

# Urban Mobility Efficiency

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# Whole New World

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Transportation is  
changing dramatically

- Information and Communications Technologies (ICT)
- Shared Economy
- Autonomous Vehicles



# New Transportation Services

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Ride-hailing, Ridesourcing, Taxi



GRABTAXI

Ridesharing



carma



moovee

Smart Transit Services



Technology

Bike-sharing

zipcar



capital bikeshare



Information Aggregators



What are the impacts of ICT?



# Why Shared Transportation?

CPF  
cycling promotion fund



Are we willing to share?



# Autonomous Vehicles

## Great Mileage

### Some Benefits of the Driverless Car

Google's Aspiration	Potential Annual Benefits (US only)
• 90% reduction in accidents	<ul style="list-style-type: none"><li>• 4.95 million fewer accidents</li><li>• 30,000 fewer deaths</li><li>• 2 million fewer injuries</li><li>• \$400 billion in accident-related cost savings</li></ul>
• 90% reduction wasted commuting	<ul style="list-style-type: none"><li>• 4.8 billion fewer commuting hours</li><li>• 1.9 billion gallons in fuel savings</li><li>• \$101 billion saved in lost productivity and fuel costs</li></ul>
• 90% reduction in cars	<ul style="list-style-type: none"><li>• Reduce cost per trip-mile by 80% or more</li><li>• Increase car utilization from 5-10% to 75% or more</li><li>• Better land use</li></ul>

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

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- 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?





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**Dr. Kay Kitazawa**  
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**Dr. Joan Walker**  
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**Dr. Giancarlos Troncoso Parady**  
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# To Answer These Questions, We Need:

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- New data
  - Naturalistic driving studies – Myra
  - Social network data – Giancarlo
- New models
  - Modality Style models – Joan
- New paradigms
  - Built environment effect on travel behavior – Giancarlo
  - Socio-economic context and aging populations – Kay



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# Group Photo

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- 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.



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