

iTram

Interdisciplinary TRansportation Analysis and Modeling Research Group
School of Civil and Construction Engineering, Oregon State University



Purpose

This research group conducts both advanced and applied research on the dynamics of transportation and urban systems, as well as their implications on management and policy decisions. The impacts of transportation and land use policies are often multidimensional. In addition to the traditional mobility and accessibility measures, iTram strives to understand the full ramifications of these policies including their influences on reliability, equity, welfare, finance, economic growth, and sustainability.

Mission: iTram promotes and employs interdisciplinary approaches to conduct research on the relationships between transportation, land use, and natural resources, modeling urban/regional system dynamics and analyzing the full impact of engineering/planning decisions to ensure efficient resource allocation and sustainable development in the broad domain of transportation.

Capabilities

The interdisciplinary team at iTram includes faculty, graduate, and undergraduate students from Transportation, Economics, Agriculture and Resource Economics, Operations Research, and Statistics. The research conducted by iTram uses a variety of techniques, including optimization, statistics and econometrics, simulation, agent-based methods, artificial intelligence, Geographic Information Systems, and advanced survey techniques. These methods can be applied to analyze systems ranging from a single facility to a large region, and assess the consequences of policies ranging from short-term operations and pricing decisions to long-term investment and ownership choices.

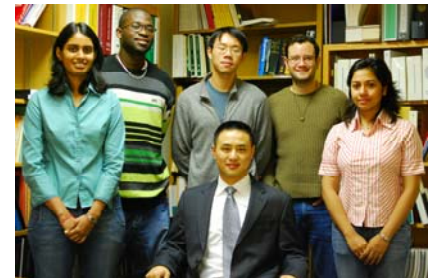
In previous research, the iTram group has studied freeway operations strategies, incidence management policies, advanced traveler information systems, road pricing and distance-based use fees, vehicle ownership choices, freeway capacity expansion, private roads, alternative urban growth scenarios, and multimodal investment criteria.



iTram Research Group can be found in Owen Hall on OSU campus

Project Examples

- Co-Evolution of Land Use and Transportation in Urban and Regional Systems (Oregon Transportation Research and Education Consortium)
- Welfare and Financial Impact of Unleashing Private Sector Investment in Transportation Systems (Oregon State University)
- Socio-Economic Impact of Distance-Based Road User Fees (Oregon DOT)
- Freight Performance Measures: Approach Analysis. (ODOT and OTREC)
- Economics Analysis of Price Competition and Capacity Choice on Large Mixed-Ownership Networks (Kiewit Center for Transportation and Infrastructure)
- Benefits of Removing Institutional Barriers to Incident Management. (ODOT and OTREC)
- Land Use-Transportation Dynamics without Freeway Capacity Expansion (OTREC)
- Multimodal Investment Criteria and the Freight's Economic Importance (ODOT)
- User Responses to the Trip-Check Statewide Traveler Information System (ODOT)



Dr. Zhang and iTram Graduate Students

Education

- CE 491 Transportation Engineering
- CE 555 Advanced Transportation Supply and Demand Modeling
- CE 590 Land Use-Transportation Management and Policy
- CE 591 Transportation Systems Analysis and Planning
- ECON 565 Transportation Economics



Dr. Zhang Dr. McMullen Dr. Lesser
iTram Faculty Researchers

People

Faculty: Dr. Lei Zhang (Civil Engineering), Dr. Starr McMullen (Economics), Dr. Virginia Lesser (Survey Research Center)

Research Assistants: Raul Avelar, Smita Biswas, Lloyd Fobi, Mingxin Li, Kyle Nakahara, Divya Valluri, Wei Xu

Website

<http://web.engr.oregonstate.edu/~zhangle/iTram>

Facility Use and Financial Arrangements

The research group, its staff, facilities and data streams are available for research and evaluation projects, training/education functions, and consulting on projects. Please contact Dr. Zhang by phone (541-737-2072) or email (lei.zhang@oregonstate.edu).