Eric **Delmelle**

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Epidemiology, Uncertainty, GIS

Education

08/2021- 09/2022	**MSc. in Biostatistics**, *Erasmus University Rotterdam*, Netherlands *Role of Geography in Survival Outcomes for Children with Birth Defects.*
09/2001- 06/2005	**Ph.D. in Geography**, *University at Buffalo (SUNY)*, U.S.A. *Optimization of second-phase spatial sampling using auxiliary information*
09/2003- 05/2004	**M.S. in Industrial Engineering**, *University at Buffalo (SUNY)*, U.S.A. Concentration : Operations Research
01/2000- 09/2001	**M.A. in Geography**, *University at Buffalo (SUNY)*, U.S.A. Concentration : GIS/Cartography
09/1995- 09/1999	**B.S. in Geography**, *Vrije Universiteit Brussels*, Belgium Concentration : GIS/Transportation

Professional Experience

08/2015- present	**Associate professor**, *Geography and Earth Sciences Department*, UNC-Charlotte
08/2008- 07/2015	**Assistant professor**, *Geography and Earth Sciences Department*, UNC-Charlotte
08/2005- 08/2008	**Assistant professor**, *Geography Department*, University of Idaho
09/2019-present	**Docent**, *Geography Department*, University of Eastern Finland (UEF), Finland.
2011,'15,'17,'19	**Visiting Scholar**, *Center for Operations Research and Econometrics*, LLN, Belgium
Summer 2012	**Visiting Scholar**, *Department of Geoinformatics*, Salzburg, Austria
09/2000- 06/2005	**Research assistant**, *NCGIA*, University at Buffalo (SUNY)

I. RESEARCH ACTIVITY

Edited books

In Progress	B3. Desjardins, M. and <u>E.M. Delmelle</u> (Eds). **Spatial Analysis of Longitudinal Health Data** - Springer.
2020	B2. Lu. Y and <u>E.M. Delmelle</u> (Eds). **Geospatial Technologies for Urban Health** - Springer.
2016	B1. Kanaroglou P.; <u>Delmelle E.M.</u> and A. Paez (Eds). **Spatial Analysis in Health Geography** - Ashgate.

Peer-reviewed Articles

2023	P. 75. Casas, I.; Desjardins, M.R. and <u>E.M. Delmelle</u>. **Knowledge, Attitudes, and Practices (KAP) towards Dengue Fever in an Urban Environment of Colombia** *Geographical Review.*
	P. 74. Lan, Y. and <u>E.M. Delmelle</u>. **Space-Time Cluster Detection Techniques for Infectious Diseases: A Systematic Review**. *Spatial and Spatio-temporal Epidemiology*

2022   P. 73. Ferreira, R.V.; Martines, M.R.; Toppa , R.H.; Assuncao, L. M.; Desjardins, M.R. and <u>E.M. Delmelle</u>. **Utilizing prospective space-time scan statistics to discover the dynamics of coronavirus disease 2019 clusters in the State of Sao Paulo, Brazil.** *Journal of the Brazilian Society of Tropical Medicine*, vol. 55.

P. 72. Chen, X.; Ye, X; Widener, M.; <u>Delmelle, E.M.</u>; Kwan, M.P.; Shannon, J.;Racine, E. Adams, A.; Liang, L. and P. Jia. **A systematic review of the modifiable areal unit problem (MAUP) in community food environmental research**. *Urban Informatics*, vol. 1(1): 22

P. 71. Adeyemi, O.; Arif, A.; Paul, R.; DiMaggio, C. and <u>E.M. Delmelle</u>. **The association of crash response times and deaths at the crash scene: A cross sectional analysis using the 2019 National Emergency Medical Service Information System**. *Journal of Rural Health*, 38(4): 1011-1024.

P. 70. Adeyemi, O.; Arif, A.; Paul, R.; DiMaggio, C. and <u>E.M. Delmelle</u>. **An assessment of the nonfatal crash risks associated with substance use during rush and non-rush hour periods in the United States**, *Journal of Drug and Alcohol Dependence*, vol. 234.

P. 69. <u>Delmelle, E. M.</u>; Desjardins, M. R.; Jung, P.; Owusu, C.; Lan, Y.; Hohl, A. and C. Dony. **Uncertainty in geospatial health: challenges and opportunities ahead**, *Annals of epidemiology*, 65, 15-30.

P. 68. Hohl, A; Tang, W.; Casas, I.; Shi, X. and <u>E. Delmelle</u>. **Detecting space-time patterns of disease risk under inhomogeneous background population**, *Geographical Systems*, vol. 1:29

2021   P. 67. Lan Y.; Desjardins M.R.; Hohl A. and <u>E.M. Delmelle</u>. **Geovisualization of COVID19: State of-the-Art and Opportunities**. *Cartographica*, 56(1), 2-13.

P. 66. Lan, Y.; Delmelle, E. and E.M. Delmelle. **NDS: an interactive, web-based system to visualize urban neighborhood dynamics in United States**, *Journal of Maps*, 17(1), 62-70.

P. 65. Mundis, S. J.; Hamerlinck, G.; Stone, E. K.; Whiteman, A.; <u>Delmelle, E.</u>; T. Rapp, T. and S. Ryan. **Examining Wing Length - Abundance Relationships and Pyrethroid Resistance Mutations among Aedes albopictus in a Rapidly Growing Urban Area with Implications for Mosquito Surveillance and Control**, *International Journal of Environmental Research and Public Health*, 18(18), 9443

P. 64. Bayat, B.; Nasseri, M. and <u>E. Delmelle</u>. **Uncertainty-based rainfall network design using a fuzzy spatial interpolation method.** *Applied Soft Computing*, 106, 107296.

P. 63. Kotavaara, O.; Nivala, A.; Lankila, T.; Huotari, T.; <u>Delmelle, E.</u> and H. Antikainen. **Geographical accessibility to primary health care in Finland A Grid-based multimodal assessment**, *Applied Geography*, 136, 102583.

P. 62. Eberth, J. M., Kramer, M. R.; <u>Delmelle, E. M.</u>; and R. S. Kirby **What is the place for space in epidemiology?**, *Annals of Epidemiology*, 64, 41-46.

P. 61. Pyykonen, M.; Linna, M.; Tykkylainen, M.; <u>Delmelle, E.</u> and T. Laatikainen. **Patient-specific and healthcare real-world costs of atrial fibrillation in individuals treated with direct oral anticoagulant agents or warfarin**, *BMC health services research*, 21(1), 1-15.

P. 60. Martines M.R.; Ferreira R.V.; Toppa R.H.; Assunção L. M.; Desjardins M.R. and <u>E.M. Delmelle</u>. **Detecting space-time clusters of COVID-19 in Brazil: mortality, inequality, socioeconomic vulnerability, and the relative risk**

of the disease in Brazilian municipalities, *Geographical Systems*, 23(1), 7-36.

P. 59. Owusu C.; Silverman G.; Vinson D.S.; Paul R.; Baker K.M. and <u>E.M. Delmelle</u>. **Predicting coliform presence in private wells as a function of well characteristics, parcel size and leachfield soil rating**. *Science of the Total Environment*, 758, 143701.

P. 58. Owusu C.; Silverman G.; Bobyarchick A.; Paul R.; Vinson D. and <u>E.M. Delmelle</u>. **A spatial autologistic model to predict the presence of arsenic in private wells across Gaston County, NC using geology, well-depth, and pH**. *Exposure and Health* 13(2), 195-206.

2020

P. 57. Whiteman A.; Loaiza J.; Yee D.; Poh K.; Watkins A.; Lucas K.; Rapp T.; Kline L.; Ahmed A.; Chen S. and <u>E.M. Delmelle</u>. **Do socioeconomic factors drive Aedes mosquito vectors and their arboviral diseases? A systematic review of dengue, chikungunya, yellow fever, and Zika Virus**. *One Health*: 100188.

P. 56. Hohl A.; <u>Delmelle E.M</u>; Desjardins,M. and Y. Lan. **Daily surveillance of COVID-19 using the prospective space-time scan statistic in the United States**. *Spatial & Spatio-temporal Epidemiology*, 34, 100354.

P. 55. Hohl A.; <u>Delmelle E.M</u> and M. Desjardins. **Rapid detection of COVID-19 clusters in the United States using a prospective space-time scan statistic: an update**. *SIG Spatial*, 12(1), p. 27-33.

P. 54. Desjardins, M.; Eastin, M.; Paul, R.; Casas, I. and <u>E.M. Delmelle</u>. **Space-time conditional autoregressive modeling to estimate neighborhood-level risks for dengue fever in Cali, Colombia**. *American Journal of Tropical Medicine & Hygiene*, 103(5), 2040.

P. 53. Y. Lan; Tang, W.; Dye, S. and <u>E.M. Delmelle</u>. **A Web-based Spatial Decision Support System for Monitoring the Risk of Water Contamination in Private Wells**. *Annals of GIS*, 26(3), 293-309.

P. 52. Owusu C.; Silverman G.; Tang W.; Dye S. and <u>E.M. Delmelle</u>. **A multi-stage geocoding approach for the development of a private wells database in Gaston. County, North Carolina**. *Journal of Environmental Health*, 83(4), 8-16.

P. 51. Desjardins, M.; Casas, I.; Maria Victoria, A.; Carbonell, D.; Dávalos, D. and <u>E.M. Delmelle</u>. **Knowledge, Attitudes, and Practices Regarding Dengue Chikungunya and Zika in Cali, Colombia**. *Health and Place*, 63, 102339.

P. 50. Desjardins,M. ; Hohl, A. and <u>E.M. Delmelle</u>. **Rapid surveillance of COVID-19 in the United States using a prospective space-time scan statistic: detecting and evaluating emerging clusters**. *Applied Geography*, 118, 102202.

P. 49. Arif, A.; Paul, R.; Owusu, C.; Adeyemi, O. and <u>E.M. Delmelle</u>. **Estimating the the Prevalence and Spatial Clusters of Coal Workers' Pneumoniocosis Cases Using Medicare Claims Data, 2011-2014**, *American Journal of Industrial Medicine*, 63(6), 478-483.

2019

P. 48. Owusu C.; Desjardins M.; Baker K. and <u>E.M. Delmelle</u>. **Residential Mobility Impacts Relative Risk Estimates of Space-time Clusters of Chlamydia in Kalamazoo County, Michigan**, *Geospatial Health*, 14(2).

P. 47. Dony, C. C.; Nara, A.; Amatulli, G.; <u>Delmelle E.M.</u>; Tateosian, L. Rey, S. & Sinton, D. **Computational thinking in US college geography: An initial education research agenda**. *Research in Geographic Education*, 21, 39-54.

P. 46. Chen S.; Whiteman A.; Li A.; Rapp T., <u>Delmelle E.M.</u>; Chen G.; Brown C.L.; Robinson P.; Coffman M.J.; Janies D. and M. Dulin. **An Operational Machine Learning**

Approach to Predict Mosquito Abundance Based on Socioeconomic and Landscape Patterns, *Landscape Ecology*, 34(6), 1295-1311.

P. 45. Casas I. and <u>E.M. Delmelle</u>. **Landscapes of Health Care Utilization during a Dengue Fever Outbreak in an Urban Environment of Colombia**. *Environmental Monitoring and Assessment*, 191(2), 1-15.

P. 44. Deng J.; Desjardins M. and <u>E.M. Delmelle</u>. **An Interactive Platform for the Analysis of Landscape Patterns: A Cloud-based Parallel Approach**. *Annals of GIS*, 25(2), 99-111.

P. 43. <u>Delmelle E. M.</u>; Marsh D. M.; Dony C. and P.L. Delamater. **Travel Impedance Agreement Among Online Road Network Data Providers**. *International Journal of Geographical Information Science*, 1-19.

2018

P. 42. Whiteman A.; <u>Delmelle E.M.</u>; Rapp T.; Chen S.; Chen G. and M. Dulin. **A Novel Sampling Method to Measure Socioeconomic Drivers of Aedes albopictus Distribution in Mecklenburg County, North Carolina**. *International Journal of Environmental Research and Public Health*, 15(10), 2179.

P. 41. Major E.; Delmelle E. C. and <u>E.M. Delmelle</u>. **SNAPScapes: Using Geodemographic Segmentation to Classify the Food Access Landscape**. *Urban Science*, vol. 2 :71.

P. 40. Desjardins M. R.; Hohl A.; Griffith A. and <u>E.M. Delmelle</u>. **A space-time parallel framework for fine-scale visualization of pollen levels across the Eastern. United States.** *Cartography and Geographic Information Science*, 1-13.

P. 39. Desjardins M. R.; Whiteman A.; Casas I and <u>E.M. Delmelle</u>. **Space-time clusters and co-occurrence of chikungunya and dengue fever in Colombia from 2015 to 2016**. *Acta Tropica*, vol. 185: 77-85.

P. 38. Racine E.; <u>Delmelle E.M</u>; Major E. and C. Solomon **Accessibility Landscapes of SNAP-Authorized Stores**, *Journal of the Academy of Nutrition and Dietetics*, 118: 836-848.

P. 37. Hohl A.; Griffith A.; Eppes M. C. and <u>E.M. Delmelle</u>. **Computationally Enabled 4D Visualizations Facilitate the Detection of Rock Fracture Patterns from Acoustic Emissions**. *Rock Mechanics and Rock Engineering*, vol. 51: 2733-2746.

2017

P. 36. <u>Delmelle E.M</u>; Desjardins M. and J. Deng. **Designing spatially cohesive nature reserves with backup coverage**, *International Journal of Geographical Information Science*, vol. 31: 2505-2523.

P. 35. Casas I.; <u>Delmelle E.M.</u> and E.C. Delmelle.**Potential versus revealed access to care during a dengue fever outbreak**, *Journal of Transport & Health*, vol. 4: 18-29.

P. 34. Kirby R.S.; <u>Delmelle E.M.</u> and J.M. Eberth. **Advances in spatial epidemiology and geographic information systems**, *Annals of Epidemiology*, vol. 27(1): 1-9.

2016

P. 33. Eppes M.C; Magi B.; Hallet B.; <u>Delmelle E.M</u>; Mackenzie-Helnwein P. Warren K and S Swami. **Deciphering the role of solar-induced thermal stresses in rock weathering**, *Geological Society of America Bulletin*, vol. 128: 1315-1338.

P. 32. Hohl A.; <u>Delmelle E.M.</u>; Tang W. and I. Casas. **Accelerating the discovery of space-time patterns of infectious diseases using parallel computing** *Spatial and Spatio-temporal Epidemiology*, vol. 19: 10-20.

P. 31. <u>Delmelle E.M.</u>; Hagenlocher M.; Kienberger S. and I. Casas. **A spatial model of socioeconomic and environmental determinants of dengue fever in Cali, Colombia** *Acta Tropica*, vol. 164: 169-176.

P. 30. Radcliff E.; <u>Delmelle E.M.</u>; Kirby R.S.; Laditka S.B.; Correia J. and C.H. Cassell. **Factors Associated with Travel Time and Distance to Access Hospital Care Among Infants with Spina Bifida**, *Maternal and Child Health Journal*, vol. 20(1): 205-217.

P. 29. Hohl; A.; <u>Delmelle E.M.</u> and W. Tang. **Spatiotemporal domain decomposition for massive parallel computation of space-time kernel density**, *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, vol. 2: 4-7.

P. 28. Casas I.; <u>Delmelle E.M.</u> and J. Yates. **Identifying key spatial regional properties in the defense of critical infrastructure using network interdiction, spatial analysis and GIS**, *Geojournal.* vol 81(1): 37-53.

2015

P. 27. Dony. C; <u>Delmelle E.M.</u> and E.C. Delmelle. **Re-conceptualizing accessibility to parks in multi-modal cities: A Variable-width Floating Catchment Area (VFCA) method**, *Landscape and Urban Planning*, vol. 143: 90-99.

P. 26. Zhou Y.; Dao THD.; Thill J.-C. and <u>E.M. Delmelle</u>. **Enhanced 3D visualization techniques in support of indoor location planning**, *Computers, Environment and Urban Systems*, vol. 50: 15-29.

2014

P. 25. <u>Delmelle E.M.</u>; Zhu. H; Tang W. and I. Casas. **A Web-based geospatial toolkit for the monitoring of Dengue Fever**, *Applied Geography*, vol. 52: 144-152.

P. 24. Eastin M.; <u>Delmelle E.M.</u>, Casas I, Wexler J. and C. Self. **Intra-and interseasonal autoregressive prediction of dengue outbreaks using local weather and regional climate for a tropical environment in Colombia**. *American Journal of Tropical Hygiene and Medicine*, vol. 91(3): 598-610.

P. 23. Sagl, G., <u>Delmelle E.M.</u> and E.C. Delmelle. **Mapping collective human activity in an urban environment based on mobile phone data**. *Cartography and Geographic Information Science*, vol. 41(3): 272-285.

P. 22. <u>Delmelle E.M.</u>; D. Peeters; I. Thomas and J.-C. Thill. **A multi-period capacitated school location problem with modular equipment and closest assignment considerations**, *Journal of Geographical Systems*: vol. 16(3): 263-286.

P. 21.<u>Delmelle E.M.</u>; Dony C.; Casas I.; Jia M. and W. Tang. **Visualizing the impact of space-time uncertainties on dengue fever patterns**, *International Journal of Geographical Information Science*, vol. 8(5): 1107-1127.

2013

P. 20. Hagenlocher M.; Kienberger S.; <u>Delmelle E.M.</u> and I. Casas. **A Web-GIS tool for visualizing and exploring socioeconomic vulnerability to Dengue Fever in Cali, Colombia**, *Geospatial Health*, vol. 8: 313-316.

P. 19. Hagenlocher M., Kienberger S., Casas I. and <u>E.M. Delmelle</u>. **Assessing socioeconomic vulnerability to dengue fever in Cali, Colombia: statistical vs. expert-based modeling**, *International Journal of Health Geographics*, vol. 12.

P. 18. <u>Delmelle E.M.</u>, Cassell H.; Dony C.; Radcliff E.; Tanner J.-P.; Siffel C. and R. Kirby. **Modeling Travel Impedance to Medical Care for Children with Birth Defects Using Geographic Information Systems**, *Birth Defects Part A: Clinical Molecular Teratology*, vol. 97(10): 673-684.

P. 17. <u>Delmelle E.M.</u>; Kim C.J.; Xao N. and W. Chen. **Methods for space-time pattern analysis and modeling: an overview**. *International Journal of Applied Geospatial Research*, vol. 4(4): 1-18.

P. 16. <u>Delmelle E.M.</u>; Casas I.; Rojas J. and A. Varela. **Spatio-Temporal Patterns of Dengue Fever in Cali, Colombia** *International Journal of Applied Geospatial Research*, vol. 4(4): 58-75.

2012   P. 15. <u>Delmelle E.M.</u>; S. Li and A. Murray. **Identifying Bus Stop Redundancy: A GIS-based Spatial Optimization Approach**. *Computers, Environment and Urban Systems*, vol. 35: 445-455.

P. 14. <u>Delmelle E.M.</u> and E.C. Delmelle. **Exploring Spatio-Temporal Commuting Patterns in a University Environment**, *Transport Policy*, vol. 21: 1-9.

P. 13. Yan S., <u>Delmelle E.M.</u> and M. Duncan. **Impact of a Light Rail on Single Family Property Values in Charlotte**. *Journal of Transportation and Land Use*, vol. 5.

P. 12. Dao D.; Zhou Y.; Thill J.-C. and <u>E.M. Delmelle</u>. **Spatio-Temporal Location Modeling of AEDs as Emergency Medical Devices in a 3D Indoor Environment**. *International Journal of Geographical Information Science*, vol. 26: 469-494.

2011   P. 11. <u>Delmelle E.M.</u>; Delmelle E.C.; I. Casas and T. Barto. **H.E.L.P: a GIS-based Health Exploratory AnaLysis tool for Practitioners**. *Applied Spatial Analysis and Policy*, vol. 4(2): 113-137.

P. 10. Jensen J.; Humes K.; Vierling L.; Hudak A. and <u>E.M. Delmelle</u>. **Evaluation of the MODIS LAI product using independent lidar-derived LAI: a case study in mixed conifer forest**. *Remote Sensing of the Environment*, vol. 115(112): 3625-3639.

2010   P. 9. Akella M.; <u>Delmelle E.M.</u>; Batta R.; Rogerson P. and A. Blatt. **Cell Tower Location Using Geostatistics**. *Geographical Analysis*, vol. 42(3): 227-244.

P. 8. Casas I.; <u>Delmelle E.M.</u> and A. Varela. **A space-time approach to diffusion of health service provision information**, *International Regional Science Review*, vol. 33(2): 134-156.

2009   P. 7. <u>Delmelle E.M.</u> and P. Goovaerts. **Second-Phase Sampling Designs for Non- Stationary Spatial Variables**. *Geoderma*, vol. 153(1): 205-216.

2007   P. 6. Casas I.; Malik A.; <u>Delmelle E.M.</u>; Karwan M.H. and R. Batta. **An Automated Network Generation Procedure for Routing of Unmanned Aerial Vehicles (UAVs) in a GIS Environment**. *Networks and Spatial Economics*, vol. 7(2): 153-176.

P. 5. Storfer A.; Murphy M.; Evans J.; Goldberg C.; Robinson S.; Spear R.; Dezzani R.; <u>Delmelle E.M.</u>; Vierling L. and L. Waits (2007). **Putting the "Landscape" in Landscape Genetics.** *Heridity*, vol. 98(3): 128-142.

2005   P. 4. <u>Delmelle E.M.</u>; Rogerson P.; Akella M.; Batta R.; Blatt A. and G. Wilson. **A spatial model of received signal strength indicator values for automated collision notification technology**. *Transportation Research C: Emerging Technologies*, vol. 13(5): 432-447.

P. 3. Akella M.; Batta R.; <u>Delmelle E.M.</u>; Rogerson P.; Blatt A. and G. Wilson. **Base Station Location and Channel Allocation in a Cellular Network with Emergency Coverage Requirements**. *European Journal of Operations Research.* vol. 164(2): 301-323.

2004   P. 2. Rogerson P.; <u>Delmelle E.M.</u>; Batta R.; Akella M.; Blatt A. and G. Wilson. **Optimal Sampling Design for Variables with Varying Spatial Importance.** *Geographical Analysis*, vol. 36(2): 177-194.

2003   P. 1. Akella M.; Bang C.; Beutner R.; <u>Delmelle E.M.</u>; Wilson G.; Blatt A.; Batta R. and P.A. Rogerson. **Evaluating the Reliability of Automated Collision Notification (ACN) Systems.** *Accident Analysis and Prevention*, vol. 35(3): 349-360.

Articles in Edited Books and Conference Proceedings

2021
B.C. 20. Martin M. E. and <u>Delmelle E.M.</u>. **Modeling Spatial Attractiveness to Wine Tourism in North Carolina, USA.** *Regional Science Perspectives on Tourism and* Hospitality: 181-208. Springer, Cham.

Desjardins M.; Hohl A.; Casas I and <u>E.M. Delmelle</u>. **Identifying and Visualizing Space-Time Clusters of Vector-Borne Diseases**. *Book: Geospatial Technology for Human Well-Being and Health.* (Ed: F. Faruque). Accepted.

B.C. 18. Desjardins M.; Hohl A.; Casas I and <u>E.M. Delmelle</u>. **Identifying and Visualizing Space-Time Clusters of Vector-Borne Diseases**. *Book: Geospatial Technology for Human Well-Being and Health.* (Ed: F. Faruque). Accepted.

2020
B.C. 17. Hohl A.; Saule E.; Tang W. and <u>E.M. Delmelle</u> **Spatiotemporal domain decomposition for high performance computing: A flexible splits heuristic to minimize redundancy**. *Book: High Performance Computing for Geospatial Applications.* (Eds: Tang W. and S. Wang).

2019
B.C. 16. Martin M. and <u>E.M. Delmelle</u>. **Modeling Spatial Attractiveness to Wine Tourism in North Carolina, U.S.A.** In: Oner O.; Ferrante M. and O. Fritz (Eds). *Regional Science Perspectives on Tourism and Hospitality* Springer. To Appear

2018
B.C. 15. Chen M.; Thill J.-C. and <u>E.M Delmelle</u>. **iGLASS: An Open Source SDSS for Public School Location-Allocation.** In: J.-C. Thill and S. Dragicevic. (Eds). *Geocomputational Analysis and Modeling of Regional Systems.* SpringerLink: 325-353.

2017
B.C. 14. Owusu C.; Lan Y.; Zheng M.; Tang W. and <u>E.M. Delmelle</u>. **Geocoding Fundamentals and Associated Challenges**. In: Karimi H.A. and B. Karimi (Eds). Geospatial Data Science Techniques and Applications: 41-62.

B.C. 13. Hohl A.; Zheng M.; Tang W.; <u>E.M. Delmelle</u> and I. Casas. **Spatiotemporal Point Pattern Analysis Using Ripley K Function**. In: Karimi H.A. and B. Karimi (Eds). Geospatial Data Science Techniques and Applications: 155-175.

2016
B.C. 12. Hohl A.; Casas I.; <u>Delmelle E.M.</u> and W. Tang. **Hybrid Indexing for Parallel Analysis of Spatiotemporal Point Patterns**. GIScience 2016 meeting. Montreal.

B.C. 11. <u>Delmelle E.M.</u>. **Using Statistics to Describe and Explore Spatial Data** In: Clifford N.; French S.; Cope M. and T. Gillespie (Eds). Key Methods in Geography.

2015
B.C. 10. <u>Delmelle E.M.</u>, Kanaroglou P. and A. Paez. **Introduction: Medical Geography and Spatial Epidemiology** In: Kanaroglou P., Paez A. and <u>E.M. Delmelle</u> (Eds.). Spatial Analysis in Health Geography.

B.C. 9. <u>Delmelle E.M.</u> **Space-time visualization of dengue fever outbreaks** with Meijuan Jia, Wenwu Tang, Coline Dony, Irene Casas. In: Kanaroglou P.; Paez A. and <u>E.M. Delmelle</u> (Eds.). Spatial Analysis in Health Geography: 85-99.

2013
B.C. 8. <u>Delmelle E.M.</u>. **Spatial Sampling**. in Fischer M. and P. Nijkamp *Handbook of Regional Science*, Springer, pp. 1385-1399.

B.C. 7. <u>Delmelle E.M.</u>. **Model-based criteria for second-phase spatial sampling**. in Mateu, J. and Müller, W.G. *Spatio-Temporal Design*, Wiley: 54-71.

2011
B.C. 6. <u>Delmelle E.M.</u> **MetaHeuristics for a Non-Linear Spatial Sampling Problem.** *Geocomputation 2011, UCL*, London, U.K. (Poster).

B.C. 5. <u>Delmelle E.M.</u> (2010). **Second-phase spatial sampling: local and global objectives to optimize sampling patterns**. *Accuracy 2010 Symposium*, Leicester, UK: 221-224.

B.C. 4. <u>Delmelle E.M.</u> . **Spatial Optimization**. *In:* In B. Wharf (ed). *Encyclopedia of Human Geography*, Sage Publications.

2009   B.C. 3. <u>Delmelle E.M.</u>. **Spatial Sampling**. *In:* Fotheringham and Rogerson (eds.) *Handbook of Spatial Analysis.* Sage Publications: 183-206.

B.C. 2. <u>Delmelle E.M.</u> **Point Pattern Analysis**. *In:* Kitchin and Thrift. (eds.) *International Encyclopedia of Human Geography.* Oxford, Elsevier: 204-211.

B.C. 1. <u>Delmelle E.M.</u> and R. Dezzani. **Overview, classification and selection of map projections for geospatial applications**. *In:* Karimi H. (ed.) *Handbook of Research on GeoInformatics.* Idea Group Reference: 89-98.

Articles under review & being revised.

A Web-based Analytical Framework for the Detection and Visualization Space-time Clusters of COVID-19. with Y. Lan (Cartography & GIScience).

External Grants

AWARDED

<u>$393,930</u>   "Residential Mobility: Implications for the Accuracy of Disease Cluster Detection". National Science Foundation. **PI**. <u>2023-25</u>.

<u>$990,564</u>   "Optimization of Collaborative Wastewater Monitoring Strategies for Widespread Public. Health Surveillance of Viral Pathogens". Environmental Protection Agency. **CO-PI**. <u>2022-24</u>.

<u>$700,000</u>   "Healthy Wells II". Centers for Diseases Control and Prevention. **PI**. <u>2020-25</u>; (UNC Charlotte portion: $200,000 ($40K per year).

<u>$49,900</u>   "Engaging Citizens to Increase their Awareness of Groundwater Contamination found in Private Wells across Gaston County, North Carolina". NC DOJ Attorney General's Office. **PI**. <u>Summer 2022 to Fall 2024</u>.

<u>$60,000</u>   "GastonWaterMap: A webGIS to inform private well owners in Gaston County of groundwater quality". North Carolina Water Resources Research Institute. **PI**. <u>2020-23</u>.

<u>$324,325</u>   "Geo-FRIT: A Web-based Geospatial Analytics Tool for Quantifying Freight Risk and Resilience in Transportation". North Carolina Department of Transportation. **CO-PI**. <u>2021-23</u>.

<u>$29,999</u>   "Landscape Study: Services and Supports in Mecklenburg County, Prenatal through Age 3 A project of the Social Aspects of Health Initiative" SmartStart of Mecklenburg County, North Carolina, **CO-PI**. <u>2021</u>.

<u>$670,000</u>   "Healthy Wells I". Centers for Diseases Control and Prevention. **PI**. <u>2015-20</u>. **PI**. 2015-18, (UNC Charlotte portion: $294,449).

<u>$9,500</u>   "Modeling and Visualizing the Extents of Historical Regions". **CO-PI** with with Dr. Majic, Rizwan Bulbul, Dr. Scholz, Dr. Grossner Sponsor: *Cartography and Geographic Information Science Society.* <u>2022-2023</u>.

<u>$150,000</u>   "Access to Health Care, Timeliness of Services, and Costs among Children with Birth Defects". **CO-PI** with Dr. Cassell (PI), Department of Public Health Sciences, UNC- Charlotte. Sponsor: *March of Dimes Basil O'Connor Starter Scholar Research Award.* <u>2010-2012</u>.

<u>$65,945</u>	"Bringing GIS Technologies of the 21st Century into the Classroom". Idaho State Board of Education, **CO-PI**, Dr. Bruce Godfrey PI. <u>2006-2007</u>.

Internal Grants

<u>$6,000</u>	"Evaluating the impact of residential mobility on geographical access for children with birth defects" UNC-Charlotte Faculty Research Grant". **PI**.
<u>$11,855</u>	"Modeling and Visualizing the Impact of Weather on Dengue Fever Outbreaks" UNC-Charlotte Faculty Research Grant". **PI**, Dr. Eastin CO-PI.
<u>$11,852</u>	"Improving Geographic Knowledge Discovery and Spatial Reasoning with Mobile and Web-based Geographical Information Systems". Delmelle E. **PI**, Dr. W. Tang, L. Garo CO-PI. 2011. *Center for Teaching and Learning, University of North Carolina at Charlotte.*
<u>$5,000</u>	"On the Use of Heuristic Techniques in a GIS Framework to Solve the Second-Phase Spatial Sampling Problem", UNC-Charlotte Faculty Research Grant". **PI**. 2009-2010.
<u>$500</u>	"Evaluating the Possibility of an on-line delivery of GIS" UNC-Charlotte Distance-education. **PI**. 2010.
<u>$6,500</u>	"Planning Grant for a Professional Science Masters in Geographic Information Science" and Technologies" UNC PSM Initiative. **CO-PI**, Dr. J.-C. Thill PI. 2010.
<u>$4,000</u>	"Sustainability Green Map" Sustainable Idaho Initiatives, **CO-PI**, Dr. Bruce Godfrey PI. 2007-2008.
<u>$2,750</u>	"An Exploration of Transportation Modal Choice Amongst Campus Community" Sustainable Idaho Initiatives, **PI**. 2007-2008.

Contracts

<u>$13,992</u>	ROA Community Health, *Spatial Assessment of Socioeconomic Vulnerabilities to Health Disparities and Nutrition in Mecklenburg and Cabarrus Counties, North Carolina.* Spring and Summer 2021 (Ph.D. student support).
<u>$5,000</u>	Episcopal Diocese of North Carolina, *Estimating Population Projection in North Carolina.* Summer 2017 (Ph.D. student support).
<u>$3,000</u>	"Redesigning the University of Idaho Campus map" Creative and Printing Services, University of Idaho, **PI**. 2007.

Invited talks

2023	**Engaging Rural Communities in Understanding the Risk of Contaminated Water**. Bioinformatics and Genomics Seminar Series, UNC-Charlotte (with Dr. Shoemaker).
2022	**Residential Mobility in Health Geography and its Implications for Spatial Analysis** Department of Geography at the University of Buffalo.
2021	**Monitoring COVID19 Outbreaks Across the United States Using A Prospective Scan Statistic**. University of Connecticut Department Speaker Series.
	Residential Mobility in Maternal Health: Evaluating its Impact on Health Care Access. Geomed virtual talk. https://sites.uci.edu/geomed2022/events/
2020	**The Role of GIS during the COVID-19 Pandemic**. GIS-day presentation Johns Hopkins University

2019	**Geospatial Health: Emerging Technologies**. Geospatial data in health and welfare research Symposium, University of Helsinki (Finland).
2018	**State of Art in Geospatial Technologies for Health**. Geospatial data in health and welfare research Symposium, University of Helsinki (Finland).
2017	**Modeling Access to medical care in Florida for Children with Spina Bifida** Geography Departmental Seminar, University of North Carolina at Chapel Hill.
2016	**Mapping Collective Human Activity in an Urban Environment Based on**. **Mobile Phone Data**. BRU-Net Workshop on Big Data and Urban Geography, Center for Operations Research and Econometrics, Universite Catholique de Louvain, Belgium.
	Evaluating Travel Impedance Agreement among Online Road Network Data. **Providers**. GIS Colloquium, Geography Department, University of Heidelberg, Germany.
	Visualizing the dynamics of health-related tweets. GIS Colloquium, Geography Department, University of Heidelberg, Germany.
2015	**Accelerating the detection of space-time clusters for vector-borne diseases**. NC State Geospatial Analytics Forum, NC.
	Modeling Travel Impedance to Medical Care for Children with Birth Defects. Department of Geography. Dartmouth College, NH.
	Extracting Space-Time Patterns in Infectious Diseases. VisCenter Seminar, Computer Science, University of North Carolina at Charlotte, NC.
2014	**Spatial Analysis in Health Geography: GIS Linkages and Computational Challenges**. Geography and Geospatial Science Working Group, Centers for Disease Control, Atlanta, GA.
	Visualizing space-time uncertainty of dengue fever outbreaks. Center for Geoinformatics, University of St. Andrews, Scotland, UK.
	Space-time signatures of infectious diseases: visualization and computational challenges. Department of Geography, University of Idaho, ID.
2012	**On a Multiperiod School Location Problem using interaction between CPLEX and ArcGIS.** *Mathematics, Operational research, Statistics and Information Systems Group* Vrije Universiteit of Brussels (VUB), Belgium.
	Computational and visualization challenges in kernel distribution estimation of infectious diseases. *Clark Labs*, MA.
2011	**Solving a Multi-Period School Location Problem with Capacity Constrains Using Tabu Search**. *Spatial Economics Seminar*, CORE, Louvain-la-Neuve, Belgium.
	Evaluating public transit efficiency using geographical information systems and spatial optimization. *Cinquiemes Journees Economie et Espace*, Lyon, France.
2010	**Integrating a Spatial Interaction Model in a GIS: an Application to Public Transit** *Mathematics, Operational research, Statistics and Information Systems Group* Vrije University Brussels (VUB), Belgium.
2008	**A GIS-based space-time analysis of health service diffusion**. *Spatial Economics Seminar,* CORE, Louvain-la-Neuve, Belgium.

▬▬▬▬▬ Conference Presentations

2023	<u>Delmelle E.</u>; Desjardins M. and X. Shi. **Residential Mobility: Implications for the Accuracy of Disease Cluster Detection** Association of American Geographers Annual Meeting, Denver, CO (USA)

Aguirre, M.; Armstrong L.M.; Potochnick S.; Shahinfar A. <u>Delmelle, E.</u>; Kangmennaang, J. and R. Kilmer. **Building More Equitable Systems of Care for Families with Young Children in Low-Income Communities**. Society for Research in Child Development Annual Meeting, Salt Lake City, UT. (poster).

2022   <u>Delmelle E.</u>. **Modeling the Role of Geography on Survival Outcomes for Children with Birth Defects**, International Medical Geography Symposium, Edinburgh, U.K.

<u>Delmelle E.</u>. **Modeling the Role of Geography on Survival Outcomes for Children with Birth Defects**, GEOMED, Irvine, CA (USA)

<u>Delmelle E.</u>, Desjardins M.R.; Lan Y.; Hohl A. and X. Shi. **What is the role of scale in the early detection of COVID19 outbreaks?** Association of American Geographers Annual Meeting, Virtual

2019   <u>Owusu C.</u>; Dye S.; Tang W.; Delmelle E.M. and A. Laloggia. **Designing a GIS-based Geostatistical Framework to Support the Management of Water Quality from Private Wells**, *National Environmental Health Association Annual Education Conference*, Nashville, TN.

<u>Owusu C.</u>; Delmelle E.M.; Dye S. and W. Tang. **Using multiple-variable indicator kriging for evaluating water quality from private household wells in Gaston County, NC** *Water Resources Research Institute Annual Conference*, Raleigh, NC.

<u>Lan Y.</u>; Delmelle E.M.; Tang W. and S. Dye. **A web GIS system for the collection, management and analysis of private wells data in Gaston County, NC** *Water Resources Research Institute Annual Conference*, Raleigh, NC.

<u>Desjardins M.</u>; Paul R. and E. Delmelle E.M. **Spatio-temporal modeling of neighborhood level risks for dengue, chikungunya, and Zika in Cali and Medellin, Colombia.** *Geomed Conference*, Glascow, UK.

<u>Hohl A.</u>; Saule E.; Delmelle E.M. and W. Tang. **Spatiotemporal domain decomposition for high performance computing: A flexible splits heuristic to minimize redundancy** *American Association of Geographers Annual Meeting*, D.C.

Owusu C.; <u>Desjardins M.</u>; Baker K. and E.M. Delmelle. **Exploring the impact of residential mobility on the prevalence and transmission dynamics of chlamydia in Kalamazoo County, Michigan**, *American Association of Geographers Annual Meeting*, D.C.

<u>Delmelle E.M.</u>; Owusu C.; Desjardins M.; Hohl A.; Jung P.; Lan Y. and C. Dony **Uncertainty in Geographical Analysis: Current Challenges and Future Opportunities** *American Association of Geographers Annual Meeting*, D.C.

<u>Owusu C.</u>; Delmelle E.M.; Dye S. and W. Tang. **Using multiple-variable indicator kriging for evaluating water quality from private household wells in Gaston County, NC** *American Association of Geographers Annual Meeting*, D.C.

<u>Lan Y.</u>; Delmelle E.M.; Tang W. and S. Dye. **A web GIS system for the collection, management and analysis of private wells data in Gaston County, NC** *American Association of Geographers Annual Meeting*, D.C.

2018   <u>Delmelle E.M.</u> **SNAPScapes: Using Geodemographic Segmentation to Classify the. Food Access Landscape**, *Charlotte-Mecklenburg GIS User Group Fall Meeting*

<u>Silverman G.</u>; Dye S.; Alcorn A.; Delmelle E.M.; Lan Y.; Owusu C. and W. Tang. **Pathogenic contamination of private wells: Disparities in access to safe drinking water in Gaston County, North Carolina?**, *American Public Health Association*, San Diego, CA.

Delmelle E.M.; Owusu C.; Tang W.; Lan Y.; Silverman G. and S. Dye. **A spatially explicit database of private wells for the monitoring of water quality in Gaston County, NC.** *Water Resources Research Institute Annual Conference*, Raleigh, NC

Alcorn A.; Silverman G.; Dye S.; Lan Y.; Tang W. and E.M. Delmelle. **Pathogenic contamination of private wells: Disparities in access to safe drinking water in Gaston County, North Carolina?**, *National Environmental Health Association*, Anaheim, CA.

Owusu C.; Delmelle E.M.; Dye S.; Lan Y.; Owusu C.; Silverman G. and W. Tang. **Developing a Public Digital Private Water Wells System in GIS.** *National Environmental Health Association*, Anaheim, CA.

Desjardins M.; Whiteman A.; Casas I. and E.M. Delmelle. **Space-Time Clusters and Co-occurrence of Chikungunya and Dengue Fever in Colombia from 2015 to 2016** *American Association of Geographers Annual Meeting*, New Orleans, LA.

Casas I. and E.M Delmelle **Knowledge, Attitude and Practices (KAP) Towards Dengue Fever in Cali, Colombia** *American Association of Geographers Annual Meeting*, New Orleans, LA.

Owusu C.; Desjardins M.; Delmelle E.M. and A. Hohl. **Visualizing association between space-time clusters of chlamydia infections in Kalamazoo County, Michigan** *American Association of Geographers Annual Meeting*, New Orleans, LA.

Delmelle E.M.; Thomas I. and D. Peeters **Controlling Excess Travel and Assignment Switches in School Location** *American Association of Geographers Annual Meeting*, New Orleans, LA.

2017 | Saule E.; Panchananam D.; Hohl A.; Tang W. and E.M. Delmelle. **Parallel Space-Time Kernel Density Estimation**. *International Conference on Parallel Processing*, Bristol, UK (acceptance rate=28.4%).

Desjardins M.; Hohl A.; Griffith A. and <u>E.M. Delmelle</u>. **Fine-scale visualization of pollen concentrations across the Eastern United States: A space-time. parallel approach**, *Gecomputation Conference*, Leeds, UK.

Delmelle E.M.; Desjardins M. and R. Kirby. **Evaluating the impact of residential mobility on health care accessibility for children with birth defects.** *Geomed*, Porto (Portugal).

Desjardins M.; Hohl A.; Griffith A. and E.M. Delmelle. **Fine-scale visualization of pollen concentrations across the Eastern United States: A space-time. parallel approach**, *Geomed*, Porto (Portugal).

Kirby R. and E.M. Delmelle. **From Theory to Practice: Integrating Spatial Statistics with Epidemiologic Methods to Advance the Study of Population Health**. *Geomed*, Porto (Portugal).

Racine E.; Delmelle E.M.; Solomon C. and E. Major. **Accessibility Landscapes to SNAP Authorized Stores**, *American Public Health Association Meeting*, Atlanta, GA.

Delmelle E.M.; Whiteman A.; Desjardins M. and I. Casas. **Zika in Colombia: space-time signatures of an epidemic on the move**, *Annual Meeting of the American Association of Geographers*, Boston, MA

Desjardins M.; Hohl. A.; Griffith A. and E.M. Delmelle. **Visualizing space-time patterns of pollen across the Eastern United States in a 3D environment: A parallel approach.** *Annual Meeting of the American Association of Geographers*, Boston, MA

Hohl A.; Zheng M.; Jia M.; Tang W. and E.M. Delmelle. **Sensitivity Analysis of a High-Performance Spatiotemporal Pattern Mining Algorithm**. *Annual Meeting of the American Association of Geographers*, Boston, MA

Lan Y.; Owusu C.; Tang W. and E.M. Delmelle. **Fusion of Multiple Web-based Geocoding Services for Improved Address Matching**. *Annual Meeting of the American Association of Geographers*, Boston, MA

Owusu C.; Delmelle E.M.; Tang W., Lan Y.; Major E.; Shi J.; Silverman G. and S. Dye. **Hybrid Geocoding and Text Matching: A Multi-stage Process to Improve Geocoding Accuracy and Match Rate of Historical Records**. *Annual Meeting of the American Association of Geographers*, Boston, MA

Delmelle E.M.; Kirby R. and M. Desjardins. **Where have you been? Evaluating the impact of residential mobility on health care accessibility for children with birth defects.** *Annual Meeting of the American Association of Geographers*, Boston, MA

Delmelle E.M.; Whiteman A.; Desjardins M. and I. Casas. **Zika in Colombia: space-time signatures of an epidemic on the move**. *Annual Meeting of the Southeastern Division of the American Association of Geographers*, Starkville, MS

2016   Hohl, A.; Casas I., Delmelle E.M. and W. Tang W. **Hybrid Indexing for Parallel Analysis of Spatiotemporal Point Patterns.** *GIScience meeting*, Montreal, Canada.

Delmelle E.M. **Visualizing the dynamics of health-related tweets: opportunities and computational challenges**, *Annual Meeting of the American Association of Geographers*, San Francisco, CA

Deng J. and E.M. Delmelle. **An Interactive Approach to Detect Space-Time Patterns of Landscape Change**, *Annual Meeting of the American Association of Geographers*, San Francisco, CA

Desjardins M., Delmelle E.M. and J. Deng. **Designing Spatially Cohesive Nature Reserves with Backup Coverage**, *Annual Meeting of the American Association of Geographers*, San Francisco, CA

Hohl A., Delmelle E.M., Tang W. and I. Casas. **Spatiotemporal Domain Decomposition and Indexing for Discovery of Disease Patterns Using Parallel Computing**. *Meeting of the Southeastern Division of the American Association of Geographers*, Colombia, SC.

Owusu C., Delmelle E.M., Tang W. and Y Lan. **Improving Geocoding Accuracy of Private Water Wells in Gaston County, NC Using a Context-Based Approach.**, *Meeting of the Southeastern Division of the American Association of Geographers*, Colombia, SC.

2015   Hohl A.; Delmelle E.M., Tang W. and I Casas. **Accelerating the detection of space-time clusters for vector-borne diseases.** *Geomed*, Florence, Italy.

Marsh D.; Delmelle E.M. and C. Dony. **Evaluating travel impedance agreement among online road network data providers**. *International Conference on Location-Based Social Media*, Athens, GA.

Delmelle E.M. and I Casas. **Dynamics of Dengue Fever Outbreals at Different Space-Time Granularities**, *Annual Meeting of AAG*, Chicago, IL.

Hohl A.; Delmelle E.M. and W. Tang. **3D domain decomposition for parallel processing of massive spatiotemporal geographic data**, *Annual Meeting of AAG*, Chicago, IL.

Hohl A.; Delmelle E.M. and W. Tang. **Spatiotemporal domain decomposition for massive parallel computation of space-time kernel density**, *International Symposium on Spatiotemporal Computing*, George Mason University, Fairfax, VA.

Delmelle E.M.; Marsh D. and C. Dony. **Can OpenStreetMap be trusted for Modeling Travel?** *Southeastern Division of the Association of American Geographers*, Pensacola, FL.

2014   Radcliff B.; Delmelle E.M.; Kirby R.; Laditka S.; Correia J. and C. Cassell
Factors associated with travel time and distance to access hospital care among children with spina bifida. Poster, *MCH Epidemiology Conference*, Phoenix, AZ.

Radcliff B.; Delmelle E.M.; Kirby R.; Laditka S.; Correia J. and C. Cassell
Factors associated with travel time and distance to access hospital care among children with spina bifida. *American Public Health Association (APHA)*, New Orleans, LA.

Marsh D.; Dony C. and E.M. Delmelle. **Uncertainty of Travel Estimates Using Open Geographic Data Providers: Implications for Epidemiological Research.** *Annual Meeting of the American Association of Geographers*, Tampa, FL.

Dony C.; Delmelle E.M. and E.C. Delmelle. **Spatial accessibility to public parks in Mecklenburg County, NC: comparison by travel mode.** *Annual Meeting of the American Association of Geographers*, Tampa, FL.

Casas I.; Delmelle E.M. and E.C. Delmelle. **Potential and Revealed Spatial Accessibility of Dengue Fever Patients During an Epidemic.** *Annual Meeting of the American Association of Geographers*, Tampa, FL.

Delmelle E.M.; Dony C.; Casas I; Jia M. and W. Tang. **Visualizing the impact of space-time uncertainties on dengue fever patterns** *Annual Meeting of the American Association of Geographers*, Tampa, FL.

2013   Delmelle E.M.; Cassell C.H.; Dony C.; Radcliff E.; Tanner J.-P.; Siffel, C. and R. Kirby
Modeling Travel Impedance to Medical Care for Children with Spina Bifida Using Geographic Information Systems, *40th Annual Meeting of the International Clearinghouse for Birth Defects Surveillance and Research (ICBDSR)*, San Jose, CR.

Eastin M.D.; Delmelle E.M and I. Casas. **Improved autoregressive prediction of dengue outbreaks using local weather and regional climate for a tropical environment in Colombia**, *AMS Conference on the Environment and Health*, Atlanta, GA.

Casas I.; Delmelle E.M. and E.C. Delmelle. **Access to health facilities during a dengue fever outbreak in Cali, Colombia**
The North American Regional Science Council Meeting, Atlanta, GA.

Hagenlocher M.; Kienberger S.; Casas I. and E.M. Delmelle. **Modeling hospots of socio-economic vulnerability to dengue fever in Cali, Colombia -supporting place-based intervention planning.** *7th International Symposium on Geospatial Health*, Naples, Italy.

Delmelle E.M and R. Kirby. **Role of GIS and Estimating Travel to Hospitals for Infants with Spina Bifida**. *URISA*, Miami, FL.

Eastin M.D.; Delmelle E.M and I. Casas. **Intra- and inter-seasonal autoregressive prediction of dengue outbreaks using local weather and regional climate for a tropical environment in Colombia**, *SEDAAG Annual Meeting*, Roanake, VA.

Thomas I.; Delmelle E.M.; D. Peeters and J.-C. Thill. **Optimal school locations: controlling excess travel and assignment switches in a spatially dynamic urban. growth context**. *Annual Congress of the European Regional Science*, Palermo, Italy.

2012   Delmelle E.M; Jia M.; Dony C.; Casas I. and W. Tang. **Space-time densities for the visualization of infectious diseases**, *GISscience meeting*, Columbus, OH.

Thill J.-C.; Delmelle E.M.; Peeters P. and I. Thomas. **Dynamic School location under demand uncertainty, with modular capacity and facility age constraints**, *World Congress of the Regional Science Association, Timisoara, Romania.*

Delmelle E.M.; Thill J.-C.; Peeters D. and I. Thomas. **A multi-period capacitated school location problem with modular equipments and age restrictions**. *Annual Meeting of the American Association of Geographer*, New York City, NY.

Dony C.; Delmelle E.M. et al. **Modeling Accessibility to Specialty Clinics for Children with Birth Defects in Florida, 1998-2008.** *Annual Meeting of the Association of American Geographers*, New York City, NY.

Casas I.; Delmelle E.M. and J. Wexler. **GIS for Modeling Spatial, Temporal and Spatio-Temporal Patterns of Dengue Fever Occurrence in Cali, Colombia for 2010**. *Annual Meeting of the American Association of Geographers*, New York City, NY.

Thill, J.-C.; Chen, M. and E.M. Delmelle. **iGLASS: An open source visualization platform for interactive school location planning with local re-optimization**. *Annual Congress of the European Regional Science*, Bratislava. Slovakia.

Peeters, D.; Amaya, J.; Delmelle, E.M.; Thomas, I.; Thill, J.-C. and P. Uribe. **Two Problems Related to School Planning**. *ISOLDE*, Japan.

Dony, C.; Delmelle, E.M. et al. **Using GIS to Determine Travel Distance and Travel Time to Hospitals for Infants with Spina Bifida in Florida, 1998-2007** *GIS day*, University of North Carolina at Charlotte and at the Centers for Disease Controls.

Chen M.; Thill. J.-C. and E. M. Delmelle. **School facility location-allocation problems: modeling challenges, algorithmic development and visualization**. *North American Meetings of the Regional Science Association International*, Ottawa, Canada.

2011   Delmelle E.M. **Coverage Location of Emergency Devices on a University Campus to Maintain Safety**, *Informs*, Charlotte, North Carolina, U.S.A.

Delmelle E.M.; J.-C. Thill; D. Peeters and I. Thomas. **A capacitated multi-period school location problem**, *European Working Group Location Analysis meeting*, Nantes, France.

Delmelle E.M. **On the Use of Heuristics for a Non-Linear Spatial Optimization Problem.** *Geocomputation, University College London*, London, U.K.

Delmelle E.M. and I. Casas. **Modeling the Risk of Dengue Fever in Relation to its Habitat: an application for Disaggregated Cases in Cali, Colombia.** *Annual Meeting of the American Association of Geographers*, Seattle, WA.

Delmelle, E.M. and I. Casas. **Modeling and Visualization of Space-Time Patterns between Distribution of Dengue Fever and its Habitat in Cali, Colombia**. *Annual Meeting of the American Association of Geographers*, Seattle, WA.

Yates J.; Delmelle E.M. and I. Casas. **Identifying Spatial Solution Trends in Diverse Networks for Critical Infrastructure Protection**. *North American Meetings of the Regional Science Association International*, Denver, CO.

Delmelle E.M.; J.-C. Thill. **Solving a Multi-Period School Location Problem with Capacity Constrains Using Tabu Search**. *North American Meetings of the Regional Science Association International*, Denver, CO.

2010   Delmelle E.M. and J.-C. Thill. **Solving a Multi-Period School Location Problem with Capacity Constrains Using Tabu Search**. *Informs*, Austin, TX.

Delmelle E.M. **Local and Global Objectives to Optimize Sampling Patterns** *Annual Meeting of the American Association of Geographers*, Washington, D.C.

2009	<u>Zhou Y.</u>; Dao D.; Thill J.-C. and E.M. Delmelle. **Indoor 3D Coverage Modeling to Optimize Defibrillators' Placement**, *North American Meetings of the Regional Science Association International*, San Francisco, CA.
	<u>Delmelle E.M.</u> and S. Li. **GIS-Based Spatial Interaction Allocation: Efficiency of Stochastic Optimization Methods**, *North American Meetings of the Regional Science Association International*, San Francisco, CA.
	<u>Delmelle E.M</u> **GIS-Based Spatial Interaction Allocation Using Stochastic Optimization**, *European Conference on Operational Research*, Bonn, Germany.
	<u>Delmelle E.M.</u> **GIS-Based Spatial Analysis of Transportation Modal Choices in a Small, University Community**. *Annual Meeting of the American Association of Geographers*, Las Vegas, NV.
	<u>Delmelle E.C.</u>; Casas I. and E. M. Delmelle. **Healthcare Accessibility: A Comparison of Public Transport Systems, Cali, Colombia**. *Annual Meeting of the American Association of Geographers*, Las Vegas, NV.
	<u>Delmelle E.M.</u> and S. Li. **GIS-based bus stops allocation**. *Annual Meeting of the Southeastern Division of the American Association of Geographers*, Greensboro, NC. (poster).
2008	<u>Delmelle E.M.</u> and I. Casas. **Space-Time Clustering of Hospital Patients in Cali Colombia**, *Annual Meeting of the American Association of Geographers*, Boston, MA.
	<u>Delmelle E.M.</u>. **Additional spatial sampling for image reconstruction** *North American Meetings of the Regional Science Association International*, New York City, NY.
2007	<u>Delmelle E.M.</u>; Casas I.; and A. Varela. **Diffusion of Health Service Provision Information: A Spatio-Temporal Analysis**, *North American Meetings of the Regional Science Association International*, Savannah, GA.
	<u>Delmelle E.M.</u> and A. T. Murray. **Spatial Sampling and Location Modeling** *Annual Meeting of the American Association of Geographers*, San Francisco, CA.
2006	<u>Delmelle E.M.</u> and I. Casas. **A dynamic node generation procedure based on adaptive sampling for network generation for routing of UAVs.** *North American Meetings of the Regional Science Association International*, Toronto, Canada.
	<u>Delmelle, E.M.</u>. **A new method to support second-phase spatial sampling in a covariate field using regression confidence bands.** *Association of Annual Meeting of the American Association of Geographers.* Chicago, IL.
2005	<u>Casas I.</u>; Delmelle E.M. and A. Malik. **An Automated Network Generation Procedure for Routing of UAVs: Improvements and Sensitivity Analysis.** *Annual Meeting of the American Association of Geographers.* Denver, CO.
	<u>Batta R.</u>; Tokar E.; Delmelle E.M. and P. Rogerson. **Base Station Location and Channel Allocation in Cellular Networks with Movable Demand.** *European Conference on Operational Research*, Greece.
2004	<u>Delmelle, E.M.</u>; Rogerson, P.; Akella, M. and R. Batta **Using Topographic Information to Improve the Mapping of Cell Phone Signal Strength.** *Annual Meeting of the American Association of Geographers.* Philadelphia, PA.
2003	<u>Akella, M.</u>; Batta, R.; Delmelle, E.M. and P. Rogerson. **Optimal Cell Tower Locations to Maximize Call Completion Probability Using Spatial Interpolation.** *North American Meetings of the Regional Science Association International*, Philadelphia, PA.

I. TEACHING

■ Teaching Activities

*: Undergraduate course, **: Cross-listed UG/GR course, ***: Graduate course.

UNC-Charlotte

Geographic Information Science & Technology***: Fall 2015-2019, Fall 2022

Spatial Epidemiology***: Spring 2023

Emerging Technologies in Geospatial Health***: Spring 2020

Fundamentals of GIS**: Fall 2008, Spring 2009, Spring 2010, Spring 2011 & Fall 2014.

GIS Programming**: Fall 2009, Fall 2010, Fall 2011, Spring 2013, Fall 2014
Spring 2016, Spring 2019-2021 & Spring 2023.

Cartography*: Spring 2012.

Medical Geography*: Spring 2014-2019 and Fall 2022.

Spatial Database Development with GPS and GIS**: Spring 2010-2011 and Fall 2022.

GIS for Socio-Economic Applications**: Spring 2010-2011.

Spatial Optimization***: Fall 2008, Fall 2010, Spring 2013, Fall 2016, 2018& 2020

Geovisualization***: Fall 2009, Fall 2011, Spring 2014, Fall 2017 & Fall 2019

**Place-based Geographic COVID-19 Research Perspectives
and Realities for Practice****: Fall 2020

Eastern Finland

Geospatial Approaches in Health Geography***: Fall 2021

Spatial Analytics in Health (with R), Graduate Workshop: April 2023

Residential mobility and spatial analysis, Graduate Workshop. Spring 2020

Spatial and space-time patterns, Graduate Workshop in R. Fall 2019

Bayesian disease mapping, Graduate Workshop in R. Fall 2018

**University of
Idaho**

GIS-Primer*: Fall 2005/Spring 2006)/Fall 2006/Spring 2007.

Geovisualization**: Spring 2007/ Spring 2008

Spatial Analysis and Modeling**: Spring 2007/ Spring 2008

Spatial Support Decision Techniques**: Fall 2006

SUNY Buffalo

Geographical Information Systems**: Summer 2005

■ Graduate Students, main advisor

Yu Lan-Ph.D	A Web-based Geographic Framework to Detect and Visualize Space-Time Clusters of Infectious Diseases (12/2022)
J. Deng-Ph.D.	A GIS-based Expert System to Improve the Accuracy of Wetland Classification (05/2020)
M.Desjardins-Ph.D.	A Mixed-Methods Approach for Vector-Borne Disease Surveillance in Colombia (05/2020)
C. Owusu-Ph.D.	Incorporating Multilevel Geocoding and Spatial Modeling Techniques to Predict the Risk of Water Contamination found in Private Wells across Gaston County, North Carolina(05/2020)
G. Docekal-MA	Hurricane Florence's Impact on Shelter Accessibility in Eastern North Carolina (12/2019)
A. Whiteman-Ph.D.	Socioeconomic Variation and Aedes Mosquitoes: An Examination of Vector-Borne Disease Transmission Risk in the Urban Environment (12/2018)

Alex Hohl-Ph.D.	Accelerating the detection of space-time patterns under non-stationary backgeround population (co-advised Dr. Tang).(06/2018)
Coline Dony-Ph.D.	Better Access to Parks to Reduce Hearth Diseases in Mecklenburg County, NC (08/2016)
E. Major-MA	Exploring SNAPScapes: Making sense of North Carolina's food access landscapes with geodemographic segmentation (05/2017)
M. Desjardins-MA	Modeling Compactness in Reserve Design with Backup Requirements (05/2016)
M. McManus-MA	Modeling Spatial Attractiveness in North Carolina Wine Tourism (05/2016)
K. Brawn-MA	Using Elevation Information to Improve the Accuracy of Climate Data Interpolation in Colombia (05/2025).
D. Marsh-MA	An evaluation of travel impedance uncertainty across online road network data provider (05/2015)
K. Zyger-MA	Individual and neighborhood influences on asthma quality of life in Charlotte, NC (05/2014).
C. Dony-MA	Modeling Accessibility to Specialty Clinics (FL.) in GIS for Children with Birth Defects (12/2012)
H. Zhu-MA	Developing a web-based GIS toolkit for the monitoring of diseases (05/2012).
J. Wexler-MS	Modeling the impact of weather indicators on the magnitude of disease occurrences.(05/2012).
S. Whittington-MA	GIS Modeling of Disparities in Access to Recreation Spaces and Parks (12/2011).
S. Li-MA	GIS-Based Spatial Interaction Allocation with Heuristic Optimization Methods (12/2010).
S. Yan-MA	The Impact of a Light Rail System on Single Family Property Values in Mecklenburg County, NC, from 1997 To 2008. (12/2010).

Graduate Students, committee member

Geography Ph.D.	Wenpeng Feng , Jae Soen Son , Tonya Farrow-Chestnut
Geography MA	Juan Geng , Yu Lan , Griffen Angel , Chenjun Ling , Jiyang Shi , Meijuan Jia Keith Waters , Rui Shen , Min Chen , Meng Jia , David Cook , Alexander Hohl Xiaojia Wang , Xuchu Meng , Shikai Tang , J. Blackwell
Earth Sci. M.S.	Dash, Lopita , Maher Haddad
Others	Behnam Nikparvar[‡] (Ph.D., INES), Abdollah Mohammadi[‡](Ph.D., INES), Setareh Torabzadeh[‡](Ph.D., INES), Pooja Najaf (Ph.D., INES), Demirel, Edil (Ph.D., INES), Benjamin Futrell (INES, Ph.D), Melissa Karlin (Ph.D., INES), Melanie Johnson (Ph.D., Idaho), Kanya Mukoko (Ph.D., INES), G. Thomas (MPH, Public Health), Elizabeth Radcliff (Ph.D., Health Sciences), Laurie Garo (Ph.D., Education) , Todd Eaglin (Ph.D., Computer Sciences) , Tom Polk (Ph.D., Computer Sciences), Jennifen Jensen (Ph.D, Idaho), M. Monahan (M.S., Idaho) Stephen Peterson (Ph.D, Idaho), J. Groenleer (M.S., Idaho), D. Harsburger (M.S., Idaho).

III. SERVICES

Editorship

Editor	Cartography and Geographic Information Science, Taylor and Francis (since 2021)
Associate Editor	Papers in Regional Science, Wiley (since 2022)
Editorial Board	Computers, Environment and Urban Systems, Elsevier (since 2000)
Editorial Board	Geographical Systems, Springer (since 2019)

Professional Memberships

Membership	North American Regional Science Association, American Association of Geographers (AAG).

Chair	Medical Geography (Health) Group, AAG (2016-2017)
Vice-Chair	Medical Geography (Health) Group, AAG (2015-2016)
	Spatial Analysis and Modeling Group, AAG (2019-2020)
Officer	Medical Geography (Health) Group, AAG (2013-2015)
	Spatial Analysis and Modeling Group, AAG (2009-2012; 2017-2019)
Organiser	Sessions in location modeling (2010, 2018), and spatial epidemiology (2011, 2012, 2014-2018).
Vice-Chair	Charlotte-Mecklenburg Metropolitan GIS user group (2017-now)

Professional Meetings - Organized sessions and Panels

2019	Panelist: **Emerging Trends in Geospatial Health Research**, *Annual Meeting of the American Association of Geographers.*
2017-19	Co-organizer, **Geospatial Health Research Symposium**, *Annual Meeting of the American Association of Geographers.* 20+ sessions; 100+ presenters.
2018-19	Chair & organizer: **John Odland Award (SAM student paper competition)** *Annual Meeting of the American Association of Geographers.*
2017	Chair & organizer: **Melinda S. Meade Distinguished Scholar Lecture in Health and Medical Geography**, *Annual Meeting of the American Association of Geographers.*
2017	Chair and organizer of the **Geography of Health and Safety** session, *Annual Meeting of the Southeastern Division of the American Association of Geographers.*
2009	**Making Sustainable Transportation Work**. *Annual Meeting of the American Association of Geographers.*

Manuscript Reviews since 2005

International Journal of Geographical Information Science; Geographical Analysis;
Computer, Environment and Urban Systems; Journal of Geographical Systems;
Transactions in GIS; Annals of the American Association of Geographers;
Applied Geography; Cartographica; Journal of Maps; Computers &
Geosciences; Computational Statistics and Data Analysis; Mathematical Geosciences;
Management Research Review; Discrete Dynamics in Nature and Society;
Landscape and Urban Planning; Environment and Planning A; Cartography and GIscience
Geojournal, Papers in Regional Science; Socio-Economic Planning Sciences;
International Regional Science Review; Spatial and Spatio-Temporal Epidemiology; Spatial
Statistics; Social Science Research, Applied Spatial Analysis and Policy; International Journal
of Applied Geospatial Research, International Journal of Geo-Information;
International Journal of Geospatial and Environmental Research;Transportation
Research Part A; Journal of Transport Geography; Transportation Letters, Transportation
Research Board; International Journal of Sustainability in Higher Education;
Emerging Microbes & Infections; International Journal of Environmental Research
and Public Health; Vector-Borne and Zoonotic Diseases; Aircraft Engineering and Aerospace
Technology; ISPRS -International Journal of Geoinformation; ISPRS Journal of
Photogrammetry and Remote Sensing; Southeastern AAG; AIMS in Public Health
Climate; Emerging Infectious Diseases; Emerging Microbes and Infections; PLOS One;
Health and Place; International Journal of Environmental Research and Public Health
European Journal of Operations Research; International Journal of Sustainability
in Higher Education; Acta Tropica; Journal of Geography; Springer Plus; Journal of

Spatial Science; Annals of Epidemiology; Birth Defects Research Part A: Clinical and Molecular Teratology; Geospatial Health; Journal of the International AIDS Society IEEE Transactions on Instrumentation & Measurement; Information Visualization; Science of the Total Environment; International Journal of Health Geographics; PLOS Neglected Tropical Diseases; Asian Pacific Journal of Tropical Medicine; Archives of Medical Research; Biomedical and Environmental Sciences; BioMed Research International; Mathematical Population Studies: An International Journal of Mathematical Demography Habitat International; Journal of Hydrology;Environmental Health Insights; Environmental Monitoring and Assessment; Geographical Review; American Journal of Preventive Medicine Epidemiology and Infection; Infectious Diseases; PLOS One; BMC Infectious Diseases Parasites and Vectors; Science of the Total Environment.

Proposal review	Belgian Remote Sensing Research Program; National Science Foundation (US, and Singapore).
Others:	Spatial Analysis in Health Geography; Encyclopedia of Geoinformatics.
Judge	Outstanding Master's Thesis Committee (2019)- UNC Charlotte Undergraduate research fair (2012, 2013) - UNC Charlotte Spatial Analysis and Modeling paper competition 2009; 2010; 2018; 2019 Health and Medical Geography Jacques May Thesis Prize 2014. Young Researcher Forum, University of Salzburg -2012.

Departmental services

Ad Hoc hiring	Department chair; Environmental Health (Kangmenaang); Atmospheric scientist (Magi) Geographer (Gagne); GIS lecturer (Yang); CaGIS associate director of technology.
DRC	Departmental Review Committee (Fall 2015, Fall 2016, Fall 2017 and Spring 2018)
GAC	Graduate Advisory Committee 2009-2011, Fall 2014- Spring 2019, Fall 2000-Spring 2021. MA Coordinator Fall 2014-Fall 2016, Fall 2017 - Spring 2019. GIS&T Graduate Certificate Coordinator Spring 2019 - now.
IT-Web	Information Technology and Web Development 2010-2012.
Newsletter	Editor (Spring 2017 and 2018, Fall 2016, 2017 and 2018).
Speakers	Coordinator of departmental speaker's series, 2009-2011.

On-campus GIS activities

UNC-Charlotte	**GIS day 2010-2019**: Main organizer (average of 100 students in attendance) -ESRI partnership. **GIS seminar 2009, 2010, 2011, Spring 2012 and 2013, Spring 2014**: Main organizer. (8 seminars/semester, average of 25 students attendance per talk) -ESRI partnership. **Geocaching 2011**: race with use of GPS. Main organizer (30 students in attendance).
UNC-Charlotte	**GIS day 2017**: Co-organizer at elementary school: ballon mapping and GPS exercises.
University of Idaho	**GIS day 2005, 2006 and 2007**: Main organizer.