FOCUS FORENSICS

MINNEAPOLIS
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TAMPA
WEST PALM BEACH

Please Respond to
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133 East 143rd Avenue
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Curriculum Vitae

Alexandra M. Boggs, Ph.D., P.E.

Professional Profile

Dr. Alexandra (Ali) Boggs is a licensed Professional Engineer at Focus Forensics with experience, education, and training in the fields of Civil Engineering, Transportation Safety, and Forensic Engineering. Her breadth of knowledge focuses on the human, vehicular, and roadway factors that lead to traffic crashes. After completing a Bachelor of Science and Master of Science in Civil Engineering from Florida Institute of Technology, she earned a Master of Science in Statistics and a Ph.D. in Civil Engineering with a specialization in Transportation Engineering Safety from the University of Tennessee, Knoxville.

Dr. Boggs is an active researcher in the Transportation Safety Engineering field. Her master's thesis evaluated the effectiveness of an emerging pavement analysis tool to measure the in-situ strength of base and subgrade layers. Her doctoral dissertation examined the entire safety spectrum of automated vehicles including their interaction with the roadway environment, their interaction with human users, and future needs for developing effective vehicle-roadway-user systems. Other research activities included investigating the safety effects of commercial vehicle parking and driver hours of service issues.

Dr. Boggs is a published author in Civil Engineering literature in areas of Pavement Analysis and Transportation Safety Engineering. Her research focuses on emerging transportation-related technology, automated vehicles, transportation safety policies, and commercial vehicle safety issues, resulting in her works being published in peer-reviewed journals, such as Accident Analysis and Prevention, Transportation Research Record, and Innovations in Geotechnical Engineering. Her achievements were reflected in being awarded the "2018 Student of the Year" for the USDOT Collaborative Sciences Center for Road Safety, interning in the National Transportation Safety Board (NTSB) Office of Highway and Safety. She remains actively involved in safety research, publications, and teaching. She is an experienced instructor at university engineering programs and has taught more than 300 undergraduate and graduate students.

At Focus Forensics, Dr. Boggs brings her knowledge of human, vehicular, and roadway factors to the analysis of collision events and Transportation Engineering systems. Her engineering consulting practice involves the investigation and analysis of incidents involving a wide scope of vehicle classifications – passenger vehicles, motorcycles pedestrians, commercial vehicles, buses, emergency vehicles, and other modes of travel. Her roadway evaluation includes roadway geometry, operations, maintenance, construction, signalization, signs and marking, roadside safety hardware, clear zone issues, and temporary traffic controls. Her application of comprehensive engineering methodology allows clients to comprehend all of the causes and potential countermeasures for a given incident or pattern of safety issues.

Contact Information

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Orlando Office

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St. Cloud, FL 34771

Education

Ph.D. in Civil Engineering
(Transportation)
University of Tennessee, Knoxville
Knoxville, Tennessee

Master of Science in Statistics
University of Tennessee, Knoxville
Knoxville, Tennessee

Master of Science in Civil Engineering
Florida Institute of Technology
Melbourne, Florida

Bachelor of Science in Civil Engineering
Florida Institute of Technology
Melbourne, Florida

Work Experience

Focus Forensics, LLC
Consultant: 2020 – 2025
Engineer: 2025 - Present

University of Tennessee, Knoxville
Graduate Teaching/Research Assistant: 2015 - 2019

National Transportation Safety Board (NTSB) Office of Highway Safety
Engineering Student Trainee: 2018 & 2019

Center for Ultra-Wide Area Resilient Electric Energy Transmission Networks (CURENT)
Mentor: 2016

Boggs Engineering, LLC
Transportation Engineering Intern: 2015

Lockheed Martin Corporation
Facilities Engineering Intern: 2013 - 2015

Global Intergy Corporation
Revit Consultant: 2014 – 2015

Florida Institute of Technology
Graduate Student Assistant: 2013 – 2015

Sam Schwartz Engineering
Transportation Engineering Intern: 2012

Licensure and Professional Certification

- Professional Engineer, State of Florida, #103004
- Professional Engineer, State of Georgia, #PE056269
- Certified Traffic Control Supervisor, American Traffic Safety Services Association (ATSSA)
- Truck-Mounted Attenuator Operator, American Traffic Safety Services Association (ATSSA)
- Certified Accident Reconstruction, Society of Automotive Engineers (SAE)
- Occupational Safety and Health Administration (OSHA)
    - 30-Hour Certification

Professional Affiliations

- Transportation Research Board (TRB)
- Society of Automotive Engineers
- Institute of Transportation Engineers
- Women's Transportation Seminar
- Phi Kappa Phi, Class Honor Society, 2015
- Tau Beta Pi, Engineering Honor Society, 2015
- Chi Epsilon, Civil Engineering Honor Society, 2011

Professional Development

American Traffic Safety Services Associations (ATSSA)

- Worker Safety Considerations for Nighttime Highway Work Zones, 2022
- Florida Advanced Maintenance of Traffic Training, 2022
- Operation and Application of Truck-Mounted Attenuators, 2024
- Guardrail Installation Training, 2026

Federal Highway Administration (FHWA)

- Work Zone Design Course, 2021
- Data-Driven Approaches to Improve Work Zone Safety, 2022
- Non-Motorized Road User Accommodations in Work Zone, 2023

Focus Forensics

- Transportation Engineering and Accident Reconstruction Insights, 2022
- Transportation Engineering and Accident Reconstruction Insights, 2024
    - Human Factors for Driver Response
    - Traffic Signal Design and Operation
    - Transportation Engineering Sight Distance Standards
    - Automotive Mechanical Systems and Data Acquisition
    - Photogrammetric Methods
    - Video Analysis with Telemetry Data
    - LIDAR Scanning and Data Processing
    - Virtual Crash Applications for Simulation and Animation

  - PC Crash Applications for Steering and Yaw Rate
  - Expert Testimony Regulations and Standards
  - Commercial Vehicle EDR Data Extraction and Analysis
  - Vehicle EDR Systems for Toyota and General Motors
- Transportation Engineering and Accident Reconstruction Insights, 2025
  - EDR Extraction and Analysis Methods for Video Radar Decision Units (VRDU)
  - Acquisition and Analysis Methods for Temporary Roadway Conditions
  - LIDAR Scanning and Data Processing
  - Air Brake Testing Standards and Techniques
  - Heavy Vehicle EDR Extraction and Analysis Methods
  - Drone Mapping Techniques and Processing
  - Data Processing and Analysis with Cloud Compare
  - Photogrammetry Software Methods and Techniques
  - Technology for Capturing Photo/ Video Demonstratives of Available Driver Views
  - Telemetry Overlay Software Techniques and Processing
  - VCrash Animations and Simulations for Pedestrian and Bicycle Collisions
  - Monte Carlo Statistical Analysis for Uncertainty Ranges
  - Human Factors Analysis of Road User Detection and Response
  - Transportation Engineering Design and Limitations for Micromobility Vehicles on Sidewalks
  - EDR Vehicle Yaw and Steering Data Simulation, Analysis and Modeling
  - Contextual Evaluation of Slow-Moving Lead Vehicle Scenarios and Looming Calculations
  - Comprehensive Context Points for Collision Reconstructions

National Highway Institute (NHI)

- Automated Traffic Signal Performance Measures (ATSPM), 2024

National Transportation Safety Board (NTSB)

- Highway Safety Investigations HS 101 Course, 2018

Northwestern University Center of Public Safety

- Traffic Crash Investigation 1, 2024
- Advanced Driver Assistance Systems for the Crash Reconstructionist, 2026

PhotoModeler Technologies

- PhotoModeler for Collision Investigation, 2023

Society of Automotive Engineers (SAE)

- Accident Reconstruction, The Autonomous Vehicle and ADAS, 2020
- Fundamentals of Vehicle Dynamics, 2021
- Vehicle Crash Reconstruction: Principles and Technology, 2022
- Driver Distraction from Electronic Devices: Insights and Implications, 2023
- Applying Automotive EDR Data to Traffic Crash Reconstruction, 2023
- Advanced Applications of Heavy Vehicle EDR Data, 2023
- Photography for Accident Reconstruction, 2025
- Drones for Mapping Accident Reconstruction Sites, 2025

Virtual Crash

- Collision Simulation and Reconstruction, 2021

World Reconstruction Exposition (WREX)

- World Reconstruction Exposition (WREX), 2023

Technical Reports and Publications

Boggs, A.M., Wali, B., Khattak, A.J., "Exploratory analysis of automated vehicle crashes in California: A text analytics & hierarchical Bayesian heterogeneity-based approach," *Accident Analysis & Prevention* 135 (2020): 105354

Boggs, A.M., Arvin, R., Khattak, A.J., "Exploring the who, what, when, where, and why of automated vehicle disengagements," *Accident Analysis & Prevention*, 136 (2020): 105406.

Boggs, A.M., Hezaveh, A.M., Cherry, C.R. "Shortage of commercial vehicle parking and truck related interstate ramp crashes in Tennessee," *Transportation Research Record,* 2673.10 (2019): 153-163.

Technical Reports and Publications Continued

Cherry, C., Boggs, A., Franceschetti, N., Ling, Z., & Nambisan, S. "Truck Parking Facilities and Ramp Parking: Role of Supply, Demand, and Ramp Characteristics," No. RES2016-07. 2018.

Cosentino, P. J., Shaban, A. M., Boggs, A. M. "Predicting Bearing Ratios of Granular Soils Using Dynamic Cone Penetrometer and Modified PENCEL Pressuremeter Tests." *Innovations in Geotechnical Engineering* (2018): 68-86.

Denis, A., Boggs, A., Jensen, M. "*Undecided Engineers: A First Year General Engineering Program*." Proceedings of the ASEE Southeast Section Conference, Macon, GA. 2014.

Seminar and Course Presentations

"Analyzing On-Road Automated Vehicle Disengagements over Time and by Manufacturer" Transportation Research Board 99th Annual Meeting, Washington, D.C., 2020.

"Exploring the Who, What, When, Where, and Why of Automated Vehicle Disengagements" Transportation Research Board 99th Annual Meeting, Washington, D.C., 2020.

"Analyzing Automated Vehicle Crashes in California: Application of a Bayesian Binary Logit Model" Transportation Research Board 98th Annual Meeting, Washington, D.C., 2019.

"Safety in the Connected and Automated Vehicle Era: A US Perspective on Research Needs" Transportation Research Board 98th Annual Meeting. Washington, D.C., 2019.

"Shortage of Commercial Vehicle Parking and Truck-Related Interstate Ramp Crashes in Tennessee" Transportation Research Board 98th Annual Meeting, Washington, D.C., 2019.

"Commercial Vehicle Parking's Influence on Interstate Ramp Crashes" Lifesavers National Conference on Highway Safety Priorities, San Antonio, Texas, 2018.

"Shortage of Commercial Vehicle Parking Influence on Interstate Ramp Crashes in Tennessee" 5th Annual UTC Conference for the Southeastern Region, Gainesville, Florida, 2017.

"Shortage of Commercial Vehicle Parking Influence on Interstate Ramp Crashes in Tennessee" Tennessee Section Institute on Transportation Engineers Summer Meeting, Gatlinburg, Tennessee, 2017.

"Truck Parking Facilities and Ramp Parking: Role of Supply, Demand, and Ramp Characteristics" Lifesavers National Conference on Highway Safety Priorities, San Antonio, Texas, 2017.

"Truck Parking Facilities and Ramp Parking: Role of Supply, Demand, and Ramp Characteristics" Women in STEM Symposium, Knoxville, Tennessee, 2017.

"Truck Parking Facilities and Ramp Parking: Role of Supply, Demand, and Ramp Characteristics" Transportation Research Board 96th Annual Meeting, Washington, D.C., 2017.

"The Role of Headway Distribution and Capacity of Interstate 40 Lane Management" Southeastern Transportation Research Conference, Knoxville, Tennessee, 2016

"Development and Testing of the Miniaturized Pavement Pressuremeter" Florida Department of Transportation Geotechnical Research in Progress Meeting. Gainesville, Florida, 2016.

"Undecided Engineers: A First Year General Engineering Program" American Society for Engineering Education Southeast Section Conference. Macon, Georgia, 2014.

Thesis/ Dissertation

"Harnessing Crash and Disengagement Data to Analyze the Safety Performances of Automated Vehicles," Ph.D. Dissertation, University of Tennessee, Knoxville, 2019.

"Correlating Miniaturized Pressuremeter and Dynamic Cone Penetrometer Data for Unbound Pavement Layers," Master's Thesis, Florida Institute of Technology, 2015.

Awards

- University of Tennessee Chancellor's Fellowship, 2015-2019
- Tennessee Section Institute of Transportation Engineers John R. Harper Memorial Scholarship, 2016 & 2019
- Eno Center for Transportation Leadership Development Conference Fellow – Lillian Borrone Alumni Award Winner, 2019
- University of Tennessee Chancellor's Extraordinary Professional Promise, 2019
- University of Tennessee Graduate Student Senate Travel Award, 2017 & 2019
- US Department of Transportation National University Transportation Center for Safety - Collaborative Sciences Center for Road Safety - Student of the Year, 2018
- American Road and Transportation Builders Association Future Industry Leader Spotlight Award, 2018
- Women's Transportation Seminar Central Virginia Leadership Legacy Scholarship, 2018
- Lifesavers National Conference Traffic Safety Scholarship, 2017-2018
- Middle Tennessee Chapter of American Society of Highway Engineers John R. Harper Scholarship, 2018
- Southern District Institute of Transportation Engineers Annual Best Student Paper Competition – First Place, 2018
- Tennessee Section Institute of Transportation Engineers Annual Best Student Paper Competition – First Place, 2017-2018
- Tennessee Section Institute of Transportation Engineers William (Bill) Moore Jr Scholarship, 2018
- Southern District Institute of Transportation Engineers Annual Best Student Paper Competition – Second Place, 2017
- Tennessee Section Institute of Transportation Engineers Traffic Bowl Competition Champions, 2016-2017
- Great Lakes National Scholarship, 2015-2017
- Florida Institute of Technology Dean's List 2009-2010, 2012-2013
- Florida Institute of Technology Most Outstanding Junior in Civil Engineering, 2010
- Bailey Family Foundation Scholarship, 2009-2013
- Florida Institute of Technology Intercollegiate Volleyball Team, 2009-2012
- Sunshine State Conference Commissioner's Honor Roll, 2009-2011
- Florida Institute of Technology Athletic Director's Honor Roll, 2009-2011

Leadership Roles

University of Tennessee Graduate Student Senate, Senator of Civil and Environmental Engineering Department, 2018-2019

University of Tennessee Institute of Transportation Engineers Student Chapter, President 2017-2018, Vice-President 2015-2017

University of Tennessee Women's Transportation Seminar, President 2017-2018

Florida Institute of Technology Chi Epsilon, Marshall, 2012-2013