Transitioning to a Smarter and More Sustainable Transportation System

Rocky Mountain INFORMS Seminar

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Abstract

Transitioning to more livable and sustainable smart cities requires improving today's transportation system to be smarter, safer, and more resilient. In this talk, Dr. Harper will discuss how emerging trends in transportation could change the way we envision our cities and communities and the importance of putting people's needs at the forefront, as we begin to transition to more technologically advanced smart cities. In the first part of his talk, he will discuss how connected and automated vehicles (CAVs) could impact parking economics and energy use in our downtown urban cores using an agent-based simulation model. This analysis will provide an illustration of the first-order effects of CAVs on the built environment and could help inform near- and long-term policy and infrastructure decisions during the transition to automation. In the second part, Dr. Harper will discuss how micromobility modes could impact transportation congestion, emissions, and energy use. Finally, he will discuss future research opportunities and directions in, equity, hazards modeling, and food delivery.

Bio

Dr. Corey Harper is an Assistant Professor of Civil & Environmental Engineering and Heinz School of Public Policy at Carnegie Mellon University. In his role as the director of the Future Mobility Systems Lab, he leads a team of researchers who explore the infrastructure, policy, and equity implications of emerging transportation technologies (e.g., autonomous vehicles and micromobility). The equity analysis side of his team applies equity metrics to assess how policy and regulation could affect distributional equality of transportation resources. The modeling and simulation side of his group is focused on incorporating new mobility modes (e.g., micromobility and e-commerce) into regional traffic demand models to promote better long-range planning of the transportation system. Dr. Harper is a recipient of multiple Mobility 21 Research awards and a National Science Foundation Grant and is a Young Member of the Vehicle Highway Automation Committee. Before becoming a professor, Dr. Harper was a consultant at Booz Allen Hamilton, helping USDOT and DOD with the integration of connected and automated vehicles.

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Topic: Harper-RMIC

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