



Blythe Carter

Research Associate

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Technical Skills

Mathematics and statistical analysis; research activities including data collection, management, cleaning and processing; technical writing; advanced Python, NumPy, and Pandas; intermediate Matlab and R; Microsoft Office; transportation systems planning and engineering; bicycle and pedestrian transportation; public outreach.

Degrees

- B.S. Mathematics & B.S. Environmental Sciences, University of North Carolina at Chapel Hill, May 2014
- M.S. Civil Engineering, Transportation Systems, North Carolina State University, expected May 2021

Select Experience

North Carolina Non-Motorized Volume Data Program, NCDOT

Monitored data from over 20 bicycle and pedestrian count stations in North Carolina for inconsistencies and potential maintenance issues. Coordinated with local agencies to implement proper maintenance needs. Worked in the field to conduct maintenance on Eco-Counter pedestrian and bicycle count systems. Validated Eco-Counter equipment to create Performed Quality Assurance / Quality Control methods to clean invalid data from dataset. Processed data to create quarterly and annual data reports. Prepared Technical Briefs of each bicycle and pedestrian station. Developed web-based automated QA/QC data analytics tool for continuous bicycle and pedestrian count data processing.

Evaluating the Economic Impact of Shared Use Paths, NCDOT

Collected data on the American Tobacco Trail in Durham, NC and Brevard Greenway in Brevard, NC through user intercept surveys and manual counts. Cleaned surveys of errant and missing data. Entered data into project database. Performed statistical analysis on resulting dataset.

Glow-in-the-Dark Bike Paths Technical Assistance Request, NCDOT

Compiled current information regarding efficacy, cost, and environmental impact glow-in-the-dark transportation materials. Reviewed global glow-in-the-dark transportation/bicycle and pedestrian facilities projects. Created cost estimates of various glow-in-the-dark treatments for off-street bicycle paths.

North Carolina Observational Survey of Seat Belt Use, GHSP

Assisted team of three data observers to collect over 10,000 observations of seat belt use compliance in cities across North Carolina. Recorded driver and passenger demographics, seat belt compliance, and driver cell phone use. Data used to report statewide seat belt use and cell phone use rates for the state of North Carolina.

Smart Trips Austin, City of Austin, TX

Assisted with the development and execution of Smart Trips Austin, a personalized targeted marketing program to encourage mode-shift from single occupancy vehicle to a shared or active mode. Developed creative copy for Smart Trips materials, developed transportation behavior and attitudes survey for Smart Trips customers, developed training in program elements and motivational interview techniques for Smart Trips employees, oversaw customer service requests, and led data driven evaluation of program. The North Austin Smart Trips program was a component of Austin's USDOT Mayor's Challenge Ladders of Opportunity Award.

Research Projects

State of the Art Approaches to Bicycle and Pedestrian Counters

August 2019 – October 2020

Bicycle Volume: Counting Machine Validation & Correction, Estimating & Forecasting, and Analysis of Injury Risk

August 2019 – July 2021, NCDOT

Compare NCDOT-MSTA's School Traffic Trip Generator Calculator Estimates to Existing Conditions

August 2018 – July 2020, NCDOT

North Carolina Non-Motorized Volume Data Program

November 2013-June 2020, NCDOT

Evaluating the Economic Contribution of Shared Use Paths in North Carolina

April 2015 – February 2018, NCDOT

Glow-in-the-Dark Bike Paths Technical Assistance Request

April 2017 – August 2017, NCDOT

North Carolina Observational Survey of Seat Belt Use

March 2017 – June 2019, GHSP

2014 UNC Bike Share Capstone Project

January 2014 – May 2014, UNC-CH

April 2019

Professional Experience

- Research Associate, ITRE, Raleigh, NC (4/2019-Present)
 - Provide research assistance on transportation projects including proposal development, project coordination, and data analytics.
- Research Assistant, ITRE, Raleigh, NC (1/2017-4/2019)
 - Provided research and technical data assistance on bicycle and pedestrian transportation research projects
- Community Services Program Coordinator, City of Austin Transportation Department, Austin, Texas (2/2016-10/2016)
 - Provided programmatic assistance with active transportation encouragement programs, including event coordination, copy writing, program evaluation, and final reporting
 - Coordinated and re-designed curriculum for the City of Austin B-Cycle Benefit Course
- Environmental Educator, City of Austin Nature & Science Center, Austin, Texas (5/2015–1/2016)
 - Facilitated nature based educational science and adventure activities for children and young adults
 - Assisted in curriculum re-development of teen homeschool science program
- Americorps Service Member, Casa Verde Builders , Austin, TX (1/2015-4/2015)
 - Assisted in the maintenance and construction of sustainable and affordable homes
- Construction Intern, Lopez Island Community Land Trust, Lopez Island, WA (8/2014-10/2014)
 - Assisted in the construction of sustainable and affordable housing units
- Undergraduate Research Assistant, UNC Department of Environmental Sciences & Engineering, Chapel Hill, NC (1/2012-1/2014)
 - Provided data analysis support to porous media parallel computing model and physical model studies
- Challenge Course Facilitator, UNC Outdoor Education Center, Chapel Hill, NC (3/2012-5/2014)
 - Facilitated high ropes and low ropes team building programs for local business, church groups, and student groups
- GS-04 Park Guide, National Park Service, Wind Cave National Park, Hot Springs, SD (5/2011-8/2011, 5/2012-8/2012)
 - Designed formal cave tour programs and presented tours two to four times daily
 - Provided informal customer services assistance to park visitors

Conference Proceedings/Presentations

Carter, Blythe, Behzad Aghdashi, Sarah Searcy. "Making it Count: Non-Motorized Volume Data Quality Assurance Tools." Bicycle & Pedestrian Podium Session. 2019 NCDOT Research & Innovation Summit. Greensboro, NC.

Carter, Blythe, Sarah O'Brien. "19-01367 Glow-in-the-Dark Pathways and Transportation Materials: A Synthesis of Currently Available Technologies, Completed Projects, and Associated Costs." Lectern Session 1401: Emerging Issues in Design and Construction. Proceedings of the 2018 National Travel Monitoring Exposition and Conference, Irvine, CA.

Carter, Blythe, Sarah O'Brien. "2016-2017 Bicycle & Pedestrian Continuous Count Equipment Maintenance for NCNMVDP." Poster Session. Proceedings of the 98th Annual Meeting of the Transportation Research Board, Washington, DC.

Committee and Panel Activities

- Transportation Review Board
 - Young Member, TRB Committee on Transportation Needs of National Parks and Public Lands (ADA40)
 - Friend, TRB Committee for Bicycle Transportation (ANF20)
 - Friend, TRB Committee for Pedestrians (ANF10)
- Institute for Transportation Engineers, North Carolina State University Student Chapter President, 2018-2019
- Southeast Greenways & Trails Summit Local Host Committee, 2017

Awards

2018 John Williams Memorial Scholarship Recipient – Association of Pedestrian and Bicycle Professionals