



American Nuclear Society

South Carolina State University Chapter



James Allen Anderson Seminar Series

A Multimodal Location and Routing Model for Nuclear Waste Transportation

The recent US Commodity Flow Survey data suggest that transporting hazardous materials (HAZMAT) such as nuclear waste often involves multiple modes, especially for long-distance transportation. However, not much research has been conducted on HAZMAT location and routing on a multimodal transportation network. Most existing HAZMAT location and routing studies focus exclusively on single mode (either highways or railways). Motivated by the lack of research on multimodal HAZMAT location and routing and the fact that there is an increasing demand for it, this research proposes a multimodal HAZMAT model that simultaneously optimizes the locations of transfer yards and transportation routes. The developed model is applied to two case studies of different network sizes to demonstrate its applicability. The results are analyzed and suggestions for future research are provided.

Yuanchang Xie received his Ph.D. degree in Civil Engineering in 2007 from Texas A&M University, College Station. Dr. Xie is an associate professor in the Department of Civil and Environmental Engineering at the University of Massachusetts (UMass) Lowell. Prior to joining UMass Lowell in August 2011, he worked at South Carolina State University as an assistant professor for 3.5 years. Dr. Xie's current research focuses on traffic safety, transportation network analysis, intelligent transportation systems (ITS), and traffic control. Dr. Xie has served as the PI/Co-PI of over 20 externally funded projects and the total funding is more than \$4 million. He has published 40 peer-reviewed journal articles and numerous conference articles. Dr. Xie is currently a member of the TRB Transportation of Hazardous Materials Committee. He also serves on the Editorial Boards of two top international journals (Accident Analysis & Prevention and Transportation Research Part C: Emerging Technologies) in his field.

This seminar series is named after Dr. James Allen Anderson, who contributed significantly in the establishment of the first undergraduate Nuclear Engineering Program in a Historically Black College/University (HBCU).

Dr. Yuanchang Xie

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ECSC Auditorium 100, Wednesday, August 16th, 12 pm-1:00 pm

Free Pizza and Drink