

# SIUE Alumnus Ghimire Triumphs In Transportation Research Contest

by Megan Wieser  
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EDWARDSVILLE – As no-notice disasters pose a huge threat to both life and property, an efficient evacuation plan is essential in case of an emergency.

While pursuing graduate research at Southern Illinois University Edwardsville, Ishwor Ghimire, an international student from Kathmandu, Nepal, won the 2021 Dr. Nylene W. Edwards Memorial Transportation Research Paper Contest for creating a detailed no-notice evacuation plan for the SIUE road network.

Ghimire conducted his research project, entitled “Microsimulation of a No-Notice Evacuation in Suburban University Campus Using VISSIM,” while completing a master’s of civil engineering with a specialization in transportation from SIUE.

“My research is about simulating evacuation scenarios in the University area during no-notice disasters such as fires, earthquakes and terrorist threats,” explained Ghimire. “Research parameters such as travel time, vehicle delay and stop delay have been used to study the current situation of traffic during emergency evacuations, and experiments have been conducted that manage delay and bottleneck issues within the road network of SIUE.”

By utilizing VISSIM software, Ghimire analyzed various simulations to propose alternatives that minimize traffic-related issues that are known to delay evacuation. A base scenario representing the current road network was modeled, along with two alternatives proposed to minimize time and delay. One of the proposed models reduced total travel time by 50 minutes and solved bottleneck issues found in the intersection of N Research Dr. and University Dr., reducing vehicle delay from 80 seconds to 6 seconds.

“We are fortunate to have great students like Ishwor in our program,” said research advisor Ryan Fries, PhD, professor and chair of the Department of Civil Engineering. “Despite the challenges of completing his coursework and research under the constraints of a pandemic, he did a great job. It was wonderful that his work was recognized by the Transportation Research Forum.”

“The hard work I put into this research was reflected when I won the competition among such a huge number of students,” shared Ghimire. “My research found a resolution to the current traffic problems on the SIUE campus, which will ease the emergency evacuation process while reducing the risk of threat to students and staff. I am proud of this research, and I am thankful to Dr. Fries for his support and guidance.”

Currently, Ghimire is serving as a transportation engineer at ABNA Engineering, Inc. His responsibilities include support planning, programming and design of transportation

engineering projects, such as signal and street lighting systems, maintenance of traffic plans, and roadway design.

Ghimire thanks SIUE for influencing his career trajectory, noting that his experience as a research assistant and prior involvement in campus job fairs helped him develop confidence in his work.

“With an excellent teaching faculty and highly-equipped learning environment, SIUE has always been the best university for international and domestic students,” Ghimire said. “SIUE’s experienced professors with hands full of knowledge to share have always guided me to the path of excellence.”

The Dr. Nylen W. Edwards Memorial Transportation Research Paper Contest is hosted by the Transportation Research Forum’s St. Louis Chapter. The honorarium is named after Nylen W. Edwards, PhD, who taught transportation at the University of Missouri from 1953-85, and directly influenced hundreds of students through his teaching and advising.

The [School of Engineering](#) offers one of the most comprehensive and affordable engineering programs in the St. Louis region with eight undergraduate degrees, five master’s degrees and two cooperative doctoral programs, all housed in a state-of-the-art facility. Students learn from expert faculty, perform cutting-edge research and participate in intercollegiate design competitions. Companies in the metropolitan St. Louis area provide students challenging internships and co-op opportunities, which often turn into permanent employment. All undergraduate programs are accredited by their respective accreditation agencies.

**Photo:** SIUE alumnus Ishwor Ghimire.