

# ITS Academic Resources (8:45-10:15)

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- ITS PCB Program Background
- ITS Case Studies
- T3e Webinars
- ITS Curriculum Webpage
- CITE Courses & Products (10:00-10:15)

*Possible OPEN DISCUSSION of Academic Resources at end, if time permits*



# The USDOT Offers Free ITS Training

The USDOT's Professional Capacity Building (PCB) Program:

- Established by congressional legislation to build and sustain a capable and technically proficient ITS workforce
- Provides comprehensive, accessible, flexible ITS learning for the transportation industry
- Focused on transportation professionals - develop their knowledge, skills, and abilities while furthering career paths

- 
- ✓ **Increase your knowledge of ITS technologies**
  - ✓ **Excel at your career**
  - ✓ **Advance the mission of your organization**

Source: ThinkStock

Achieve your ITS learning goals. Visit: [www.pcb.its.dot.gov/training.aspx](http://www.pcb.its.dot.gov/training.aspx)

# ITS PCB Program Background

- Part of U.S. DOT ITS Joint Program Office (ITS JPO)
- Authorized by Congress in [1996](#) to develop the workforce competencies to transform the transportation infrastructure through ITS
- Reauthorized by Moving Ahead for Progress in the 21st Century ([MAP-21](#))
- In 2010 embarked on new strategic direction:
  - Develop [new ITS content](#) and fill gaps in existing content.
  - Build [partnerships](#) to direct learning to the right audiences.
  - Move to [cost-effective](#), engaging [delivery methods](#).
- Ever increasing effort to expand coordination with wider (non-Federal) partners:
  - Academia
  - Professional Associations



# ITS PCB Partners



## FUTURE PARTNERS

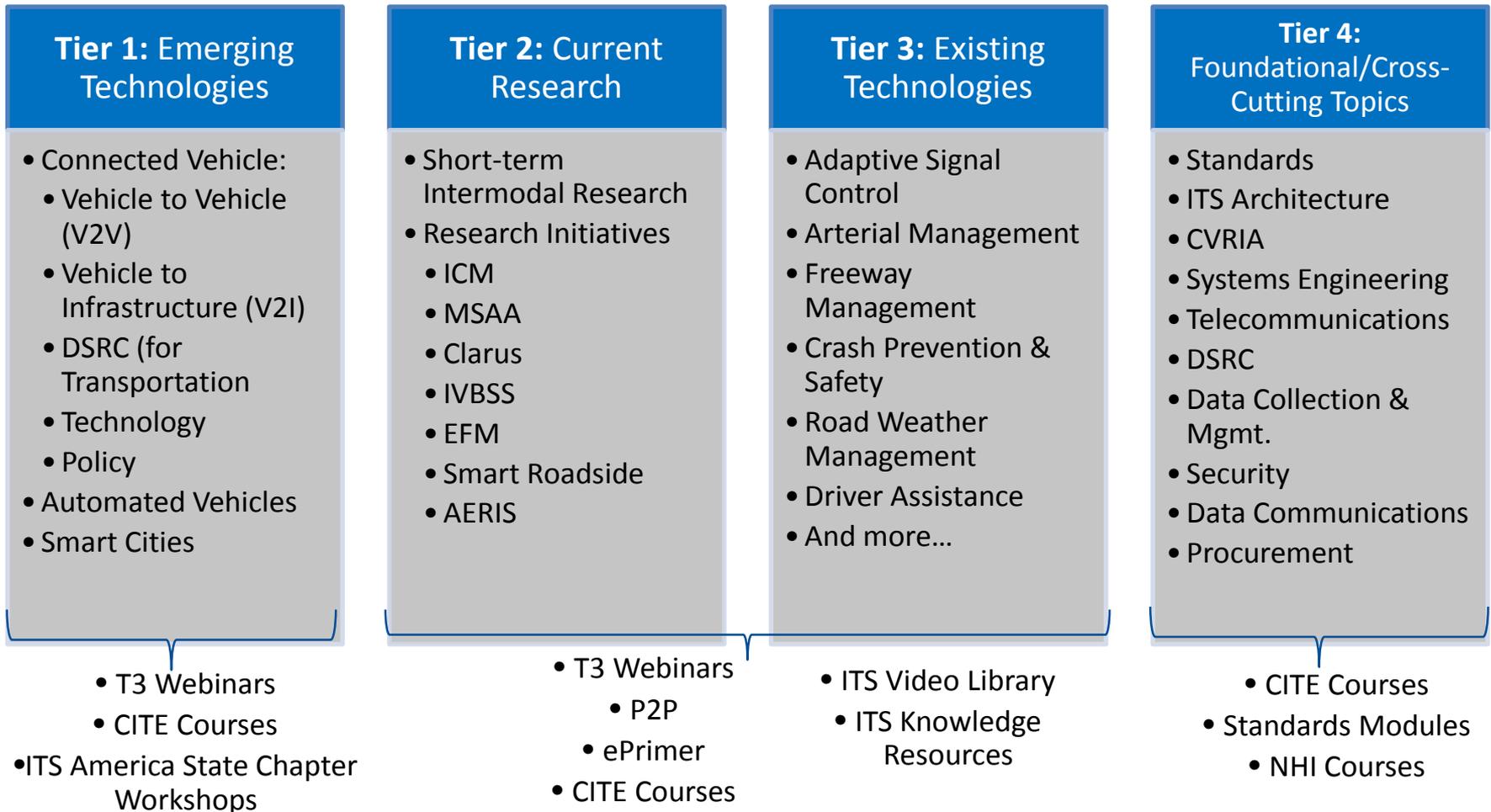
- SAE International
- IEEE
- NACo
- AMPO
- Consumer Electronics Association (CEA)
- International Road Federation
- Transportation Workforce Centers
- USDOT FMCSA

OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH AND TECHNOLOGY  
University Transportation Centers



# ITS PCB Program Content

*Targeted delivery, through strategic use of partners:*



# Partnering with Higher Education

The USDOT looks to colleges and universities as partners in educating the next generation of leaders in Connected Vehicles

## Priority Audiences Over the Next 1 to 3 Years

- Federal Agencies
- Transportation Executives and General Managers
- Transportation Practitioners (including Engineers and Planners)
- Manufacturing/Industry
- IT/Communications
- Data Aggregators
- Automobile Manufacturers

## Anticipated Audiences Over the Next 3 to 5 Years

- Insurance and Privacy Audiences
- Public Safety/Law Enforcement
- Freight/Commercial Vehicle Owners and Operators
- Media
- Advocacy Organizations



# ITS Case Studies

ITS Professional Capacity Building Program / Advancing ITS Education

About | ITS Training | Knowledge Exchange | Technology Transfer | ITS in Academics | Media Library

ITS PCB Home

**ITS in Academics**  
 ITE Student Chapter Series  
 Case Studies  
 Education & Career Resources

Free ITS Technical Assistance

- ITS Peer-to-Peer Program connects you with experienced peers or technical experts.
- ITS Help Line provides technical support by e-mail or telephone at 866-367-7487.

Stay Connected

[f](#) [t](#) [e](#) [r](#)

**ITS in Academics**

**Case Studies**

The ITS PCB Program is pleased to offer higher education instructors a new learning resource for the classroom. The ITS Case Study is a scenario-based learning tool that exposes students to real-world decisions that come with planning, deploying, and operating ITS technologies.

There are currently two case studies:

- Adaptive Signal Control
- National ITS Architecture

**Why Case Studies?**

Results from the PCB Program's 2012 University Partners Workshop and webinar indicated that faculty supported U.S. DOT-sponsored case studies as a method for incorporating ITS content into existing Civil and Transportation Engineering courses. Case Studies expose students to ITS-related scenarios, from the perspective of different job roles, within transportation organizations. This exposure gives students an understanding of what it means to work as ITS professionals.

**How to Access the Case Studies**

ITS Case Studies are organized by instructor files (PowerPoints and PDFs of Word documents) and student files. Both sets of files include a study guide, a presentation on the technology, the actual case study, and the case study debrief.

- Instructors must register to gain access to the instructor files.
- Student files are available for anyone to view.

Each Case Study requires a separate registration.



USDOT/Thinkstock



USDOT/Thinkstock



<https://www.fhwa.dot.gov/publications>

**Adaptive Signal Control Case Study**

**Instructor Files**

Adaptive Signal Control	<a href="#">Register/Log In</a>		
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**Student Files**

Introduction to Intelligent Transportation Systems and Adaptive Signal Control Technologies	<a href="#">PPT</a>	<a href="#">PDF</a>	<a href="#">HTML*</a>
Case Study take home packet	N/A	<a href="#">PDF</a>	<a href="#">HTML*</a>
In-class debrief	<a href="#">PPT</a>	<a href="#">PDF</a>	<a href="#">HTML*</a>

**National ITS Architecture Case Study**

**Instructor Files**

National ITS Architecture	<a href="#">Register/Log In</a>		
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**Student Files**

Component 2: National ITS Architecture Exercise	<a href="#">Word</a>	<a href="#">PDF</a>	<a href="#">HTML*</a>
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\*508-compliant HTML versions of the Student Files are currently in development. They will be posted when completed. If you have questions, please contact Gerry Flood at [Gerry.Flood@dot.gov](mailto:Gerry.Flood@dot.gov).

- Case Study developed from input from 1<sup>st</sup> & 2<sup>nd</sup> University Workshops
- 6 Case Studies
  - Adaptive Signal Control
  - National ITS Architecture
  - ITS Concept of Operations
  - Civil Design Considerations for ITS Implementation
  - Travel Time Based Performance Measures
  - Transit Service and ITS
- All 6 Case Study to be available online early 2017



# ITS Case Studies – 2016 Pilots



- *Civil Design Considerations for ITS Implementation*
  - Gonzaga University (Undergraduate)
  - Florida International University (Undergraduate & Graduate)



- *ITS Concept of Operations at University of Massachusetts (Undergraduate)*



- *Transit Service and ITS by TSI at Oklahoma University*



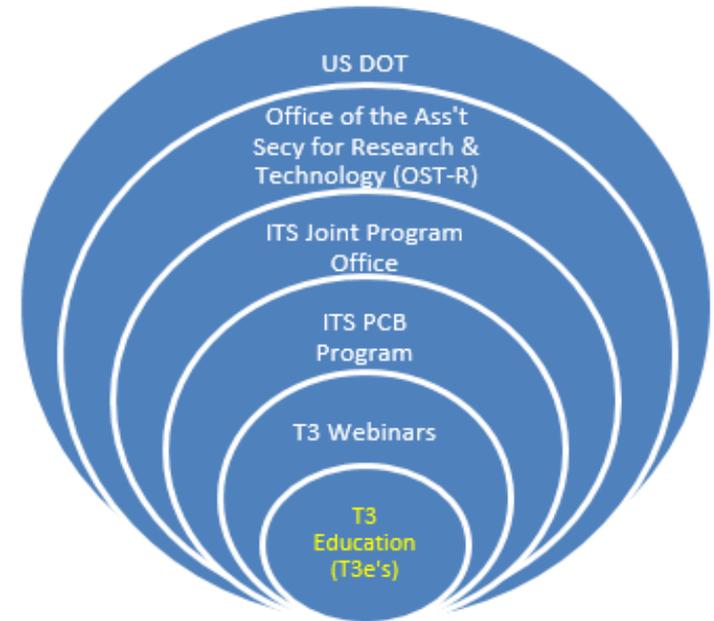
# T3e (education) Webinars

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## Purpose

T3e's are envisioned as a forum to bridge academic research with the larger transportation community. The goals are multifaceted and aim to:

- Allow transportation professionals to learn about emerging trends and interact with academia.
- Provide students an opportunity to present their work to the professional community and perfect their presentation skills.
- Offer an opportunity for academic institutions to showcase their programs and labs to a national audience.
- Provide those in all sectors with an opportunity to network and find synergy, potentially forming partnerships for deployment, operations, or new research topics.



# T3e (education) Webinars

## Format

- Focus on a specific ITS topic, theme, or subject area
- Up to 60-minutes in length--the first 25-40 minutes is devoted to presentations on relevant research, while the remaining 20-30 minutes are set aside for an interactive question and answer discussion.
- Presenters may be university students, staff members, researchers, or professors but usually includes multiple presenters.
- T3e's present a unique forum for exchange between academia, government, and industry.

[www.pcb.its.dot.gov/t3\\_webinars.aspx](http://www.pcb.its.dot.gov/t3_webinars.aspx)

The screenshot displays the website for the ITS Professional Capacity Building Program, specifically the 'Advancing ITS Education' section. The page features a navigation menu with options like 'About', 'ITS Training', 'Knowledge Exchange', 'Technology Transfer', 'ITS in Academics', and 'Media Library'. The main content area is titled 'ITS Courses and Training' and includes a section for 'Talking Technology and Transportation (T3) Webinars'. This section describes the purpose of the webinars and provides a 'T3 Webinar Schedule' table. Below the schedule is a 'Recent T3 Webinars' table and a 'T3 Webinar Basics' section. A small image of a man at a computer is visible in the bottom right corner of the screenshot.

United States Department of Transportation  
OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH AND TECHNOLOGY  
Intelligent Transportation Systems  
Joint Program Office

ITS Professional Capacity Building Program / Advancing ITS Education

ITS Courses and Training

Talking Technology and Transportation (T3) Webinars

ITS Training Brought to Your Desktop

T3 Webinar Schedule

Date	Time	T3 Webinar Title	Location	Sponsor
September 28, 2016	1:00-2:30 PM ET	Next Generation Traveler Information - Agency Social Media	Online	ITS PCB
October 5, 2016	1:00-2:30 PM ET	Strategies for Implementing Open and Mobile Payment Systems	Online	ITS PCB

Recent T3 Webinars

Date	T3 Webinar Title	Webinar Replay
August 3, 2016	Supporting Freight Operations with ITS	Available in September
July 28, 2016	Connected Vehicles and Hail Hood Weather Management	Available in September
June 16, 2016	Network-Wide Impacts of Connected Vehicles on Mobility: An Agent-Based Modeling Approach	Available now
May 26, 2016	Sustainable Urban Traffic Management Using Advanced Technologies	Available now
May 10, 2016	Adapting to Climate Change Using Intelligent Transportation Systems	Available now
April 14, 2016	Give Your Customers More Mobility Options! Utilizing Technology in Coordinated Human Services Transportation Systems	Available now

T3 Webinar Basics

- A T3 Webinar is normally 90 minutes with presentations delivered in the first 60 minutes followed by 30 minutes for questions and answers from the audience.
- Accessible 24/7, past events are stored in the T3 Webinar Archive and include an audio/video playback of the webinar. Transcripts from the webinar along with presentations use in the webinar are posted in the archive approximately three weeks after the webinar.
- The ITS PCB Program does not offer Professional Development Hours (PDHs); however, your completion of a training module may qualify as a PDH-eligible activity with your licensing agency. The steps to request a confirmation that you attended the webinar are explained in the webinar.



# T3e (education) Webinars

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## Process

- Because the T3e's are focused on academic research, unlike other T3 webinars, T3e presenters come exclusively from academia.
- In contrast to traditional T3's which are hosted by a federal DOT staff member, a professor will serve as the host on a T3e webinar.
- The T3e Webinar content is developed by the professor and presenters, who determine the topic(s) and learning objectives.
- All T3e's are produced by the Volpe Center T3 team who works with professors and students throughout.
- All T3e webinars are archived and available for viewing on the T3 website which presenters and can access and share freely.

Spaces are available on the calendar for 2016-2017!

Please speak to Jaime if you are interested.



# T3e (education) Webinars

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## Past T3e's

### **Network-Wide Impacts of Connected Vehicles on Mobility: An Agent-Based Modeling Approach**

*Oregon State University*

Dr. Haizhong Wang, Alireza Mostafizi and Shangjia Dong

### **Sustainable Urban Traffic Management Using Advanced Technologies**

*University of Massachusetts Amherst*

Dr. Eleni Christofa, Yashar Farid and Farnoush Khaligi

### **Transportation Characterizing Bikeshare Usage with Network Modeling Techniques & GTFS-Enabled Spatiotemporal Analysis of Transit Services**

*University of Utah*

Dr. Cathy Liu, Jeffrey Taylor and Kiavash Fayyaz

### **Connected Vehicles and Rural Road Weather Management**

*University of Wyoming*

Dr. Rhonda Young and Britton Hammit



# ITS Curriculum Webpage

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## Purpose

To publish information about ITS courses in order to provide:

- Prospective graduate & undergraduate students interested in ITS with a “one-stop-shop” resource with information on university ITS programs & courses; and
- Educators with a platform to feature their ITS courses and an opportunity to informally network with other educators, exchanging lesson plans and best practices.

You can help develop this into a meaningful resource by providing us with:

- A list of your ITS courses, along with one or two web links to course descriptions/information
- A two-to-three sentence description that sums up ITS-related initiatives at your institution
- A university point of contact, and
- A university logo that we can publish on our website.



# ITS Curriculum Webpage

United States Department of Transportation  
 OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH AND TECHNOLOGY  
 Intelligent Transportation Systems  
 Joint Program Office

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ITS Professional Capacity Building Program / Advancing ITS Education

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ITS PCB Home

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 Case Studies  
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 ITS in Academics Curriculum

Free ITS Technical Assistance  
 • ITS Peer-to-Peer Program connects you with experienced peers or technical experts.  
 • ITS Help Line provides technical support by e-mail or telephone at 866-367-7487.

Stay Connected  
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**ITS in Academics Curriculum**  
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Institution	Level	Course Listings	More Information
UNIVERSITY OF MASSACHUSETTS, MA	Graduate/Undergraduate	Graduate Level Transportation Eng...	<a href="#">VIEW DETAILS</a>
California Polytechnic State University, CA	Graduate	MS in Civil and Environmental Engl...	<a href="#">VIEW DETAILS</a>
University of Utah, UT	Graduate	CVEEN Courses:	<a href="#">VIEW DETAILS</a>
University of Washington, MA	Graduate	CEE Courses: http://www.washington.edu/students/crs cat/cee.html	<a href="#">LESS DETAILS</a>

**Department**  
 Department of Civil and Environmental Engineering

**Program**  
 Transportation Engineering: http://www.ce.washington.edu/research/transportation/

**Description**  
 Virtually every aspect of modern economies can be tied directly or indirectly to transportation. Traffic conditions on urban roads and freight networks are negatively impacted by increasing transportation demand and insufficient infrastructure supply. Transportation engineers are needed to develop creative and effective solutions to address these rising challenges.

Students wishing to specialize in transportation engineering will build their expertise in transportation planning, traffic system operations, logistics and freight transportation, intelligent transportation systems, transit system planning, travel demand forecasting, travel behavior analysis, traffic safety, human factors analysis, sustainable transportation infrastructure design, transportation environment interaction, pavement engineering, and highway geometric design and construction. CEE's transportation program works closely with federal and local transportation agencies to ensure that important transportation issues are covered in the research agenda and the education curriculum.

CEE's transportation program has been internationally recognized due to its quality in transportation engineering research and education. It has many fellowships sponsored by both public and private agencies, for example the Automotive Safety

**ITS Course**  
 CEE 590 Traffic Systems Operations (3). Goodchild, McCormack: Operational planning, management of arterial and freeway traffic systems. Review of transportation system management strategies to achieve more efficient use of existing infrastructure, including improved and innovative traffic control systems and demand management policies, measures of effectiveness, impact assessment, traveler response. Introduction to use of relevant computer models and packages. Prerequisite: CEE 327. Offered: A.

**Research Center**  
 PacTrans UTC: http://depts.washington.edu/pactrans/ Start Lab: http://www.uwstarlab.org/ Star Lab Youtube channel: https://www.youtube.com/user/UWSTARLab, Human Factors and Statistical Modeling Lab: http://depts.washington.edu/hfsm/

[LESS DETAILS](#)

Found at:

[www.pcb.its.dot.gov](http://www.pcb.its.dot.gov)

Within ITS in Academics:

<https://www.pcb.its.dot.gov/academics.aspx>

The webpage will ultimately feature a comprehensive list of educational institutions that offer coursework in ITS, connected vehicles, automated vehicles, smart cities, or other innovative transportation research, and provide links to curriculum information and ITS-centric programs.

