



Kai Monast, Ph.D.

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- 2014-2022 **University of North Carolina at Chapel Hill**
Doctor of Philosophy; Department of City and Regional Planning. Research focused on performance measures in public transportation.
- 2004 **University of North Carolina at Chapel Hill**
Master of Regional Planning (MRP); Department of City and Regional Planning
- 1999 **University of North Carolina at Chapel Hill**
Bachelor of Arts (BA); Geography, Minor in Environmental Studies

EXPERIENCE

Director of the School Planning and Transportation Group, *Institute for Transportation Research and Education, North Carolina State University*

- Leads three teams of professional staff who provide
 - Technical assistance for school bus routing and operations
 - School boundary planning and out of capacity modeling
 - Public engagement

Director of the Public Transportation Group, *Institute for Transportation Research and Education, North Carolina State University*

- Leads a team of professional staff dedicated to improving public transportation using planning and technology
- Supports the North Carolina Department of Transportation (NCDOT), regional planning entities, and local transit systems;
- Designs and conducts original research related to the mobility industry and emerging trends such as microtransit;
- Advises the Director of NCDOT's Integrated Mobility Division, NCDOT's Deputy Secretary for Multimodal Transportation, the North Carolina Department of Public Instruction's Transportation Section Chief, city, school, and county officials on transportation decisions and policy changes;
- Develops performance metrics and funding allocation formulas based on these metrics
- Performs comprehensive community transportation planning and performance analysis through the development of individual system performance plans and in-depth origin/destination analyses;
- Develops service delivery improvement plans consisting of origin/destination analysis, fixed route service area analysis, financial analysis, coordination options, and business practice improvement recommendations;
- Works with the community transportation systems to improve performance through site visits, interviews, assessments, and data analysis;
- Responsible for assisting community transportation systems in North Carolina with technology implementations, operational improvements, planning for the future, and training;
- Understands various transit modes and recommends modes to for local transit systems to improve performance and meet community needs;
- Develops policies and plans for transit system technology implementations;

- Develops and teaching transit specific courses for online and in-person delivery, including dispatching, scheduling, using data, policies and practices, billing, and service delivery models;
- Collects, analyzes, and develops reports for bi-annual vehicle utilization data for 78 transit systems;
- Collects, analyzes, and develops reports for annual Operating Statistics for 104 urban and rural transit systems;
- Primary reporter of rural National Transit Database statistics for the State of North Carolina;
- Provides technical support for scheduling software developed by ITRE
- Performs other data analysis, mapping, and applied research for other transit-related as necessary.

Current Development Planner, *Town of Chapel Hill, NC*

- Helping the public and developers understand the Land Use Management Ordinance;
- Working closely with developers and other departments to analyze and review both large and small projects;
- Writing memorandums for public review boards;
- Assisting with presentations;
- Creating a new organization database system for tracking thousands of projects and land management records;
- Developing new, streamlined procedures that reduce the amount of processing time for applications.

Senior Planner II, *City of Key West, FL*

- Performing all work necessary for Key West to become a Multimodal Transportation District that places a priority on bicycling, walking, and other alternative transportation modes;
- Staff liaison to the pedestrian action committee;
- Authoring and proposing amendments to the Comprehensive Plan;
- Studying the economic and transportation effects of evolving market conditions, using and maintaining the City's GIS;
- Managing transportation data collections, analyzing the results, and authoring reports;
- Working as an information manager at the Emergency Operations Center during hurricanes;
- Conducting development review for large and small projects;
- Making presentations to the City Commission, Planning Board, and citizen groups;
- Providing assistance to local and regional transportation agencies.

Research Associate, *University of North Carolina at Chapel Hill*

- Assessed the benefits of Incident Management Assistance Patrols in collaboration with the North Carolina Dept. of Transportation. Tasks include:
- Using GIS to locate and analyze crashes on freeways;
- Researching other ITS innovations;
- Statistical analysis of crashes;
- Helping to create a tool for placing patrols in the future;
- Writing a paper and presenting at the Transportation Research Board conference.

Research Associate, *Institute for Transportation Research and Education, North Carolina State University*

- Worked to improve public transit across the state of North Carolina by:
- Designing software for transportation systems;
- Providing technical support and customization for the software;
- Helping systems analyze their routes using GIS and statistics;
- Teaching courses on how to use new technologies;
- Editing and writing, researching and disseminating information about ITS solutions;
- Making presentations at national and state conferences for transit professionals.

PUBLICATIONS

- Monast et al. *Locating and Costing Congestion for School Buses and Public Transportation*. Project E3, Southeastern Transportation Research, Innovation, Development and Education Center (STRIDE). 5/3/2022.
- Monast and Stanfield. *An Analysis of Success Plans and Performance Measures for Rural Transit Systems in*

North Carolina. Transportation Research Record 19-00253 (2019).

- Gaustad, Wright, and Monast. *Assessing Measures of Transportation Disadvantage for Public Transportation Project Prioritization*. NCDOT Research Project Report 2019-16. 2019.
- Monast and Vaughan. *Using Security Cameras to Count Passengers*. FHWA/NC/2017-16. May 2017.
- Public Transportation Group, ITRE. *A Methodology for Measuring Urban and Community Transportation Connectivity in North Carolina*. 2016.
- Monast et. al. *Economic Benefits of Transit in North Carolina*, NCDOT (2015)
- Monast and Worthy. *Applying Structured Scheduling to Increase Performance in Rural Demand-Response Transportation*, Journal of Public Transportation Volume 15, No. 3 (2012)
- *Operating Assistance Reporting*, NCDOT (2011)
- *Implementing a Benchmarking Process at North Carolina Transit Systems*, NCDOT (2010)
- *Alternative Fuels in Transit*, NCDOT (2008)
- *Effects of Basic Rural Paratransit Characteristics on Organizational Culture*, Transportation Research Board (2010)
- *Methodology for Prioritizing and Expanding Freeway Service Patrols*, TRB Paper 04-2580, Transportation Research Board (2004):
- Graduate Research Project: *Neighborhood Quality Assessment; an online tool for evaluating the built environment*

PRESENTATIONS AND PROJECTS

- Strategies for Accommodating Construction Traffic at FUJIFILM Diosynth Biotechnologies: Traffic management plan and transportation demand management strategies. May 2023.
- Challenges and Lessons Learned from Public Microtransit Pilots in North Carolina. North Carolina Public Transportation Association Annual Conference. April 2023.
- Challenges and Lessons Learned from Public Microtransit Pilots in North Carolina. North Carolina Association of Metropolitan Planning Officials Annual Conference. April 2023.
- Strategies for Increasing Transit Attractiveness. Land of Sky Metropolitan Organization. October 2022.
- Fare Free Transit. Transportation Research Board Tools of the Trade Conference. Boise, Idaho. August 2022.
- Chair of the Transportation Research Board Rural Intercity, and Specialized Transportation (AP055) Intercity Bus subcommittee (2021)
- Co-Facilitator for the North Carolina Transportation Leadership Development seminar
- “Increasing Mobility in North Carolina with Funding: How the ConCPT and Connectivity Funding Programs Aim to Enhance Rural and Intercity Transportation” Presentation at the National Conference on Rural and Intercity Bus Transportation., Breckenridge, CO, October 2018.
- EcoPRT- project liaison between the designers and researchers of the connected and autonomous microtransit vehicle and NCDOT(2017)
- Business Plan Development for Durham Council for Senior Citizens (2010)- studied transit demand, compared to available modes, and developed a plan to enhance mobility options for seniors
- Faculty member for Community Transportation Association of America (CTAA) Nebraska Institute for Transportation Coordination, Kearney Nebraska. March 2009
- Presentation at National Transit Trainers Workshop (2009)
- Two presentations based on original research at the Transportation Research Board’s Planning Applications Conference (2017, Raleigh, NC)
- Two presentations based on original research at the Rural Public and Intercity Bus Transportation conference (2016, Asheville, NC)
- Presentations based on original research at the annual Transportation Research Board conference held in Washington DC (2004, 2008, 2009, 2010, 2011, 2012, 2017)
- Presentations at the Community Transportation Association of America Conference (2000 and 2001)
- Presentation at the Illinois Rural Transit Assistance Center Conference (2017)
- Presentations at the North Carolina Rural Transportation Operators conference (2001, 2007, 2008, 2009, 2010, 2011, 2015, 2016, 2017)
- Presentations at the North Carolina Public Transportation Association conference (2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)

- Primary author of long range multimodal transportation plan for City of Key West, FL
- Primary author on transportation and economic development reports in Key West, FL
- Teaching and developing curricula, including the Paratransit Foundations distance-learning courses
- Ability to understand and analyze large amounts of transit data
- Geographic Information Systems using ArcGIS and MapInfo
- Programming and developing software using MS Access
- Familiar with different Automated Scheduling and Routing Software, Mobile Data Computers, and other transit ITS solutions and requirements for their successful implementation

ACADEMIC LECTURES

- *Transportation Funding: Importance of Data and Formulas*, Microeconomics, PLAN 710, Master's Level Course in the Department of City and Regional Planning at the University of North Carolina at Chapel Hill. Fall 2018.
- *Automated Demand Response Scheduling Software Algorithms*. Modeling, Optimization, Simulation of Transport Systems, CSE 885, Master's Level Course in the Department of Computational Science and Engineering at North Carolina Agricultural and Technical State University. Spring 2019.

AFFILIATIONS

- Chair of the Transportation Research Board Rural, Intercity and Specialized Transportation Intercity Bus Subcommittee (2022-)
- Member of the Transportation Research Board Rural, Intercity and Specialized Transportation (AP055) Committee (2018-)
- Friend of the Transportation Research Board Rural and Intercity Bus Committee (2010-2017)
- Member of the Transportation Research Board Paratransit Committee (2010-2016)
- Secretary to the Legislative Committee of the North Carolina Chapter of the American Planning Association (2006-2008)

AWARDS/NOMINATIONS

- Carolina Road Safety Fellow (2018)
- Nominated for NCSU Research and Graduate Studies Division Awards for Excellence (2009)
- Nominated for the National Transit Institute's Achievements in Transit Training Model Training Award (2008 and 2009)
- Carolina Environmental Program Student Fellow (UNC, 1999)

VOLUNTEERING

- Commissioner, Durham Bicycle and Pedestrian Advisory Commission (2021-)
- Member of the Orange County Master Aging Plan Committee 2017
- Youth soccer coach
- Transportation service delivery and technical assistance to the Lincoln Community Health Center, a non-profit community health clinic in Durham, NC
- Special Olympics
- Ronald McDonald House