Urban Mobility Efficiency

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Whole New World

Transportation is changing dramatically

– Information and Communications Technologies (ICT)

– Shared Economy

– Autonomous Vehicles
New Transportation Services

Ride-hailing, Ridesourcing, Taxi
Ridesharing
Smart Transit Services

Technology

Information Aggregators

What are the impacts of ICT?
Why Shared Transportation?

Are we willing to share?
Autonomous Vehicles

Great Mileage
Some Benefits of the Driverless Car

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<th>Google’s Aspiration</th>
<th>Potential Annual Benefits (US only)</th>
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| • 90% reduction in accidents | • 4.95 million fewer accidents  
| • 90% reduction wasted commuting | • 30,000 fewer deaths  
| • 90% reduction in cars | • 2 million fewer injuries  
| | • $400 billion in accident-related cost savings  
| | • 4.8 billion fewer commuting hours  
| | • 1.9 billion gallons in fuel savings  
| | • $101 billion saved in lost productivity and fuel costs  
| | • Reduce cost per trip-mile by 80% or more  
| | • Increase car utilization from 5-10% to 75% or more  
| | • Better land use

Sources: Google, US NHTSA, AAA, Texas A&M Transportation Institute, Columbia University Earth Institute and Devil’s Advocate Group’s analysis

Will it increase or decrease travel?
Longstanding Problems

- System reliability and resilience
- Avoidable safety impacts
- Unsustainable impacts on energy, climate and the environment
- Equity, accessibility and changing socio-demographics
- Dense land use and urban migration

Can these new innovations fix these longstanding issues?
To Answer These Questions, We Need:

• New data
  – Naturalistic driving studies – Myra
  – Social network data – Giancarlos

• New models
  – Modality Style models – Joan

• New paradigms
  – Built environment effect on travel behavior – Giancarlos
  – Socio-economic context and aging populations – Kay
Dr. Myra Blanco
Director, Center for Public Policy, Partnerships, & Outreach
Virginia Tech Transportation Institute

Dr. Kay Kitazawa
Research Director
Rebuild Japan Initiative Foundation
Group Photo

• We will take group photo on the lawn area outside the Atrium
• Please move there promptly.

• We’ll reconvene at 11 AM after the coffee break.
Dr. Giancarlos Troncoso Parady
Assistant Professor
University of Tokyo

Dr. Joan Walker
Associate Professor
University of California at Berkeley