



November 17 & 18, 2016 • Urban Dynamics Institute at Oak Ridge National Laboratory  
Oak Ridge, TN

**The focus of this workshop**, convened by the Department of Energy SMART Mobility consortium of laboratories, will be to examine the suitability of existing urban transportation modeling and simulation tools in terms of traffic flow realism, connectivity modeling, travel demand modeling, and ability to accurately reflect energy use and GHG emissions. Adaptation and enhancement of existing tools will be necessary for long-term transportation planning tasks as well as near-term and real-time traffic operations such as traffic signal optimization and incident management. Further, addressing model calibration at the early stages of deployment of connected and automated vehicles will be challenging. The workshop will focus on the challenges of modeling mixed traffic, new and emerging transport modes (Transportation Network Companies and autonomous fleets), scalability, and data availability for calibration. Bringing together experts from the government, industry, and academia, speakers will explore the current practice, challenges, and future directions in terms of modeling SMART technology, emphasizing unification of mobility and energy analysis within a common modeling framework. The last session of this two day program targets current toolsets and leads to a discussion of pathways forward for the DOE SMART Mobility initiative.

#### Participating Organizations

- National Renewable Energy Laboratory
- Oak Ridge National Laboratory
- Argonne National Laboratory
- Lawrence Berkeley National Laboratory
- Idaho National Laboratory

## Program

November 17, 2016  
Morning Session  
Welcome and Framework

November 17, 2016  
Afternoon Session  
Current Challenges

November 18, 2016  
Morning Session  
Promising Approaches

November 18, 2016  
Afternoon Session  
Current Toolsets & Pathways Forward

Sponsored by:



## Thursday, November 17

### Morning Session

#### **Welcome and Framing of the Workshop**

Moderated by Rachael Nealer, Department of Energy, Vehicle Technologies Office

##### **8:00 AM – 8:30 AM Breakfast**

- Welcome and Introductions – *Moe Khaleel, Oak Ridge National Laboratory*

##### **8:30 AM – 10:00 AM**

- What is SMART Mobility – *Michael Berube, Department of Energy*
- Welcome from the Steering Committee, Workshop Layout – *Stan Young, NREL*
- Historical Framework for Travel Modeling and Simulation – *Asad Khattak, University of Tennessee*
- Transit Planning – *Jerome Lutin, NJ Transit (retired)*

##### **Break 10:00 AM – 10:15 AM**

#### **Advancing Theoretical Frameworks**

Moderated by Josh Auld, Argonne National Laboratory

##### **10:15 AM – 12:00 PM**

- *Kostas Goulias, University of California, Santa Barbara*
- *Yi-Chang Chiu, University of Arizona*
- *Kouros Mohammadian, University of Illinois*
- *Andrew Eilbert, Volpe / Stinger Ghaffarian Technologies, Inc.*

#### **Working Lunch**

##### **12:00 PM – 1:00 PM**

- Insights from 35 Years of Automated Transit Modeling – *Sam Lott, Texas Southern University, Center for Transportation Training and Research*

### Afternoon Session

#### **Lessons from Leading Urban Modeling Efforts**

Moderated by Budhendra Bhaduri, Oak Ridge National Laboratory

##### **1:00 PM – 2:45 PM**

- *Kermit Wies, Northwestern University Transportation Center*
- *Guy Rousseau, Atlanta Regional Commission*
- *Billy Charleton, Puget Sound Regional Council*
- *Hary (Ono) Prawiranata, Nashville Area Metropolitan Planning Organization*

##### **Break 2:45 PM – 3:00 PM**

#### **Urban Area State of Practice and Common Needs – Industry Perspectives**

Moderated by Stan Young, National Renewable Energy Laboratory

##### **3:00 PM – 5:00 PM**

- *Kimon Proussaloglou, Cambridge Systematics*
- *John Gliebe, RSG, Inc*
- *Erik Sabina, Colorado DOT*

## Friday, November 18

### Morning Session

#### **Opening and Agenda Review**

##### **8:00 AM – 8:30 AM Breakfast**

- Pre-“Smart-era” Transportation Demand Modeling and Planning for #SmartColumbus  
*Thea Walsh, Mid-Ohio Regional Planning Commission*

#### **Urban Area State of Practice and Common Needs – National Perspectives**

*Moderated by Jane MacFarlane, Lawrence Berkeley National Laboratory*

##### **8:30 AM – 10:00 AM**

- *Brian Gardner, US Department of Transportation*
- Integrating Decision Science and Behavior Economics into Smart Mobility Modeling and Simulation Tools – *Lei Zhang & Chenfeng Xiong, University of Maryland*
- Ultra-Large Scale Transportation Simulation and Optimization Using Distributed Computing Approaches – *Xuesong Zhou, Arizona State University*

#### **Break 10:00 AM – 10:15 AM**

#### **Laboratory Initiatives**

*Moderated by H M Abdul Aziz, Oak Ridge National Laboratory*

##### **10:15 AM – 12:00 PM**

- Polaris - *Josh Auld, Argonne Laboratory*
- TUMS - *Andreas Malikopoulos, Oak Ridge National Laboratory*
- MatSim – *Jane MacFarlane, Lawrence Berkeley National Laboratory*
- Automate Mobility Districts – *Stan Young, National Renewable Energy Laboratory*

#### **Working Lunch**

##### **12:00 AM – 1:00 PM**

- Modeling Automated Mobility for all of New Jersey – *Alain Kornhauser, Princeton Univ.*

### Afternoon Session

#### **Workshop Wrap-Up**

##### **1:00 PM – 2:30 PM**

- USDOT SMART Mobility Direction: Participants will break into small groups, of 10 to 15 people, and provide take-aways and direction for the DOE SMART Mobility Urban Science program.



# General Information

## Important Note

Plan to arrive a little early for badging purposes. The guard gate can get backed up in the mornings, so allow time for traffic delays if you are not staying on-site. Additionally, please bring your license with you to show to the guard, and if you are from Missouri, Minnesota, Washington State, or American Samoa, you will need to bring two forms of photo identification with you (a passport would be a good second option to your license).

Please be aware that effective March 30, 2015 ORNL has become fully compliant with the REAL ID Act. This Act requires that anyone accessing a Federal Facility, such as ORNL, must present a compliant form of identification. If you are from one of the [noncompliant states](#), you will need to provide another form of approved identification. [Here](#) is a list of acceptable identification if you are from one of these states. You will not be allowed entry to any ORNL facility unless you have a form of compliant identification as listed above.

Visit ORNL's Visitor Page for detailed information including pre-arrival instructions, getting to the lab, on-site Guest House information, and more.

## Useful Information

### **Workshop Hours and Location**

**11/17: 8:00 AM – 5:00 PM**

**11/18: 8:00 AM – 2:30 PM**

JICS Auditorium

One Bethel Valley Road

Oak Ridge National Laboratory

### **Contact Information**

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### **Live Streaming**

The workshop will stream live via BlueJeans.

<https://bluejeans.com/736066851?src=calendarLink>

Call in information: +1.408.740.7256 (US) +1.888.240.2560 (US Toll Free)

Enter **Meeting ID: 736066851** Press #

A writer will be attending the workshop to take notes and the report will be circulated afterwards to all attendees.

### **Logging into the ORNL Wireless Network**

Please complete the following steps to log in to the visitor network named "ornl-visitor":

1. Open a web browser and attempt to access any website. The browser will automatically redirect you to the network log-in page.
2. Enter the appropriate information in the fields provided (i.e. Name, Contact Number and Email Address).
3. Review and accept the "Accepted Use Policy" (Required).
4. Click "Connect."

Note: You will be brought to a window with a countdown. It will take approximately one minute to connect you to the network. Due to content caching, some smart phones may display the registration page even after being registered. Restarting the phone's browser or turning the phone off and back on should resolve this issue.



# General Information

## Useful Information

### ***Thursday Evening Dinner***

An informal dinner has been arranged for Thursday evening at 6:30pm at Mimi's Café' in West Knoxville. A private room with a limited menu (for the purpose of saving time) has been reserved for all who wish to attend. As this is an informal dinner and not an official part of the workshop, all who participate will be required to pay for their own meals.

### ***Public Transportation***

**Discount Taxi: 865-755-5143** <http://www.knoxvilleairporttaxi.com/services.html>

**Morgan Yellow Cab: 865-483-4343**

**Gold Cab: 865-919-0001**

**1-N-Only: 865-740-8026** <http://1onlytaxi.com/>

**\*Please note that Network Transportation Companies, like Uber, Lyft, and Sidecar, as just a few examples, are NOT approved to access the Guest House of the ORNL Campus.**

**\*\*Please also note, it is often less expensive to get a rental car. They are usually available for ~\$30/day. A taxi to or from the airport will be ~\$50 each way.**

### ***Parking***

Parking is available at the Conference Center Parking Lot at no cost (please see map).

### ***Lodging Recommendations***

**On-Site:** [ORNL Guest House](#) (food options in the evening are limited)

**Oak Ridge:** [Staybridge Suites](#), [DoubleTree by Hilton](#), and [Hampton Inn](#)

**Turkey Creek Area (Knoxville):** [SpringHill Suites by Marriott Knoxville at Turkey Creek](#), [Homewood Suites by Hilton Knoxville West](#), [Hampton Inn & Suites Knoxville – Turkey Creek/Farragut](#)

**Cedar Bluff Area (Knoxville):** [Home2 Suites by Hilton Knoxville West](#), [Hilton Garden Inn West/Cedar Bluff](#), [Baymont Inn & Suites](#)

