

Eric Delmelle

Associate Professor

Epidemiology, Uncertainty, GIS
Spatial Optimization, Geovisualization

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Education

- 09/2001- 06/2005 **Ph.D. in Geography**, *University at Buffalo (SUNY)*
Optimization of second-phase spatial sampling using auxiliary information
- 09/2003- 05/2004 **M.S. in Industrial Engineering**, *University at Buffalo (SUNY)*
Concentration : Operations research
- 01/2000- 09/2001 **M.A. in Geography**, *University at Buffalo (SUNY)*
Concentration : GIS/Cartography
- 09/1995- 09/1999 **B.S. in Geography**, *Vrije Universiteit Brussels*, Belgium
Concentration : GIS/Transportation

Professional Experience

- Sum. 2011 & 2015 **Visiting Scholar**, *Center for Operations Research and Econometrics*, Louvain-la-Neuve, Belgium
- Sum. 2012 **Visiting Scholar**, *Department of Geoinformatics*, Salzburg, Austria
- 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
- 09/2000- 06/2005 **Research assistant**, *NCGIA*, University at Buffalo (SUNY)

I. Research Activity

Edited book

- 2015 B1. Kanaroglou P.; Delmelle E.M. and A. Paez (Eds).
Spatial Analysis in Health Geography - Ashgate.

Refereed Publications

- 2017 P. 34. Casas I.; Delmelle E.M. and E.C. Delmelle. **Potential versus revealed access to care during a dengue fever outbreak**, *Journal of Transport & Health*, vol. 4: 18-29.
- P. 33. Kirby R.S.; Delmelle E.M. and J.M. Eberth **Advances in spatial epidemiology and geographic information systems**, *Annals of Epidemiology*, vol. 27(1): 1-9.
- 2016 P. 32. Eppes M.C; Magi B.; Hallet B.; Delmelle E.M.; 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. 31. Hohl A.; Delmelle E.M.; 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. 30. Delmelle E.M.; 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. 29. Radcliff E.; Delmelle E.M.; 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. 28. Casas I.; Delmelle E.M. 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; Delmelle E.M. 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 E.M. Delmelle. **Enhanced 3D visualization techniques in support of indoor location planning**, *Computers, Environment and Urban Systems*, vol. 50: 15-29.
- 2014 P. 25. Delmelle E.M.; 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.; Delmelle E.M., 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., Delmelle E.M. 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. Delmelle E.M.; 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. Delmelle E.M.; 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.; Delmelle E.M. and I. Casas **A Web-GIS tool for visualizing and exploring socioeconomic vulnerability to Dengue Fever in Cali, Colombia**, *Geospatial Health*, vol. 8(1): 313-316.
- P. 19. Hagenlocher M., Kienberger S., Casas I. and E.M. Delmelle **Assessing socioeconomic vulnerability to dengue fever in Cali, Colombia: statistical vs. expert-based modeling**, *International Journal of Health Geographics*, vol. 12.
- P. 18. Delmelle E.M., 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. Delmelle E.M.; Kim C.J.; Xiao 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. Delmelle E.M.; 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. Delmelle E.M.; 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. Delmelle E.M. and E.C. Delmelle. **Exploring Spatio-Temporal Commuting Patterns in a University Environment,** *Transport Policy*, vol. 21: 1-9.
- P. 13. Yan S., Delmelle E.M. 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 E.M. Delmelle **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. Delmelle E.M.; 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 E.M. Delmelle **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.; Delmelle E.M.; Batta R.; Rogerson P. and A. Blatt. **Cell Tower Location Using Geostatistics.** *Geographical Analysis*, vol. 42(3): 227-244.
- P. 8. Casas I.; Delmelle E.M. 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. Delmelle E.M. 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.; Delmelle E.M.; 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.; Delmelle E.M.; Vierling L. and L. Waits (2007). **Putting the "Landscape" in Landscape Genetics.** *Heridity*, vol. 98(3): 128-142.
- 2005 P. 4. Delmelle E.M.; 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.; Delmelle E.M.; 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.; Delmelle E.M.; 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.; Delmelle E.M.; 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

- 2016 B.C. 12. Hohl A.; Casas I.; Delmelle E.M. and W. Tang . **Hybrid Indexing for Parallel Analysis of Spatiotemporal Point Patterns.** GIScience 2016 meeting. Montreal.
- B.C. 11. Delmelle E.M.. **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. Delmelle E.M., Kanaroglou P. and A. Paez. **Introduction: Medical Geography and Spatial Epidemiology** In: Kanaroglou P., Paez A. and E.M. Delmelle (Eds.). *Spatial Analysis in Health Geography*.
- B.C. 9. Delmelle E.M.. **Space-time visualization of dengue fever outbreaks** with Meijuan Jia, Wenwu Tang, Coline Dony, Irene Casas. In: Kanaroglou P., Paez A. and E.M. Delmelle (Eds.). *Spatial Analysis in Health Geography*.
- 2013 B.C. 8. Delmelle E.M.. **Spatial Sampling.** in Fischer M. and P. Nijkamp *Handbook of Regional Science*, Springer, pp. 1385-1399.
- B.C. 7. Delmelle E.M.. **Model-based criteria for second-phase spatial sampling.** in Mateu, J. and Müller, W.G. *Spatio-Temporal Design*, Wiley, pp. 54-71.
- 2011 B.C. 6. Delmelle E.M.. **MetaHeuristics for a Non-Linear Spatial Sampling Problem.** *Geocomputation 2011, UCL*, London, U.K. (Poster).
- B.C. 5. Delmelle E.M. (2010). **Second-phase spatial sampling: local and global objectives to optimize sampling patterns.** *Accuracy 2010 Symposium*, Leicester, UK: 221-224
- B.C. 4. Delmelle E.M. . **Spatial Optimization.** In: In B. Wharf (ed). *Encyclopedia of Human Geography*, Sage Publications.
- 2009 B.C. 3. Delmelle E.M.. **Spatial Sampling.** In: Fotheringham and Rogerson (eds.) *Handbook of Spatial Analysis*. Sage Publications, pp: 183-206.
- B.C. 2. Delmelle E.M.. **Point Pattern Analysis.** In: Kitchin and Thrift. (eds.) *International Encyclopedia of Human Geography*. Oxford, Elsevier, pp. 204-211.
- B.C. 1. Delmelle E.M. 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, pp. 89-98.

External Grants

- \$670,000 "Healthy Wells". Centers for Diseases Control. **CO-PI**. 2015-2020
- \$150,000 "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*. 2010-2012.

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

Internal Grants

\$11,855 "Modeling and Visualizing the Impact of Weather on Dengue Fever Outbreaks"
UNC-Charlotte Faculty Research Grant". **PI**, Dr. Eastin CO-PI.

\$11,852 "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.

\$5,000 "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.

\$500 "Evaluating the Possibility of an on-line delivery of GIS"
UNC-Charlotte Distance-education. **PI**. 2010.

\$6,500 "Planning Grant for a Professional Science Masters in Geographic Information Science"
and Technologies" UNC PSM Initiative. **CO-PI**, Dr. J.-C. Thill PI. 2010.

\$4,000 "Sustainability Green Map"
Sustainable Idaho Initiatives, **CO-PI**, Dr. Bruce Godfrey PI. 2007-2008.

\$2,750 "An Exploration of Transportation Modal Choice Amongst Campus Community"
Sustainable Idaho Initiatives, **PI**. 2007-2008.

\$3,000 "Redesigning the University of Idaho Campus map"
Creative and Printing Services, University of Idaho, **PI**. 2007.

Invited talks

- 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. November 2016.
- Evaluating Travel Impedance Agreement among Online Road Network Data Providers.** GIS Colloquium, Geography Department, University of Heidelberg, Germany, Feb. 2016.
- Visualizing the dynamics of health-related tweets.** GIS Colloquium, Geography Department, University of Heidelberg, Germany, Feb. 2016.
- 2015 **Accelerating the detection of space-time clusters for vector-borne diseases.** NC State Geospatial Analytics Forum, October 2015.
- Modeling Travel Impedance to Medical Care for Children with Birth Defects.** Department of Geography. Dartmouth College. October 2015.
- Extracting Space-Time Patterns in Infectious Diseases.** VisCenter Seminar, Computer Science, University of North Carolina at Charlotte, March 2015.
- 2014 **Spatial Analysis in Health Geography: GIS Linkages and Computational Challenges.** Geography and Geospatial Science Working Group, Centers for Disease Control, September 2014.
- Visualizing space-time uncertainty of dengue fever outbreaks.** Center for Geoinformatics, University of St. Andrews, Scotland, March 6 2014.
- Space-time signatures of infectious diseases: visualization and computational challenges.** Department of Geography, University of Idaho. March 31 2014.
- 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., U.S.A.

- 2011 **Solving a Multi-Period School Location Problem with Capacity Constraints 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.
- 2009 **Making Sustainable Transportation Work.** *Annual Meeting of the Association of American Geographers*, Las Vegas. (Invited panel)
- 2008 **A GIS-based space-time analysis of health service diffusion.** *Spatial Economics Seminar*, CORE, Louvain-la-Neuve, Belgium.

Conference Presentations

- 2016 Delmelle E.M. **Visualizing the dynamics of health-related tweets opportunities and computational challenges**, Paper, *111th Meeting of the American Association of Geographers*, San Francisco, CA, U.S.A.
- Deng J. and E.M. Delmelle **An Interactive Approach to Detect Space-Time Patterns of Landscape Change**, Paper, *111th Meeting of the American Association of Geographers*, San Francisco, CA, U.S.A.
- Desjardins M., Delmelle E.M. and J. Deng. **Designing Spatially Cohesive Nature Reserves with Backup Coverage**, Paper, *111th Meeting of the American Association of Geographers*, San Francisco, CA, U.S.A.
- Hohl A., Delmelle E.M., Tang W. and I. Casas **Spatiotemporal Domain Decomposition and Indexing for Discovery of Disease Patterns Using Parallel Computing**, Paper *Southeastern Division of the American Association of Geographers Meeting*, Colombia, SC, U.S.A.
- 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**, Poster, *Southeastern Division of the American Association of Geographers Meeting*, Colombia, SC, U.S.A.
- 2015 Delmelle E.M. and I. Casas. **Dynamics of Dengue Fever Outbreaks at Different Space-Time Granularities**, Paper, *110th Meeting of the American Association of Geographers*, Chicago, IL, U.S.A.
- Hohl A., Delmelle E.M. and W. Tang. **3D domain decomposition for parallel processing of massive spatiotemporal geographic data**, Paper, *110th Meeting of the American Association of Geographers*, Chicago, IL, U.S.A.
- Hohl A., Delmelle E.M. and W. Tang. **Spatiotemporal domain decomposition for massive parallel computation of space-time kernel density**, Paper, *The First International Symposium on Spatiotemporal Computing*, George Mason University, Fairfax, Virginia, USA.
- Hohl A., Delmelle E.M., Tang W. and I. Casas. **Accelerating the detection of space-time clusters for vector-borne diseases**, Paper, *Geomed*, Florence, Italy.
- Marsh D., Delmelle E.M. and C. Dony. **Evaluating travel impedance agreement among online road network data providers**, Paper, *International Conference on Location-Based Social Media*, Athens, GA, U.S.A.

Delmelle E.M. and D. Marsh **Can OpenStreetMap be trusted for Modeling Travel?** *Annual Meeting of the Southeastern Division of the American Association of Geographers*, Pensacola, FL,U.S.A.

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)*.

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 Association of American Geographers*, Tampa, FL, April 2014.

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 Association of American Geographers*, Tampa, FL, April 2014.

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 Association of American Geographers*, Tampa, FL, April 2014.

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 Association of American Geographers*, Tampa, FL, April 2014.

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., U.S.A.

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, U.S.A.

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, P. and I. Thomas. **A multi-period capacitated school location problem with modular equipments and age restrictions**. *Annual Meeting of the Association of American Geographer*, February 2012, NY, U.S.A.

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*, February 2012, NY, U.S.A.

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 Association of American Geographers*, February 2012, NY, U.S.A.

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**, *Informis*, 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 Association of American Geographers*, Seattle, Washington, U.S.A.

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 Association of American Geographers*, Seattle, WA, U.S.A.

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.

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.

2010

Delmelle, E.M. and J.-C. Thill. **Solving a Multi-Period School Location Problem with Capacity Constrains Using Tabu Search**. *Informis*, Austin, Texas, U.S.A.

- Delmelle, E.M. **Local and Global Objectives to Optimize Sampling Patterns**
Annual Meeting of the Association of American Geographers, Washington D.C., U.S.A.
- 2009 Zhou, Y.; 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, California, U.S.A.
- Delmelle E.M. 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.S.A.
- Delmelle E.M. **GIS-Based Spatial Interaction Allocation Using Stochastic Optimization**, *European Conference on Operational Research*, Bonn, Germany.
- Delmelle E.M. **GIS-Based Spatial Analysis of Transportation Modal Choices in a Small, University Community.** *Annual Meeting of the Association of American Geographers*, Las Vegas, NV, U.S.A.
- Delmelle, E.C.; Casas, I. and E. M. Delmelle. **Healthcare Accessibility: A Comparison of Public Transport Systems, Cali, Colombia.**
Annual Meeting of the Association of American Geographers, Las Vegas, NV, U.S.A.
- Delmelle, E.M. and S. Li. **GIS-based bus stops allocation.** Poster, *Meeting of the Southeastern Division of the Association of American Geographers*, Greensboro, NC.
- 2008 Delmelle, E.M. and I. Casas. **Space-Time Clustering of Hospital Patients in Cali, Colombia**
Annual Meeting of the Association of American Geographers, Boston, Massachusetts, U.S.A.
- Delmelle, E.M.. **Additional spatial sampling for image reconstruction**
North American Meetings of the Regional Science Association International, NY, U.S.A.
- 2007 Delmelle, E.M.; 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, Georgia, U.S.A.
- Delmelle, E.M. and A. T. Murray. **Spatial Sampling and Location Modeling**
Annual Meeting of the Association of American Geographers, San Francisco, CA, U.S.A.
- 2006 Delmelle, E.M. 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.
- Delmelle, E.M.. **A new method to support second-phase spatial sampling in a covariate field using regression confidence bands.***Association of Annual Meeting of the Association of American Geographers.* Chicago, IL.
- 2005 Casas, I.; Delmelle, E.M. and A. Malik. **An Automated Network Generation Procedure for Routing of UAVs: Improvements and Sensitivity Analysis.**
Annual Meeting of the Association of American Geographers. Denver, CO.
- Batta, R.; 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 Delmelle, E.M.; Rogerson, P.; Akella, M. and R. Batta **Using Topographic Information to Improve the Mapping of Cell Phone Signal Strength.**
Annual Meeting of the Association of American Geographers. Philadelphia, PA, U.S.A.

Akella, M.; 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, U.S.A.

II. Teaching

██████████	<p>Teaching Activities - (number of students)</p> <p>*: Undergraduate course, **: Cross-listed UG/GR course, ***: Graduate course.</p>
UNC-Charlotte	<p>Fundamentals of GIS**: Fall 2008(22), Spring 2009(15), Spring 2010(29) Spring 2011(30), Fall 2014(27 + 2 audits).</p> <p>GIS Programming**: Fall 2009(10 + 2 audits), Fall 2010(15), Fall 2011(13), Fall 2015(24) Spring 2013(13), Fall 2014(7 + 1 audit).</p> <p>Cartography*: Spring 2012(11).</p> <p>Medical Geography*: Spring 2014(16), Spring 2015(13), Spring 2016(29)</p> <p>Spatial Database Development with GPS and GIS**: Spring 2010(11).</p> <p>GIS for Socio-Economic Applications**: Spring 2011(9).</p> <p>GIScience and Technologies***: Fall 2015(15), Fall 2016(15), Fall 2017.</p> <p>Spatial Optimization***: Fall 2008(15), Fall 2010(8), Spring 2013(15) Spring 2015(8), Fall 2016(10).</p> <p>Geovisualization***: Fall 2009 (11), Fall 2011 (7), Spring 2014 (11), Fall 2017.</p>
University of Idaho	<hr/> <p>GIS-Primer*: Fall 2005 (56&51)/Spring 2006 (69)/Fall 2006 (38)/Spring 2007 (61).</p> <p>Geovisualization**: Spring 2007 (6) / Spring 2008 (19)</p> <p>Spatial Analysis and Modeling**: Spring 2007 (18)/ Spring 2008 (25)</p> <p>Spatial Support Decision Techniques**: Fall 2006 (13)</p>
SUNY Buffalo	<hr/> <p>Geographical Information Systems**: Summer 2005 (15)</p>
██████████	<p>Graduate Students, main advisor</p>
<u>Current students</u>	<p>Jing Deng-Ph.D. (co-advised with Dr. Wang), Ari Whiteman-Ph.D., Michael Desjardins-Ph.D. Claudio Owusu-Ph.D., Alexander Hohl-Ph.D. (co-advised with Dr. Wenwu Tang)</p>
Coline Dony	<p>Better Access to Parks to Improve Population Health In Mecklenburg County, N.C. (2016). (Ph.D)</p>
Elizabeth Major	<p>Exploring SNAPscapes: Making Sense of North Carolina's Food Access Landscapes with Geodemographic Segmentation (2017).</p>
Michael Desjardins	<p>Modeling Compactness in Reserve Design with Backup Requirements (2016).</p>
Miriam McManus	<p>Modeling Spatial Attractiveness in North Carolina Wine Tourism (2016).</p>
Kelly Brown	<p>Using elevation information to improve the accuracy of climate data interpolation in Colombia (2015).</p>
Derek Marsh	<p>An Evaluation of Travel Impedance Uncertainty Across Online Network Data Providers (2014).</p>
Katie Zyger	<p>Individual and neighborhood influences on asthma quality of life in Charlotte, NC (2014).</p>
Coline Dony	<p>Modeling Accessibility to Specialty Clinics (FL.) in GIS for Children with Birth Defects (2012)</p>
Hongmei Zhu	<p>Developing a web-based GIS toolkit for the monitoring of diseases (2012).</p>
Joshua Wexler	<p>Modeling the impact of weather indicators on the magnitude of disease occurrences.(2012).</p>

Scott Whittington GIS Modeling of Disparities in Access to Recreation Spaces and Parks (2011).
 Shuping Li GIS-Based Spatial Interaction Allocation with Heuristic Optimization Methods (2010).
 Sisi Yan The Impact of a Light Rail System on Single Family Property Values in Mecklenburg County, NC, from 1997 To 2008. (2010).

Graduate Students, committee member

Current students Tonya Farrow-Chestnut (Ph.D.), Abdollah Mohammadi (Ph.D., INES), Setareh Torabzadeh (Ph.D., INES), Linfeng Gong (Ph.D., INES).

2017 Wenpeng Feng (Ph.D.), Laurie Garo (Ph.D., Education), Kanya Mukoko (Ph.D., INES)
 Todd Eaglin (Ph.D., Computer Sciences)

2016 Jiyang Shi (M.A., Geog.), Meijuan Jia, (M.A. Geog.), Pooja Najaf (Ph.D., INES)
 Thomas Polk (Ph.D., Computer Sciences)

2015 Chenjun Ling (M.A. Geog.), Benjamin Futrell (Ph.D., INES)

2014 Elizabeth Radcliff (Ph.D., Health Sciences), Jae Soen Son (Ph.D.), Dash, Lopita (M.S. Earth Sc.)
 Demirel, Edil (Ph.D., INES), Griffen Angel (M.A. Geog.)

2013 Keith Waters (M.A.)

2012 Melanie Johnson (Ph.D., Idaho), Rui Shen(M.A. Geog.), Min Chen(M.A. Geog.)
 Meng Jia(M.A. Geog.).

2011 David Cook(M.A. Geog.), Alexander Hohl (M.A. Geog.), Melissa Karlin (Ph.D, INES)
 Maher Haddad(M.S.), G. Thomas (MPH, Public Health)

2009 Jennifen Jensen (Ph.D, Idaho), Xiaojia Wang(M.A. Geog.), Xuchu Meng(M.A. Geog.)
 Shikai Tang(M.A. Geog.)

2008 J. Blackwell(M.A. Geog.), Stephen Peterson (Ph.D, Idaho), M. Monahan (M.S., Idaho)

2006 J. Groenleer (M.S., Idaho), D. Harsburger (M.S., Idaho).