

# **Tier I Center on TELEMObILITY**

Application for Tier 1 UTC addressing  
"Communications Technology and E-Commerce Effects on  
Travel Demand"  
(Opportunity UTCTIER1COMP2020)

Consortium Members:

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## Executive Summary

Our nation is undergoing what is likely to be the broadest, deepest and longest *natural experiment* in the use of communications/information technology for tele-activities and e-processes in modern history. From telework to e-learning, telemedicine to e-shopping, and heavy reliance on e-commerce and home delivery, activity and mobility patterns have been transformed in a most dramatic manner under the COVID-19 risk mitigation measures. Researchers at Northwestern University, UC-Berkeley, and UT-Austin's McCombs School of Business propose to collaborate on research and outreach activities through a Tier I University Transportation Center on TELEMOBILITY aimed at assessing how ICT technologies and e-commerce processes will impact the demand for travel and mobility in the future, taking into consideration lessons learned from this dramatic natural experiment. The Center, led by Northwestern University, will address the following principal questions:

1. To what extent are the changes in tele-activities and e-processes experienced during the COVID-19 lockdown likely to persist once restrictions are lifted and the economy reopened?
2. How has the supply-side changed, especially for e-commerce, and how is it likely to evolve from here?
3. What is a desirable, but practically attainable level of demand adoption (substitution) of tele-activities and e-services to serve as guidepost for planning decisions and policy intervention? And how do these impacts differ across geographic entities, particularly with regard to impact on rural communities?

The Center builds on the deep expertise and broad experience of a multi-disciplinary team of leading researchers to address key developments in both the supply of tele-activities, especially e-commerce, as well as their impact on travel behavior and the demand for transportation. With a strong track record of delivering policy-sensitive, actionable research results, Center researchers will develop and apply a general framework to characterize any particular domain of tele-activity/ e-process in terms of the following elements: (1) Supply side developments likely to shape the range of offerings to consumers, including delivery channels and modes; (2) Adoption and usage trends in aggregate and in interaction with the supply side developments; (3) Impact of COVID-19 shock and likely aftermaths on both supply-side reorientation and innovation, as well as demand-side adaptation and resilience; (4) Micro-level determinants and models of adoption, retention/ attrition, use patterns and engagement, as a basis for forecasting future demand and response to policies and incentives; and (5) Likely scenarios and associated forecasts as a basis for robust planning and policy design.

The initial focus will be on e-commerce and telework. A planned series of roundtable outreach events and domain expert consultations will further document all major tele-activity domains, particularly e-learning, telemedicine, and e-sports.

The Center will feature active engagement of industry and local, state and federal government agencies through an Advisory Board to guide research directions and outreach/implementation activities. All activities will be closely integrated with the teaching mission of the three institutions, and additional resources will be deployed for online access and participation by students and professionals nationwide.