

Sarah Searcy  
August 2018



## **Sarah Searcy**

Bicycle and Pedestrian Program Manager  
Institute for Transportation Research and Education  
North Carolina State University, Centennial Campus  
Raleigh, NC 27695-8601  
**Email:** ssearcy@ncsu.edu **Tel:** 919/513-3482

## **Technical Skills**

Advanced research skills, including research design and implementation; data collection, management, cleaning, validation, and statistical analysis; technical writing; and GIS analysis including map layout and design. Project management experience as Principal Investigator (PI). Supervisory management experience including interviewing, hiring, training, and supervision.

## **Degrees Completed**

- Graduate Certificate in Geospatial Information Science (GIS), NCSU, December 2016
- MA in Sociology, East Carolina University, May 2012
  - \* 4.0 GPA, Academic Achievement Award
  - \* 2-year Graduate Scholar Award winner
  - \* Member of AKD, National Sociology Honors Society
- BA in Anthropology and Art, East Carolina University, May 2009
  - \* Graduated Summa Cum Laude with University Honors
  - \* Phi Kappa Phi Outstanding Senior Award/Senior of the Year: Anthropology Department
  - \* 4-time Undergraduate Research Assistantship recipient
  - \* 2-time Undergraduate Research and Creative Activities (URCA) grant recipient

## **Fellowships Awarded**

- Fulbright-Nehru English Teaching Assistantship  
USIEF, New Delhi, India, July 2009-April 2010
- William R. Kenan Fellowship to the Penland School of Crafts  
Penland, NC, May 2007

## **Select Experience**

### Targeted Pedestrian Yielding Enforcement, NC Governor's Highway Safety Program

Assisted with the development of pedestrian yielding intervention plans that vary in duration and intensity. Assisted with research site selection. Analyzed and summarized data collected from a targeted yielding campaign to determine the level of enforcement needed to change driver yielding behavior using protocols developed through the Watch For Me NC Safety Campaign.

### Bicycle and Pedestrian Data Collection, NCDOT

Assists with the development of non-motorized counting programs to determine bicycle and pedestrian activity levels in North Carolina. Assists with site selection, installation of devices, quality control checks on volume data, and analysis of trends. Assists with the design and population of a bicycle and pedestrian count database in line with FHWA's Transportation Monitoring Guide (TMG) formatting conventions. Assists with data analysis and the development of summary statistics.

Evaluating the Economic Contribution of Shared Use Paths in North Carolina, NCDOT

Served as lead statistical analyst. Assisted with the collection, cleaning, and management of survey and count data collected at a sample of shared use paths in North Carolina. Assisted with the coordination of subcontractors on their analysis tasks. Generated and analyzed descriptive statistics, created tools to allow survey data to be visualized using a GIS, and assisted with the development of technical memorandums, final report, and summary brochure.

Rail Corridor Trespass Severity Assessment, NCDOT (co-PI)

Developed a sampling plan and data collection schedule for thermal video data collection at a sample of trespassing hot spots along the Piedmont corridor. Supervises data coding and the production of a dataset that provides a count of trespassing events and an estimate of the trespassing frequency at the hotspots, as well as additional attributes for each trespassing event, such including time of day, duration, direction of travel, whether the trespasser is alone or in a group, group size, whether the trespasser crossed the tracks or traveled along the tracks, and basic information about the trespasser's activity (walking, standing, sitting, laying). Performs preliminary modeling to estimate the severity of trespassing along the Piedmont corridor.

Public Opinions of Roadway Assets Using Roadway Reviews and Focus Groups, NCDOT

Served as lead statistical analyst. Assisted with the collection, entry, cleaning, and management of survey and focus group data collected at a sample of locations across North Carolina. Generated and analyzed descriptive statistics, created summary visuals, and assisted with writing the final technical report.

TOPR #34 – Accelerating Roundabout Implementation in the United States, FHWA

Conducted a multivariable regression analysis of yielding behavior in relation to geometric factors at a sample of roundabout crosswalks located in the United States. Developed a model to determine whether significant relationships exist between geometric factors and yielding rates at the trial roundabout crosswalks and to predict driver yielding rates as a function of geometric factors. Assisted with writing the final technical report.

NCHRP 3-78b – Guidelines for the Application of Crossing Solutions at Roundabouts and Channelized Turn Lanes to Assist Pedestrians with Vision Disabilities, NCHRP

Assisted with the collection, entry, and management of wayfinding data collected at a sample of roundabout and channelized turn lane crosswalks located in the United States. Generated and analyzed descriptive statistics, conducted a correlation analysis, and tested for statistical differences to determine whether roundabout and channelized turn lane site characteristics are significantly associated with wayfinding errors. Assisted with writing the final technical report.

Additional Analysis of National Child Restraint Use Special Study (NCRUSS), NHTSA

Served as statistician. Developed SAS programs and conducts and summarizes statistical analyses in accordance with research questions related to child restraint use and misuse in passenger vehicles.

2017 North Carolina Observational Survey of Seat Belt Use, NC Governor's Highway Safety Program

Served as State statistician. Updated sampling frame data and reselected observation sites in compliance with the Uniform Criteria for State Observational Surveys of Seat Belt Use. Developed a data collection schedule including assignment of observation times, observation procedures, and data collection quality control. Developed data collection training materials and trained data collection staff. Responsible for generating estimate of the statewide seat belt use rate, standard error, and nonresponse rate in compliance with NHTSA annual reporting requirements.

Research and Technical Support for NCDOT Strategic Prioritization, NCDOT (co-PI)

Served as co-PI and lead statistical analyst. Developed and applied a procedure for generating peak average daily traffic (PADT) factors for use in NCDOT strategic prioritization efforts. Estimated segment-specific PADT factors from available continuous and seasonal count data, developed default PADT factors for primary and secondary routes, produced a GIS-enabled roadway map to display PADT factor results, developed a data collection specification for generating future PADT factors, and developed coverage count sampling plans for the interstate network and for NC counties with limited data for producing PADT factors.

Impact of Development Density on K-Factors (PI), NCDOT

Served as PI and lead statistician. Developed a modeling approach incorporating longitudinal continuous count and roadway network data for North Carolina to estimate K-factor change based on facility attributes and socioeconomic factors, including variations in area type.

**Research Projects**

*2019 North Carolina Observational Survey of Seat Belt Use*

Oct. 2018 – Sept. 2019, GHSP

*Rail Network Trespass Statewide Severity Assessment and Predictive Modeling (PI)*

Aug. 2018 – July 2020, NCDOT

*Yielding Compliance at High Visibility Crosswalks*

Aug. 2018 – May 2021, NCDOT

*Defining Contextual Variables Related to Seat Belt Use in Fatal Crashes*

Oct. 2017 – Sept. 2019, NHTSA

*2018 North Carolina Observational Survey of Seat Belt Use*

Oct. 2017 – Sept. 2018, GHSP

*Investigation of Short Duration Count (SDC) Requirements for Estimating Annual Average Daily Pedestrians (AADP) (PI)*

Sept. 2017 – Dec. 2017, NCDOT

*Middle Fork Greenway Study*

Aug. 2017 – Dec. 2017, Blue Ridge Conservancy

*Peak Spreading Tool Implementation (PI)*

Aug. 2017 – July 2018, NCDOT

*Investigation of Short Duration Count (SDC) Requirements for Estimating Annual Average Daily Bicyclists (AADB) (PI)*

Feb. 2017 – May 2017, NCDOT

*High Point Greenway Study*

Oct. 2016 – Dec. 2016, Southwest Renewal Foundation (SRF)

*Additional Analysis of National Child Restraint Use Special Study (NCRUSS)*

Oct. 2016 – Mar. 2018, NHTSA

*2017 North Carolina Observational Survey of Seat Belt Use*  
Oct. 2016 – Sept. 2017, GHSP

*Impact of Development Density on K-Factors (PI)*  
Aug. 2016 – July 2017, NCDOT

*Rail Corridor Trespass Severity Assessment (co-PI)*  
Aug. 2016 – July 2018, NCDOT

*Targeted Pedestrian Yielding Enforcement*  
Oct. 2015 – Sept. 2016, GHSP

*Public Opinions of Roadway Assets Using Roadway Reviews and Focus Groups*  
Aug. 2015 – July 2016, NCDOT

*Research and Technical Support for NCDOT Strategic Prioritization (co-PI)*  
April 2015 – July 2017, NCDOT

*Evaluating the Economic Contribution of Shared Use Paths in North Carolina*  
March 2015 – Feb. 2018, NCDOT

*NCDOT Customer Service Survey*  
Aug. 2014 – July 2015, NCDOT

*Assessment of Automated Sign Retroreflectivity Measurement*  
Feb. 2014 – Aug. 2015, NCDOT

*Reduction in Railroad Right-of-Way Trespassing Incidents*  
Sept. 2014 – Aug. 2016, NCDOT

*Bicycle and Pedestrian Data Collection*  
Nov. 2013 – Oct. 2017, NCDOT

*American Tobacco Trail Study*  
May 2013 – Aug. 2014, NCDOT, BCBSNC, East Coast Greenway Alliance, Helen & William Mazer Foundation

*NCHRP 3-78b - Guidelines for the Application of Crossing Solutions at Roundabouts and Channelized Turn Lanes to Assist Pedestrians with Vision Disabilities*  
May 2013 – Aug. 2015, NCHRP

*Trip Making Patterns of North Carolina's University Students*  
Aug. 2012 – July 2014, NCDOT

*TOPR #34 - Accelerating Roundabout Implementation in the United States*  
Sept. 2011 – Feb. 2014, FHWA

## Professional Experience

- Research Assistant, ITRE, Raleigh, NC (8/2014-7/2016)
  - Provided technical research assistance on a range of motorized and non-motorized transportation research projects
- FARS Analyst, North Carolina Division of Motor Vehicles, Raleigh, NC (3/2014-8/2014)
  - Implemented the Fatality Analysis Reporting System (FARS) for the National Highway Traffic Safety Administration (NHTSA) in the state of North Carolina
- Bicycle and Pedestrian Program Intern, ITRE, Raleigh, NC (8/2013-3/2014)
  - Cleaned and analyzed survey and count data for a project examining behavioral impacts on the American Tobacco Trail in Durham, NC before and after the completion of a major pedestrian overpass
- Geocoder, UNC-HSRC, Chapel Hill, NC (12/2012-4/2013)
  - Geocoded motor vehicle-pedacyclist collisions that occurred in North Carolina from 2007-2011 for a NCDOT-funded project and generated reports on the geocoded data
  - Proofed and edited assessment and policy documents and helped compile case studies for the NCDOT Complete Streets program
- Research Assistant, East Carolina University, Greenville, NC (8/2010-6/2012)
  - Produced twenty-nine maps for an undergraduate sociology textbook (Jacobs, AJ. 2012. The World's Cities: Contrasting Regional, National, and Global Perspectives. Routledge: New York.)
- Survey Researcher, Center for Survey Research, East Carolina University, Greenville, NC (12/2010-3/2011)
  - Administered telephone surveys for a North Carolina Coastal Communities Survey that investigated attitudes towards coastal environmental issues, including severe weather impacts and global warming
- Educational and Curatorial Intern, Smithsonian Center for Folklife and Cultural Heritage, Washington, DC (5/2008-8/2008)
  - Evaluated the 2008 Smithsonian Folklife Festival as an experiential learning environment, focusing on the “Bhutan: Land of the Thunder Dragon” program; resulted in a detailed report on effective and ineffective presentation methods in the program and a proposal for educating local high school and university students to be presenters at subsequent Folklife Festivals
  - Performed curatorial research for an African Arts of Adornment exhibition

## Publications

- Searcy, Sarah, Daniel Findley, Joseph Huegy, Mei Ingram, Bing Mei, Joyendu Bhadury, Chao Wang. “Effect of residential proximity on university student trip frequency by mode.” *Travel Behaviour and Society*, January 2018.
- Jackson, Kristy, Sarah O’Brien, Sarah Searcy, and Shannon Warchol. “Quality Assurance and Quality Control Processes for a Large Scale Bicycle and Pedestrian Volume Data Program.” In *Transportation Research Record: Journal of the Transportation Research Board*, No. 2644, Transportation Research Board of the National Academies, Washington, D.C. 2017.
- Davis, Joy, Chris Cunningham, Daniel Findley, Sarah Searcy, James Martin, and Lonnie Watkins. “Relating Public Opinions of Roadway Assets to Field Data Using Surveys and Focus Groups.” In *Transportation Research Record: Journal of the Transportation Research Board*, No. 2613, Transportation Research Board of the National Academies, Washington, D.C. 2017.
- Yeom, Chunho, Sarah Searcy, Daniel Findley, Bastian Schroeder. “A New Method to Account for Seasonal Peak Traffic Volumes in Project Prioritization.” *ITE Journal*, August 2017.
- Cook, Thomas, Sarah O’Brien, Kristy Jackson, Daniel Findley, and Sarah Searcy. “Behavioral Effects of Completing a Critical Link in the American Tobacco Trail.” In *Transportation Research*

*Record: Journal of the Transportation Research Board, No. 2598*, Transportation Research Board of the National Academies, Washington, D.C., 2016, pp. 19-26.

- Findley, Daniel J., J. Douglas Small, Wah Tran, Adrienne Heller, Steven A. Bert, Sarah E. Searcy. "Economic Contribution of the North Carolina Ports." North Carolina State Ports Authority, November 2014.
- Searcy, Sarah and Laura Wagner. "East Boulevard Road Diet Case Study." Complete Streets NC, 2013.
- Searcy, Sarah and Laura Wagner. "Weaver Dairy Road Improvement Case Study." Complete Streets NC, 2013.
- Searcy, Sarah. (2012). "Tourism, Pilgrimage, and Development in Bodhgaya, Bihar, India." MA Thesis, East Carolina University. ProQuest, UMI Dissertations Publishing, Publication No. 1510549.

Produced all **maps** for:

- Jacobs, AJ. (2012). The World's Cities: Contrasting Regional, National, and Global Perspectives. Routledge: New York.
- Jacobs, AJ. (2013). "Examining the Impacts of the New Domestic Automakers on Workers and Local Regions in Canada and the USA: A Research Report to the International Council for Canadian Studies and Canadian Embassy in Washington." 15 January (150 pages).
- Jacobs, AJ. (2012). "The Bratislava Metropolitan Region." *Cities* 29(3): in press, published online, November 12, 2011.
- Jacobs, AJ. (2012). "Collaborative Regionalism and FDI: The Case of the Southeast Automotive Core and the 'New Domestic'." *Economic Development Quarterly*, 26 (3): 199-219.
- Jacobs, AJ. (2012). "The Nest Global-City Region: Intermunicipal Income Stratification in the Tokyo Metropolitan Region, 1980 – 2007." *Urban Geography*, 33 (1): 120-146.
- Jacobs, AJ. (2011). "Ulsan, South Korea: A Global and Nested 'Great' Industrial City." *The Open Urban Studies Journal* 4 (1): 8-20.

### **Conference Proceedings/Presentations**

Searcy, Sarah, Sarah O'Brien, Jesse Chen. "18-02912 Replication of Annual Average Daily Bicyclists Estimation Methodology Based on North Carolina Count Data." Poster Session 310: Latest in Bicycle and Pedestrian Data Research. Proceedings of the 97<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Searcy, Sarah. "A Case Study of the Effect of Crosswalk Enforcement Operations on Driver Yielding Behavior at Unsignalized Mid-Block Crosswalks in Raleigh, North Carolina." Presentation to the Raleigh Bicycle and Pedestrian Advisory Committee (BPAC) at their monthly public forum, July 2017. Council Chambers of the Raleigh Municipal Building, Raleigh, NC.

Searcy, Sarah, Mathew Palmer, Daniel Findley, Kristy Jackson. "A Case Study of the Effect of Crosswalk Enforcement Operations on Driver Yielding Behavior at Unsignalized Mid-Block Crosswalks in Raleigh, North Carolina." Lecture Session: Crosswalk Enforcement and ADA Compliance. Proceedings of the APBP Professional Development Seminar, June 2017, Memphis, TN.

Searcy, Sarah, Chunho Yeom, Daniel Findley, Bastian Schroeder, and Kent Taylor. "17-00533 Peak Average Daily Traffic and Its Use in Project Prioritization." Poster Session 780: Transportation Planning Applications. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Horne, Dylan, Sarah Searcy, Christopher Cunningham, and Nick Machak. "17-01128 Predicting Railroad

Right-of-Way Trespassing Incidents.” Railroad Safety Operational Committee Meeting. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Vaughan, Christopher, Sarah Searcy, Steven Bert, Daniel Findley, Edward Foyle, Christopher Carnes, Teresa Pincus, Amelia Coley, Zachary Manfredi, and Christopher Cunningham. “17-02314 Assessment of Automated Sign Retroreflectivity Measurement.” Poster Session 452: Sign and Pavement Marking Assessment Methods, Detection Technologies, and Safety Practices. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Findley, Daniel, Sarah Searcy, and Bastian Schroeder. “17-00025 Investigation of Crosswalk Design and Driver Behaviors at Roundabouts.” Lectern Session 399: Data-Driven Approaches to Advancing Roundabouts. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Davis, Joy, Christopher Cunningham, Daniel Findley, Sarah Searcy, James Martin, and Lonnie Watkins. “17-03822 Relating Public Opinions of Roadway Assets to Field Data Using Surveys and Focus Groups.” Lectern Session 323: Driving Improved Maintenance Decisions Through Data, Part 1. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Jackson, Kristy, Sarah O’Brien, Sarah Searcy, and Shannon Warchol. “17-03067 Quality Assurance and Quality Control Processes for Large-Scale Bicycle and Pedestrian Volume Data Program.” Poster Session 285: Exploring Innovative Data Sources and Approaches for Bicycle and Pedestrian Data Collection. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Findley, Daniel, Sarah Searcy, Kristy Jackson, Sarah O’Brien, and Thomas Cook. “17-01543 Extrapolation and Factoring Methods for Recreational Greenway Trails.” Poster Session 285: Exploring Innovative Data Sources and Approaches for Bicycle and Pedestrian Data Collection. Proceedings of the 96<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Searcy, Sarah, Mathew Palmer, Daniel Findley, Kristy Jackson, and Tim Nye. “A Case Study of the Effect of Crosswalk Enforcement Operations on Driver Yielding Behavior at Unsignalized Mid-Block Crosswalks in Raleigh, North Carolina.” Poster Session. Proceedings of the 10<sup>th</sup> University Transportation Centers Spotlight Conference: Pedestrian and Bicycle Safety, Washington, DC.

Vaughan, Christopher and Sarah Searcy. “Improving Automated Sign Retroreflectivity Data Collection and Database Management Using Unique Identifiers.” Poster Session: Data, Performance Measurement, and Target Setting. Proceedings of the Transportation Research Board 11<sup>th</sup> National Conference on Transportation Asset Management, Minneapolis, MN.

O’Brien, Sarah, Kristy Jackson, Sarah Searcy, Daniel Findley, and Thomas Cook. “16-3811 Behavioral Effects of Completing a Critical Link in the American Tobacco Trail.” Poster Session 309: Innovations in Health and Transportation Research. Proceedings of the 95<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC.

Searcy, Sarah. “Pilgrimage, Tourism, and Development in Bodhgaya, Bihar, India.” Proceedings of the 75<sup>th</sup> Annual Meeting of the Southern Sociological Society, New Orleans, LA.

Searcy, Sarah. “The Economic Relationship Between India and Bhutan.” Proceedings of the 74<sup>th</sup> Annual Meeting of the Southern Sociological Society, Jacksonville, FL.

## **Committee and Panel Activities**

- Transportation Research Board
  - Friend, Standing Committee on Geographic Information Science and Applications (ABJ60)
  - Friend, Standing Committee on Statistical Methods (ABJ80)
  - Friend, Standing Committee on Safety Data, Analysis and Evaluation (ANB20)
  - Friend, Standing Committee on Pedestrians (ANF10)
  - Friend, Standing Committee on Bicycle Transportation (ANF20)