

Transportation Engineering and Development Laboratory (TREND Lab)

QUICK FACTS

- Who we are** We are an engineering research laboratory conducting applied research in Transportation Engineering. Our areas of expertise include Traffic Operations and Management; Transportation Safety; Work Zone Traffic Control; Intelligent Transportation Systems (ITS); and Livable & Sustainable Community Planning.
- Our facility** Our 505 sq. ft. research facility, located at 211 Hoehn Engineering Building, is equipped with six Dell Opti-Plex workstations, four handheld traffic counters, and four pneumatic traffic detectors. Our software library includes Vissim, Visum, VisWalk, Vistro, MATSim, CORSIM, HCS, ArcGIS, and Synchro.
- Human Resources** Our transportation research team includes Dr. Virginia Sisiopiku and Mr. Andrew Sullivan working alongside with several Graduate Research Assistants, one postdoctoral fellow and a visiting scholar.
- Our sponsors** Our research is funded by a variety of sponsors including the US Department of Transportation; the Alabama Department of Transportation; and the Regional Planning Commission of Greater Birmingham.
- Our impact** Over the past five years, TREND Lab has generated more than **\$2.4M in revenue** from sponsored research projects. To date, TREND Lab **graduated 43 students** in Transportation Engineering (5 Ph.D. and 38 M.S. students).

AREAS OF STRENGTH

TREND Lab areas of strength include:

- Traffic simulation modeling
- Transportation performance management
- Big data analytics for transport applications
- Traffic Control

LATEST ACCOMPLISHMENTS

Latest Awards

2017 Educator of the Year Award

Dr. Virginia Sisiopiku was selected by the Engineering Council of Birmingham (ECOB) as the recipient of the 2017 Educator of the Year Award. She is the first UAB engineering faculty member to receive an ECOB Educator of the Year Award.

Best Technical Paper, Southern District Institute of Transportation Engineers

Drs. Ramadan and Sisiopiku's paper titled "Performance-Based Work Zone Scheduling in Central Alabama" has been awarded 2017 Best Member Technical Paper - 2nd place at the Southern District ITE Annual Meeting in Columbia, SC.

Student Scholarship, 2017 Gulf Region Intelligent Transportation Systems

Mr. Md Ahsanul Islam, a graduate research assistant at TREND Lab, received the 2017 GRITS scholarship for his essay "Connected or Autonomous Vehicles as they Pertain to ITS and the Future".

Latest Publications

Ramadan, O. E., & Sisiopiku, V. P. (2018). Modeling Highway Performance under Various Short-Term Work Zone Configurations. *Journal of Transportation Engineering, Part A: Systems*, in press.

Sisiopiku, V. P., & Ramadan, O. E. (2018). Understanding Women’s Needs as Determinants of Mode Choice: A Case Study of The University of Alabama at Birmingham. *TRB 97th Annual Meeting Compendium of Papers*, Paper No 18-02860.

Sisiopiku, V., & Rostami Hosuri, S. (2017). Congestion Quantification Using the National Performance Management Research Data Set. *Data: Special Issue on Transportation Data*, 2(39).

ON-GOING PARTNERSHIPS

Since 2012, the TREND Lab is an active member of the Southeastern Transportation Research, Innovation, Development, and Education (STRIDE), a consortium of 10 universities in the Southeast led by the University of Florida. In 2016, STRIDE was re-designated as the Region 4 University Transportation Center and was awarded an additional \$14 million grant for congestion mitigation research.

HIGHLIGHTED ON-GOING PROJECTS



Performance Measurement & Management Using Connected & Automated Vehicle Data

Developing novel performance measurement alternatives that consider data from emerging connected and autonomous vehicle technologies. Performed in collaboration with Florida International University.



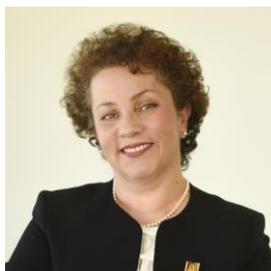
Technology Influence on Travel Demand & Behaviors

Investigating the influence of shared-use economy (i.e. Uber and Lyft) on travelers’ choices and behaviors and the resulting impacts on local and regional congestion.



Work Zone Mobility through Planning, Design, & Operations

Helping transportation agencies better plan work zones while mitigating resulting congestion. Performed in collaboration with Auburn University.



MORE INFORMATION

For more information, please contact **Dr. Virginia Sisiopiku**, TREND Lab Director, at (205) 934-9912 or vsisiopi@uab.edu. You may also visit our website www.uab.edu/trendlab.

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