Mobility > Transportation

The ability to move or be moved freely and easily.
USA Today, 2/20/2017: “Cheap gas and a surging economy are taxing the nation’s roads and contributing to congestion that cost U.S. motorists almost **$300 billion** last year in wasted time and fuel ... Los Angeles had the worst traffic in the world ... INRIX.”
ARPA-e NEXTCAR: Connected and Automated Control for Vehicle Dynamics and Powertrain Operation (GM Partnership)

**GM Volt2**
L2 Autonomous vehicles controls with V2X
5 Modes: Conventional – HEV – PHEV – EREV - EV

**Bo Chen**: Model based Controls

**Darrell Robinette**: Powertrain and Optimization

**Mahdi Shahbakhti**: Dynamic Models & Controls

**Kuilin Zhang**: Traffic Theory and Simulation

**Chris Morgan / Chris Pinnow**: Vehicle Instr. & Testing

**Jeremy Worm / Chris Morgan**: Training and outreach
Traffic Theory and Simulation

• Optimal Routing and Velocity Bounds
  • Connected and Automated Vehicle Traffic Simulation Platform
  • Real-time and Simulated Traffic with Optimal Routing and Velocity Bounds
• Integrated vehicle and traffic simulation for technology assessment

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Civil and Env Engng.
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Figure 1. A Connected and Automated Vehicle Driving Scenario

Cooperative Adaptive Cruise Control (CACC)

CAV Driving Models and Applications
Technical Training and Outreach

High Impact, Hands-On training and outreach

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Contacts

**Centers and Institutes:**
MTTI (Pasi Lautala) – Transportation and Traffic
MTRI (Joseph Burns) – Sensors and Signal Processing
KRC (Jay Meldrum) – Vehicle mobility and testing in unstructured environments
ICC (Ming Song) - Computing and cyber-systems
GLRC (Guy Meadows) – On and In Sea
APS LABS (Jeff Naber) – Vehicle technologies
AIM (Wayne Weaver) – Robotics, connected vehicles, cyber security

[www.mtu.edu/research/about/centers-institutes](http://www.mtu.edu/research/about/centers-institutes)

**Educational programs**
ACIA (ECE, CS, ST) – Cyber Security
ME / ECE – Automotive Systems and Controls

**Coordination**
Brent Burns – Director of Federal & Industry Relations
Discuss and Engage with the Panel Members and Others