The Future of Automotive IT: Driving Organizations, Vehicle Development, and Autonomous Vehicles

“Focus on the Future”
UM Automotive Research Conferences

WELCOME!

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Automotive Futures
University of Michigan
Transportation Research Institute

- Affiliate Program
  - Supporting Members
  - Research Partners

- Funding

- Research
  - Globalization
  - Powertrains
  - IT

- Conferences
  - 5 Annual Conferences
Automotive Futures
Affiliate Program

Affiliates Members and Research Partners

**IT Organizations**
- Oracle Corporation
- IBM
- HP
- Siemens-PLM

**OEMs**
- General Motors
- Toyota Tech Center
- Nissan Tech Center
- Ford Motor Company
- Chrysler LLC

**Government/NGOs**
- NREL / EPA
- NSF
- Motor Carrier
- Energy Foundation
- The Hewlett Foundation
- National Resources Defense Council
- Union of Concerned Scientists
- CALSTART
- Argonne National Labs
# Automotive Futures
## Affiliate Program

### Affiliates Members and Research Partners

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Automotive Futures
Affiliate Program

New Affiliates Members

Argonne National Labs
BorgWarner
Oracle
Valeo
ITS America

Thank you for your support!
Automotive Futures
Current Research Programs

• Powertrains
  • 2014 Powertrain Strategies for the 21st Century Survey (Sponsor: Affiliates)
    • Survey continuing

• Total Cost of Ownership: Comparing Diesel and Gas Vehicles (Bosch)
  • Based on resale value of 30K vehicles sold through Mannheim auctions in 2012 / 2013
  • Report available
Automotive Futures
Current Research Programs

• ITS
  • Stuck in Traffic: Analyzing Real Time Traffic Capabilities of Personal Navigation Devices and Traffic Phone Applications
    • Final report available
  • Integrated Mobile Observations: Micro-level weather reporting using cell phones in MDOT vehicles (Sponsor: MDOT and FHWA)
    • Continuing data collection through October, 2015
Automotive Futures
Current Research Programs

• ITS
  • Roadway Evaluation Project: Measuring road roughness via accelerometers in cell phones mounted in MDOT vehicles
    • Final report available

• Deploying Safety Technologies in Commercial Vehicles
  • Familiarity and penetration currently and in the future of: Forward Collision Warning / Lane Departure Warning / Blind Spot Detection / ESC / Vehicle Communications
  • Final report available (Sponsor: ITS America)
Upcoming UMTRI-AF Conferences

- November 11, 2015: *Inside China: Understanding China’s Current and Future Automotive Industry*. Our 8th annual conference provides insight into the Chinese auto industry from experts in specific areas of the industry including the Chinese market, suppliers, trade, Chinese manufacturers, labor, and marketing.

- February 17, 2016: *New Mobility: The Future of Freight*. A new conference that examines the major changes IT-enabled goods movement will have on the freight movement industry.
Upcoming UMTRI-AF Conferences

• April 13, 2016: *Globalization of the Automotive Industry: The 2016 Update.* A new conference that brings everyone up to date on the trends in the globalization of the automotive industry from a manufacturer and supplier perspective.

• July 20, 2016: *Powertrain Strategies for the 21st Century.* Our 8th annual conference will provide an overview of all the electrification progress that has been made in the global auto industry.
Upcoming UMTRI-AF Conferences

The UM Alumni Discount

Alumni who sign up in advance for five conferences in a row receive a $250 discount
AM Presenters

9am     Bruce Belzowski, Managing Director, Automotive Futures, UM Transportation Research Institute

• James Miller, Chief Technologist, Fellow - Energy, Manufacturing, Communications, Industrial, and Entertainment at Hewlett-Packard

• Jeff Liedel, Executive Director, Global IT Operations at General Motors

• Jeff Liedel Q&A

10:35-10:50am   Break

• William Lang, Partner, Americas Consulting Leader - Industrial and Automotive at Computer Sciences Corporation (CSC)

• AM Panel Q&A
PM Presenters

12:00-1:30pm  Lunch

1:30pm  Ronald Gaynier, Cyber Security Engineer at the UM Transportation Research Institute

  • Chris Lupini, Director Cybersecurity Engineering, Electronics and Safety, Delphi Corporation

2:35-2:45pm  Break

  • Ryan Eustice, Professor of Mechanical, Electrical, and Computer Engineering at the UM

  • PM Panel Q&A

4:00pm  Adjourn
Conference Questions

• How has corporate IT evolved since its introduction in the 1990s?
• How is automotive corporate IT changing today?
• What are the current and near term future trends in organizational IT?
• How are corporate global IT structures and services changing?
• What are the challenges companies face as they globalize IT?
Conference Questions

- What is the current and future relationship of IT to product engineering?
- How is cybersecurity in IT working with product development? How big a role is IT playing?
- What are the biggest challenges auto cybersecurity faces?
- What areas of the vehicle are the most vulnerable to cybersecurity threats?
- Are there more threats related to the entertainment or the electronic control module (ECM)
Conference Questions

• How big a role is IT playing in autonomous vehicles?
• How is research focused on autonomous vehicles evolving?
• What are the biggest challenges today? How is IT helping overcome them?
• When might these challenges be overcome?
• How important is V2X to autonomous driving?
• What path do we see drivers taking to adjusting to semi-autonomous and fully autonomous driving?
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WELCOME!

The Link to Presentations Will Be Emailed This Weekend