1993
- Sigma Xi Forum & Sigma Xi annual meeting, Minneapolis, 1999 (2)
- PRSCO: Wellington (& ANZRSA; NZ), 1997; Valdivia (Chile), 2004
- Canadian Association of Geographers: U. of Western Ontario, 1978; Queen's U., 1991; Waterloo, 1994; Montreal, 1995 (2)
- Quantitative Methods Study Group, Institute of British Geographers: U. of Sheffield, 1983
- 10th International Time Series Meeting: Toronto, 1983
- British Section, Regional Science Association: U. of Leeds, 1983
- IGU Mathematical Models Working Group: Madrid, Spain, 1986; Canberra, Australia, 1988; Princeton, NJ, 1992.
- IGU Regional Congress: Brisbane, Australia, 2006
- Canadian Regional Science Association: McMaster U., 1987
- European Colloquium on Quantitative & Theoretical Geography: Bardonecchia, Italy, (5th) 1987; Chantilly, France, (6th) 1989
- European Congress of the Regional Science Association: Louvain-la-Neuve, Belgium (32nd), 1992; Volos, Greece, 2006; Liverpool, UK, 2008; Lodz, Poland, 2009
- 3rd ICA Workshop on Geospatial Analysis and Modeling, Gävle, Sweden, 2009
- StatGIS 2009, Milos, Greece, 2009
- (with D. Johnson and K. McDade) Rocky Mountain Section of the S.E.G. H., Salt Lake City, 1994
- East Lakes Division of the Association of American Geographers: Kent State U., 1971; U. of Pittsburgh, 1973; Edinboro U. of Pennsylvania, 1974; Brock U., 1975; U. of Michigan, 1976; U. of Western Ontario, 1980
- Middle States Division of the Association of American Geographers: Rochester, 1981; Montclair State College, 1982; West Point, 1983; (with F. Csillag; Dave Smith) Syracuse U., 1992 (2)
- Pittsburgh Modelling and Simulation Conference: U. of Pittsburgh (14th), 1983
- Pennsylvania Academy of Sciences: Carlow College, Pittsburgh, 1971; Lafayette College, 1972
- Pennsylvania Council for Geographic Education: Indiana U. of Pennsylvania, 1971
- Ontario Division of the Canadian Association of Geographers: Ryerson Polytechnical U., 1978
- ISOLDE 81, Skodsborg, Denmark, 1981
- CLAG, SUNY/Buffalo, 1981
- "Spatial Distributions and Pattern Analysis" Colloquium: SUNY/Buffalo, 1981
- International Geographic Information Systems Symposium: The Research Agenda, Crystal City, VA, 1987
- Western Regional Science Association: San Diego, 1989
- International Workshop on Spatial Econometrics and Statistics: Rome, 2006 (2)
- Jean Paelinck Seminar on Spatial Econometrics: Zaragoza, Spain (2nd), 2006
- American Society of Agronomy annual meeting: (with D. Long, S. DeGloria, G. Carlson, and G. Nielsen) Denver, 1991
- Northeast Regional Science Association: (with L. Layne and A. Sone) Binghamton, NY, 1996

- American Society of Tropical Medicine and Hygiene: New Orleans, 2008

Conference Paper Discussant

- Session in Honor of Walter Isard, "Distance inputs and spatial markets," by M. Beckmann, paper presented to the Regional Science Association, Toronto, 1988
- Regional Science Association annual meeting: Baltimore, 1987; Toronto, 1988; Santa Barbara (CA), 1989; New Orleans, 1991; Houston, 1993; Niagara Falls, Canada, 1994; Santa Fe, 1998; Montreal, 1999; Chicago, 2000; Charleston, 2001; San Juan, PR, 2002; Seattle, 2004; Las Vegas, 2005; Toronto, 2006
- Association of American Geographers annual meeting: Phoenix, 1988; Baltimore, 1989 (2)
- 1992 Symposium of the International Geographical Union Commission on Mathematical Models: Princeton U. (2)
- European Congress of the Regional Science Association: Louvain-la-Neuve, Belgium, 1992
- PRSCO/ANZRSA Conference presentation, Wellington, NZ, 1997
- International Workshop on Spatial Econometrics and Statistics: Rome, 2006
- World Conference of the Spatial Econometrics Association: 2009
- moderator for Accuracy 2000 session, Amsterdam

Monographs (2)

- 1994 (with J. Newman) *Eliminating Hunger in Africa: Technical and Human Perspectives on Food Allocation*, Maxwell School of Citizenship and Public Affairs, Syracuse University—reproduction permission given to Copyright Clearing House in 2000.
- 1989 *Simulating K=3 Christaller Central Place Structures: An Algorithm Using a Constant Elasticity of Substitution Consumption Function*, Ann Arbor, MI: Institute of Mathematical Geography.

Computer Software Design (5)

- Spatial autocorrelation simulation game; review in *The Professional Geographer*, 39 (1987), 234-235; described in the AAG Microcomputer Specialty Group newsletter, February, 1989.
- Simulating central place structures; review in *The Professional Geographer*, 42 (1990), 246-247 & *Mathematical Review*; described in the AAG Microcomputer Specialty Group newsletter, October, 1990.
- "Spatial regression analysis on the PC: spatial statistics using MINITAB," *Discussion Paper #1*, Institute of Mathematical Geography, 1989; review in *The Professional Geographer*, 42 (1990), 499-500; described in the AAG Microcomputer Specialty Group newsletter, February, 1991.
- Spatial regression analysis on the PC: spatial statistics using SAS, described in the AAG Microcomputer Specialty Group newsletter, February, 1992.
- EXPLORHO, Version 2.0.

Book and Computer Software Reviews (25)

- *Technometrics*
1988 *Statistical Techniques in Geographical Analysis*, 30: 348-349.
- *Geographical Analysis*
1993 *Statistics for Spatial Data*, 25: 271-275.
1986 *Spatial Data Analysis by Example*, 18: 372-373.

- *Annals, Association of American Geographers*
1979 *Specification and Estimation Problems in Models of Spatial Dependence*, 69: 497-498.
2004 *The Geographical Dimensions of Terrorism*, 94: 998-1001.
- *J. of Regional Science*
1993 *Spatial Tessellations*, 33: 564-567.
- *Environment and Planning*
1997 *Interactive Spatial Data Analysis*, 29A: 747-752 (review essay)
1993 *Applications of the Expansion Method*, 20B: 370-371.
1983 *European Progress in Spatial Analysis*, 15A: 135-136.
- *International J. of Geographical Information Sciences*
2004 *Spatial Statistics Through Applications*, 18: 207-208.
- *Economic Geography*
1989 *Spatial Econometrics*, 65: 160-162.
1988 *Geographical Systems and Systems of Geography*, 64: 396-400.
- *The Professional Geographer*
1987 *Statistical Methods for Geographers*, 39: 244-245.
1982 *Spatial Statistics*, 34: 231-232.
1980 *Spatial Dynamics and Optimal Space-time Development*, 32: 488-489.
1986 *PC-MATLAB*, 38: 427-428.
- *Geographical Review*
1989 *Metropolis*, 79: 479-481.
- *Progress in Human Geography*
1983 *Spatial Processes*, 7: 149-150.
- *Annals of Regional Science*
1988 *Spatial Cycles*, 22 (#2): 119-120.
1983 *Spatial Diffusion*, 17 (#1): 125-126.
1981 *Spatial Systems*, 15 (#3): 118-119.
1979 *Resources, Tariffs, and Trade: Ontario's State*, 13 (#2): 159-161.
1978 *Quantitative and Analytical Studies in East-West Economic Relations*, 12 (2): 128-130.
- *J. of Geography*
1980 *Statistical Concepts in Geography*, 79: 273.
- *The Operational Geographer*
1993 *RESAMPLE*, 11 (3): 39-40.

- discovered and documented 2 software bugs in initial MINITAB 11.0 release, 1997
- discovered and documented 1 software bug in initial SAS 6.12 release, 1997

Contributions to Professional Reports and Publications

- 1980-Assn. of American Geographers, Quantitative Methods and Mathematical Models Specialty Group's advisory memorandum to the Geography & Regional Science Program, National Science Foundation
- 1985-Geography and Regional Science Program, National Science Foundation
- "Geographers," by Chronicle Guidance Publications, January 1997 release
- "White paper on research-based education," as representative of Syracuse U. at UCGIS meetings, Bar Harbor, ME, 1997
- listing of National Academy of Sciences AAG members in Guide to Programs in Geography/AAG Handbook and Directory of Geographers 1997-1998

- *external assessment for establishing the Center for Geographic Analysis, Harvard University*

Papers, Book Chapters, and Research Projects Reviewed

- Geographical Analysis: 1977-80 (5) 1981-90 (34) 1992-99 (6) 2000-05 (11) 2006 (2) 2007 (4)
- Annals, Association of American Geographers: 1981-90 (20) 1993-99 (3) 2000-04 (4) 2006 (2) 2007 2008
- J. of Regional Science: 1987-89 (5) 1992-96 (3) 2002 2007 (2)
- Economic Geography: 1982-87 (4) 1992 1993
- Environment & Planning A: 1988-90 (5) 1992-99 (7) 2000-05 (10) 2006 (2) 2007 2008
- Environment & Planning B: 2000 (2) 2004 2005 2009 (2)
- Papers in Regional Science: 1993-99 (5) 2000-05 (9) 2006 2007
- J. of the American Statistical Association: 2001 2009
- Communications in Statistics: 1994 1996
- Papers & Proceedings, Regional Science Association: 1984 1986-90 (2)
- Regional Science & Urban Economics: 1991 2006
- International J. of Geographical Information Systems/Science: 1988-98 (10) 2000 (2) 2003 2004
- Cartography and Geographic Information Systems: 1993
- Letters in Spatial and Resource Sciences: 2007 2008
- Geographical & Environmental Modelling: 1997 1999
- Computers, Environment and Urban Systems: 1997 1998 (2) 1999 2000 2004 (2) 2007 (2) 2008
- (J. of) Geographical Systems: 1993-99 (5) 2000-05 (9) 2006 (2) 2007 (4) 2008 (2) 2009 (3)
- J. of Statistical Computation and Simulation: 1992 2005
- The Statistician: 1993
- American Economic Review: 1991
- American J. of Political Science: 2006 (2)
- Ecology: 2004 2007
- Science: 1980
- J. of Applied Ecology: 2007
- Ecological Modeling: 2005
- Ecography: 2008
- EcoTrack: 2009
- Annals of Operations Research: 2002 (2)
- Environmental and Ecological Statistics: 2007 2008
- Demography: 1990
- Photogrammetric Engineering and Remote Sensing: 1995
- International J. of Remote Sensing: 2006
- Linear Algebra and Its Applications: 1996 1997
- Computational and Applied Mathematics: 2009
- J. of Historical Geography: 2001 2005
- Sociological Methodology: 1999
- URISA J.: 2000 (2) 2001 2003 2005
- ESAIM: Probability and Statistics: 1998
- Annals of Regional Science: 1990 1991 1994 1998 (2)
- Environment & Planning D: Government & Policy: 1984
- Growth & Change: 1987 1998 (2) 2002 2006 2007
- The American Naturalist: 1980

- Computational Statistics & Data Analysis: 2001 2008 2009
- Urban Geography: 1980 1985 1988 (2) 1994 (2) 1995 2000 2002 2003 2006 (2) 2007 (2)
- Professional Geographer: 1979-80 (2) 1982-89 (5) 1992 2005 2007
- International Regional Science Review: 1986 1996 2005
- The Canadian Geographer: 1985 1989
- Canadian J. of Regional Science: 1998
- European J. of Operations Research: 1981 (2)
- J. of Transport Geography: 1999
- Computers & Geosciences: 1995 2005 (2)
- Sistemi Urbani: 1992 (2)
- Social Science Research: 1981
- Acta Tropica: 2009
- Geoderma: 1991 1997
- Transportation Review Board: 2000
- Risk Analysis: 2006 2007
- J. of Stochastic Environmental Research & Risk Assessment: 2000 2006 (7) 2007 2009 (2)
- International J. of Health Geographics: 2004 2006 2007
- Encyclopedia of Social Measurement: 2002
- Handbook of Agricultural Statistics: 1998
- Ontario Geography: 1985
- The Operational Geographer: 1989 1992 (6)
- Geography Research Forum: 1987
- Statistical Methodology: 2006
- Social Networks: 2007 2008
- Empirical Economics: 2006 2007
- American J. of Preventive Medicine: 2004
- American J. of Tropical Medicine and Hygiene: 2006 (2)
- Social Science and Medicine: 2004
- J. of Geographic Information Science
- J. of Public Health Management: 2001
- J. of Health and Place: 2004 2006
- J. of Latin American Studies: 2004
- J. of Latin American Geography: 2006
- Bridging Scales in Soil Physics (edited volume): 2002
- IMaGe: 1987
- EPA pre-journal submission: 2005
- CLAG Yearbook: 1982 (12), 1994
- 3rd & 5th & 8th & 9th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences conference: 1997 (8) 2001 (8) 2008 (5) 2009 (5)
- Complexity, Evolution and Learning: in Search of Simplicity: 2008
- Advances in Spatial Science: 2008
- Spatial Analysis Handbook: 2008
- StatGIS: 2009 (2)
- National Science Foundation: 1980-90 (15) 1991-1999 (32) 2000-2009 (115)
- NATO Scientific Affairs Advisory Board: 1982-90 (4) 1991
- Marie Currie Individual Fellowship: 2005

- Rockefeller Foundation: 1996
- SSHRC of Canada: 1987 1997 2006
- SSERC of Canada: 2005
- National Geographic: 2004 2006 2007
- USEPA: 1994 (17)
- USEPA Technical Report series: 1990 1991
- UK Economic and Social Research Council: 1993
- Cornell Theory Center (NSF supercomputer center): 1994
- MCUS: 2004 (4)

Book Manuscripts/New J. Proposals Reviewed

- Martinus Nijhoff, 1987, Advanced Studies in Theoretical and Applied Econometrics Series
- The Gilford Press, endorsement of G. Barber (1988), *Elementary Statistics for Geographers*.
- Pergamon Press, 1989
- Oxford University Press, 1991
- Prentice Hall, 1993
- Wiley, 1994, 2004
- Springer-Verlag, 1999
- Duxbury, 1999
- Arnold, 2002
- CRC Press, 2008 2009

Professional and University Citizenship

Offices Held

- vice president (1998-99), president (1999-2000), past president (2000-01), Syracuse Chapter of Sigma Xi
- elected chairman of the MM&QM Specialty Group, AAG (1987-1988)
- elected Board Member of the MM&QM Specialty Group, AAG (1989-1991)
- elected Board Member of the Microcomputer Specialty Group, AAG (1993-1996)
- elected Board Member, Syracuse Chapter of the American Statistical Assn., (1991-92; 1993-95)
- Secretary-treasurer, Syracuse Chapter of the American Statistical Association, (2000-present)

Conference Session Chairperson

- Association of American Geographers annual meeting: Los Angeles, 1981; Toronto, 1990; Los Angeles, 2002
- Regional Science Association annual meeting: Toronto, 1988; Santa Barbara (CA), 1989; New Orleans, 1991; Niagara Falls, Canada, 1994; Cincinnati, 1995; Boston, 1998
- Spatial Econometrics Association: Cambridge, 2007
- Quantitative Methods Study Group, Institute of British Geographers meeting: U. of Sheffield, 1983
- Western Regional Science Association: San Diego, 1989
- Sixth European Colloquium on Quantitative and Theoretical Geography, Chantilly, France, 1989
- 1992 International Geographical Union Commission on Mathematical Models Symposium, Princeton U.
- European Congress of the Regional Science Association, Louvain-la-Neuve, Belgium, 1992
- International Workshop on Spatial Econometrics and Statistics: Rome, 2006

- World Conference of the Spatial Econometrics Association: 2009
- Jean Paelinck Seminar on Spatial Econometrics: Zaragoza, Spain, 2006
- NATO ARW, Amsterdam, 1983
- "Spatial Distributions and Pattern Analysis," Session 2, Dept. of Geography, SUNY/Buffalo, 1981
- "Complexity, Evolution and Learning," Institute Para Limes, Barchem, The Netherlands, 2007

Meeting Organization Activities

- Program Committee for the 35th Regional Science Association, Toronto, 1988
- NATO Advanced Studies Institute: Chateau de Bonas, France, 1980; San Miniato, Italy, 1982; Hanstholm, Denmark, 1985
- Mathematical Models & Quantitative Methods Specialty Group, Association. of American Geographers: San Antonio, 1982; (with D. Mark) West Point, 1983; Washington, D. C., 1984; (with L. Anselin) Phoenix, 1988
- Association of American Geographers annual meeting: Milwaukee, 1974 (see Vol. 7, 1975, A. A. G. Proceedings, pp. 297-298); Baltimore, 1989 (2; 1 with Grant Thrall); San Diego, 1992
- North American Regional Science Association annual meeting: (with L. Anselin) New Orleans, 1991 (2); Niagara Falls, Canada, 1994; Cincinnati, 1995
- Dept. of Geography Colloquium entitled "Spatial Distributions and Pattern Analysis" under the joint auspices of NATO Scientific Affairs Division, SUNY/Buffalo, AAG MM&QMSG, and IGU: WGSAMM, 1981.
- Syracuse U. Department of Geography Symposium, 1989; (with Jim Newman) 1991.
- (with M. Monmonier, S. DeGloria, L. Herrington, R. McMaster) "NYSPGIA Minnowbrook workshop," Minnowbrook Conference Center (Syracuse U.), Blue Mountain Lake, 1990
- Canadian Association of Geographers: Montreal, 1995
- (with R. Tata) CLAG, SUNY/Buffalo, 1981
- (with J. Pipkin, C. Willmott) Middle States Division, Assn. of Am. Geographers, Rutgers U., 1979

School Service

- GEOG/GIS Program Committee, 2005-present
- Faculty Advisory Committee (FAC), ex officio, 2005-09; Dean's appointment, 2009-
- GISC Associate Unit Head, 2007-present
- GIS Program Director Search Committee, 2006/7
- Chair of Search Committee for new GISC Program Head, 2007 & 2008
- Graduate Programs Advisory Committee
- Panel member of the JSSR "How to publish" roundtable/workshop, 2007, 2008
- Hosted colloquium speaker, 2007 (1), 2008 (2), 2009 (2)
- Hosted workshop, 2009
- Hosted visiting Chinese scholar for 1 year: 2009 2010

Courses taught at U. of Texas @ Dallas

- GISC 7387 Research Design in GIS
- GISC 7361 Spatial Statistics
- GEOG 4380/GISC 6380 Spatial Concepts and Organization
- ECO 6311/GISC 6311 Statistics for Economists/Mathematical Statistics for Geospatial Science
- GISC 6389 Geographic Information Sciences Master Project

Courses taught at U. of Miami

- Problems in Geography, Advanced Research Design in Geography, Advanced Spatial Statistics, Master's Thesis

Courses taught at Syracuse U.

- Economic Geography of North America, Introduction to Quantitative Methods in Geography, Senior Seminar in Geography (required of all majors), (with F. Csillag) Errors in spatial databases (at request of Cornell U. graduate students), (with R. Francis) Industrial Restructuring in North America, Industrial Location Theory, Multivariate Techniques in Geography, Readings in Multivariate Statistical Applications in Geography, Environmental Monitoring, Research Design in Geography, Spatial Statistics, Independent Study and Reading courses
- Freshman Forum (CAS), Quantitative Methods for the Social Sciences (MAX)
- Introduction to Statistics, Computing with SAS, Statistical Consulting, Independent Study (STT)
- ARC/INFO Independent Study students' Departmental colloquium entitled "A GIS and spatial analysis of blood lead levels in Syracuse" (outcome of GEO 490 Independent Study); map display from study hangs in the SU College of Arts & Sciences Visitors Center
- mentored (in conjunction with the SU Future Professoriate Program) Feng (Spring 95) in GEO 383, Anderson (Fall 95) in GEO 311, Layne (Spring 96, 97) in GEO 383

Courses taught at SUNY/Buffalo

- Introduction to Human Geography, Introductory Quantitative Methods, Multivariate Analysis for Geographers, Urban Geography, Industrial Geography

University Service

- committee member for promotion to full professor case, 2006/7
- annual Compliance review, 2005-present
- dissertation defense chair, 2006 (Geosciences), 2008 (Literary Studies and Historical Studies)
- Information Resources Security, Planning, and Policy Committee, 2007/09
- Intellectual Property Committee, 2009
- invited "field tester" for new class on campus safety and violence prevention, 2008
PI for UT System Graduate Programs Initiative pre-proposal, and invited full-proposal Presentation at the IIE Research & New Venture Showcase: Geospatial Sciences, 2008

Community

- leader, Green Acres Cub Scout Pack, 1980-81
- helped a South Vietnam refugee family resettle to Syracuse
- co-chaperoned *Latin Day* at Syracuse U. for local high school students
- member of the Syracuse Regional Lead Task Force, 1996-2003
- science judge at the MOST Science Fair, junior division, Onondaga Community College, 2000-01