

ITS-Davis e-news presents information on research, education, and outreach from the UC Davis Institute of Transportation Studies and affiliated campus departments that host transportation-related programs. For previous issues, visit the [e-news archives](#).

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### **Save the Date**

#### **ITS-Davis Turns 20 – and You Are Invited!**

The year was 1991. Methanol was a promising alternative fuel. California's controversial Zero Emission Vehicle mandate had just been adopted. In developing countries' urban centers, the bicycle was still the primary means of transportation. Hybrid cars were the stuff of dreams. Dan Sperling was appointed director of the new Institute of Transportation Studies at UC Davis.

Sperling's idea was to create an academic institute where several academic worlds – engineering, social science and public policy – would merge; where modelers and lab technicians shared ideas with consumer-behavior and marketing experts, then worked with policy wonks to craft creative solutions to help transport people and goods and make the world a better place.

The institute Sperling envisioned is now one of the world's leading centers for the study of transportation.

Twenty years have flown by!

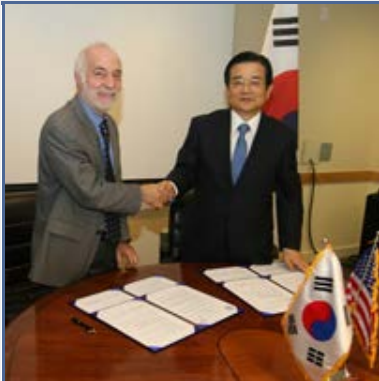
Please join us as we celebrate our 20th Anniversary with an alumni symposium and gala dinner on Saturday, Sept. 24. You will enjoy a day of looking back on our successes and charging forward to a future where global transportation solutions begin with ideas that matter.

During the day, the alumni symposium will examine our research achievements in three areas of emphasis that reflect the Institute's core program expertise: infrastructure; land use and travel behavior; and fuels and vehicles. The evening gala dinner will feature keynote speaker Jack Short, the immediate past secretary general of the International Transport Forum (a program of the Organisation for Economic Co-operation and Development, OECD).

Save the date: Saturday, Sept. 24. Invitations and more details are coming soon.

## New Initiatives

### ITS-Davis Launches Korea Automotive Research Center



Dan Sperling and Ki-Sub Lee, president, Korea Automotive Technology Institute (KATECH) at the MOU signing ceremony

The Institute of Transportation Studies is launching a new Korea Automotive Research Center. ITS-Davis and the Korea Automotive Technology Institute (KATECH) have signed a memorandum of understanding to cooperate on research and exchange information in areas of mutual interest involving clean fuels and vehicles. A delegation from Korea's Ministry of Knowledge Economy recently visited UC Davis to sign the MOU and commit initial funding of \$120,000 per year for two years to ITS-Davis.

Jae Wan Park, an assistant professor of mechanical and aerospace engineering, is the new research center's director. Park directs the Green Transportation Laboratory and conducts research on proton exchange membrane (PEM) fuel cells and lithium-ion batteries. Like ITS-Davis, KATECH has been a leader in alternative fuels and advanced transportation technology research in Korea.

The initial focus of the research center will be on technical, economic and environmental issues related to biofuels and lithium-ion batteries, with discussions centered on research plans, environmental and economic analyses of vehicles and fuels, vehicle simulation testing and market research.

## Research Update

### Axsen's Social Influence Research Wins International Award

Postdoctoral researcher Jonn Axsen has just returned from Europe, where he accepted the prestigious "Young Researcher of the Year Award" from the International Transport Forum, an intergovernmental organization comprising 52 member countries convened by the OECD. His paper, "Interpersonal Influence within Car Buyers' Social Networks: Developing Pro-Societal Values through Sustainable Mobility Policy," was selected from 40 nominees from 16 countries.

Axsen's research finds that it will take more than a reasonable price and good information to get consumers to make more sustainable transportation choices. He says policymakers need to consider social influence, a critical and historically overlooked factor.

"It's clearly time to break out of the simplistic, rational consumer model of behavior when it comes to policy design. Of course, price and information do matter, but social influence is extremely powerful and needs to be explicitly addressed."

Axsen has been a postdoctoral researcher with the Plug-in Hybrid & Electric Vehicle Research Center since completing his Ph.D. at UC Davis last year. In August, he will return to his native Vancouver, British Columbia, where he will be assistant professor of energy and materials modeling and policy at Simon Fraser University.

Learn more about Axsen's award-winning research [here](#).



Jonn Axsen accepts award from Jack Short, immediate past secretary general, International Transport Forum. Also pictured: Jan Mücke, federal parliamentary state secretary, German Ministry of Transport, Building and Urban Development. ©OECD/ITF, Marco Urban, Marc-Steffen Unger, Simone Neumann

## Electric Cars Are Good, Clean Fun, UC Davis Study Finds

The results of the UC Davis MINI E Demonstration are in, and participants found the cars to be fun yet practical, and easy to drive and recharge. Most (88 percent) expressed interest in buying an electric car in the next five years. The yearlong study, conducted by the Plug-in Hybrid & Electric Vehicle Research Center in cooperation with the BMW Group, is the largest publicly available study of electric-car users.

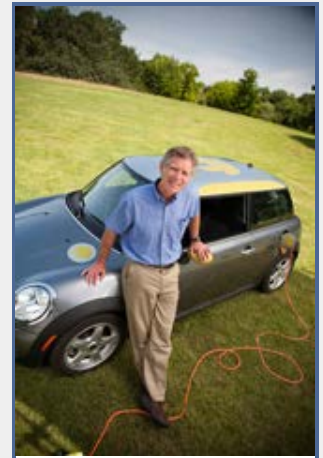
More than 120 families participated in the study, driving the MINI E cars more than 1 million miles in California, New York and New Jersey between June 2009 and June 2010. A total of 450 private households and public fleets leased the electric-conversion MINI Es. The UC Davis study is one of several the BMW Group is conducting on electric vehicles in countries as diverse as China, Germany and the U.K.

Through online and telephone surveys of the participating households, and diaries and in-person interviews with a subset of more than 40 households, the UC Davis MINI E research team examined user behavior, infrastructure use, costs, environmental benefits and other aspects of electric driving.

The results provide valuable insight into new ways that consumers value battery electric vehicles (BEVs). Among the key findings were:

- 100 percent of respondents said BEVs are fun to drive and practical for daily use;
- Respondents said the cars met 90 percent of their daily driving needs;
- 71 percent of respondents drove less than 40 miles a day; 95 percent drove less than 80 miles a day;
- 99 percent of respondents said home charging was easy to use;
- 71 percent of respondents said they are now more likely to purchase a BEV than they were a year ago while only 9 percent said they are less likely;
- 88 percent of respondents said they are interested in buying a BEV or plug-in hybrid electric vehicle in the next five years; and
- By the end of the lease period, MINI E drivers overwhelmingly thought that the electricity for charging their BEV should come from renewable resources, such as solar, wind and hydropower, and were strongly opposed to using coal to generate the electricity.

Download the UC Davis MINI E Consumer Study [here](#).



PH&EV Center director Tom Turrentine with a MINI E

## Ogden a Lead Author on IPCC Renewables Report

Professor Joan Ogden is a lead author of a chapter in a new Intergovernmental Panel on Climate Change (IPCC) report that finds close to 80 percent of the world's energy supply could be met by renewables by mid-century if backed by the right enabling public policies. A summary for policymakers, "Special Report on Renewable Energy Sources and Climate Change Mitigation," was released in May. The full report, which contains the chapter on which Ogden worked, is due to be released this month.

Ogden is one of 16 authors of the report's "Chapter 8: Integration of Renewable Energy into Present and Future Energy Systems."

"We looked at how we could harness renewable resources, such as biomass, wind and solar, to make transportation fuels, and how the energy-supply system and vehicles would have to change," Ogden explains. "For example, to tap wind power, you might have to use a battery car that charges up at home instead of a gasoline car that fills up at a gas station."

Ogden leads ITS-Davis's NextSTEPS (Sustainable Transportation Energy Pathways) Program, which is examining sustainable futures for transportation.

The IPCC summary for policymakers is available [here](#).

## Education Highlights

### Students Learn to Save Oil in a Hurry

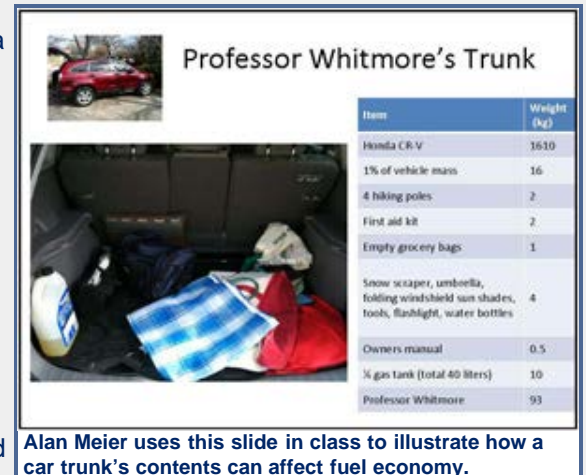
When Alan Meier decided to offer a graduate-level class called “Saving Oil in a Hurry,” he knew it would be a timely topic since gas prices were on the rise again and Middle East unrest was dominating news headlines. His idea for the class grew out of a workshop called “Saving Electricity in a Hurry” that he developed while working at the International Energy Agency in Paris.

A UC Davis faculty researcher and associate director of the UC Davis Energy Efficiency Center, Meier approached the class from two perspectives: First, what measures can individuals or companies take to reduce their own consumption? Second, what kinds of government programs and policies can reduce oil consumption?

Class topics have ranged from truck aerodynamics to measuring the fuel saved by removing a car’s unused roof rack. To help students understand the fuel-economy implications of unnecessary vehicle weight, Meier encouraged students to photograph and weigh the contents of their car trunks. “This gets them thinking about that 60-pound bag of cat litter they don’t need to be driving around with,” Meier says with a chuckle.

Chris Farnlett, a Transportation Technology and Policy master’s student, said he likes the class because it focuses on the concrete actions people can take today. “In other courses, we often may hear about policy changes or new leaps in technology, but we don’t feel like we can make a difference with that information – at least not directly.”

Sherry Blunk, a doctoral student in Biological and Agricultural Engineering, adds that the class has given her a new appreciation for energy use: her own, and that of the population. “I am mindful of leaving my electronics on all day when I know how many watts are sustaining them.”



The slide is titled "Professor Whitmore's Trunk". It features a small image of a red car in the top left corner. Below the title is a larger photograph of the interior of a car trunk, showing various items like a blue and white checkered bag, a red bag, and other miscellaneous items. To the right of the photograph is a table with two columns: "Item" and "Weight (kg)".

Item	Weight (kg)
Honda CR-V	1630
1% of vehicle mass	16
4 hiking poles	2
First aid kit	2
Empty grocery bags	1
Snow scraper, umbrella, folding windshield sun shades, tools, flashlight, water bottles	4
Owners manual	0.5
¼ gas tank (total 40 liters)	10
Professor Whitmore	93

Alan Meier uses this slide in class to illustrate how a car trunk's contents can affect fuel economy.

### Prestigious Student Fellowships Announced

**Micah Fuller**, a Transportation Technology and Policy Ph.D. student who completed his master’s studies last December, has been awarded a prestigious EPA STAR (Science To Achieve Results) Fellowship. The fellowships, granted to approximately 100 students nationwide, award up to \$42,000 per year for up to three years for Ph.D. students.

The purpose of the STAR Fellowship program is to encourage promising students to obtain advanced degrees and pursue careers in an environmental field, as part of a national effort to help ensure that the country meets its current and projected human-resource needs in the environmental science, engineering, and policy fields.

**Adina Boyce**, a Civil and Environmental Engineering Ph.D. student, received a 2011 Dwight David Eisenhower Graduate Fellowship. In addition to supplementing tuition and providing a stipend, a portion of the approximately \$5,000 fellowship may be used toward the recipient’s travel costs for attending the 2012 Transportation Research Board (TRB) Annual Meeting in Washington, D.C.

**Brendan Higgins** has been awarded the 2010–2011 ITS-Davis Chevron Fellowship. Chevron, an ITS-Davis Corporate Affiliate, recognizes a student’s academic excellence and research accomplishments through this annual fellowship. The amount is \$8,600. Higgins is completing his master’s in Transportation Technology and Policy this spring, and plans to pursue a Ph.D. in biological systems engineering.

**Susan Pike**, a Transportation Technology and Policy master’s student, has received a 2011–2012 UC Davis and Humanities Graduate Research Fellowship of \$1,500.

### Congratulations to Our June 2011 Graduates!



Celebrating their achievements are, from left: Robert Lim; Brendan Higgins; Wayne Leighty; Susan Ejlalmaneshan; Prof. Pat Mokhtarian; Ryan Huang; Zhenying Shao; Sinnott Murphy; Jamie Davies-Shawhyde; Nicholas Linesch; Prof. Joan Ogden

## Sustainable Transportation Center Update

### Summer Undergraduate Research Fellowships

Summer is here and the Sustainable Transportation Center is pleased to have a new crop of creative, ambitious young people joining us on research projects. The STC Undergraduate Research Fellowship Program is designed to introduce a select group of undergraduates to the transportation field by engaging them in ongoing research projects with faculty and graduate students. Research topics include travel behavior, transportation systems operations, motor vehicle emissions, alternative fuel technologies, intelligent technologies and energy policy. This summer's undergraduate fellows are pursuing majors in Civil and Environmental Engineering and Environmental Policy Analysis and Planning. They will be working with professors Susan Handy, Alissa Kendall, Pat Mokhtarian, Deb Niemeier and Stephen Wheeler.

### Spring Webinars a Continued Success

The Sustainable Transportation Center's spring series of Research Webinars for Professionals wrapped up this month with "Lessons from Abroad," featuring three California researchers. David Czerwinski of the Mineta Transportation Institute at San Jose State University presented "Policy Issues in U.S. Transportation Public-Private Partnerships: Lessons from Australia." Deborah Salon, a researcher here at the STC, presented "Do Investments in Urban Public Transit Improve Employment Outcomes for Residents? Evidence from Bogotá, Colombia." Thomas O'Brien of the METRANS Transportation Center at CSU Long Beach presented "Urban Goods Movement Planning in the U.S. and Canada: Lessons from the Vancouver and Los Angeles Metro Areas."

The May webinar presented "Topics in Transportation Behavior." April's topic was "Rethinking Infrastructure."

You can access presentations and recordings of the webinars [here](#).

The webinars are a joint offering of the STC and California's other University Transportation Centers, made possible with

support from the Caltrans Division of Research and Innovation.

## Advisors Review Our Progress and Plans



The STC's External Advisory Council met in April to review the center's accomplishments during its fourth year of operation and preview its plans for the fifth year.

The council learned about the latest faculty research and seed grants, dissertation and undergraduate fellowships, and courses offered. They reviewed results of the latest Campus Travel Survey and received an update on ongoing research at affiliated ITS-Davis research programs, including the Plug-in Hybrid & Electric Vehicle Research Center, NextSTEPS, ULTRANS (Urban Land Use and Transportation Center), and the UC Pavement Research Center.

Among the highlights of the meeting was a presentation by Ph.D. student Tai Stillwater, whose eco-driving research explores how drivers change their driving behavior and improve their fuel economy when they receive direct feedback. This research is the first application of sociological behavior theories to in-vehicle feedback

for eco-driving.

Although the future of the federal University Transportation Centers program remains uncertain, the council discussed potential new initiatives for the STC for the upcoming year and the longer term. The STC receives up to \$500,000 annually from the U.S. Department of Transportation that is matched by Caltrans.

## STC Welcomes New Coordinator

Anne-Marie Flynn has joined the staff of STC as the center coordinator. A native of Northern California, Flynn has more than 20 years of experience in program management, training, evaluation and fund development for non-profit organizations. She has a bachelor's degree in Sociology and Ethnic Studies from UCLA and a master's degree in International Agricultural Development from UC Davis.

## ITS-Davis Highlights

### In Memoriam: Jack Johnston



We are shocked and saddened to learn that our longtime friend and colleague Jack Johnston was killed in a car accident in late June.

Jack was a brilliant and thoughtful man who devoted his career to energy R&D. He began his career in polymer science and held positions at Union Carbide, Exxon Chemical and ExxonMobil Research & Engineering. From 2000 until his retirement in 2006, he was responsible for technology R&D policy related to advanced energy systems and served as the planning executive for ExxonMobil's corporate strategic research labs.

Jack was a special friend of ITS-Davis. He served as an enthusiastic mentor for many of our students and as a champion of many of our research programs. He eagerly and generously contributed to many ITS-Davis workshops and conferences, and was a valued and engaged member of the steering committee for the Institute's biennial Asilomar Conference.

Jack was not only an exceptional scientist and leader—he had an irrepressible *joie de vivre* and a wonderful sense of humor. Serving on a committee or project with Jack was instructive and productive. It was also a lot of fun.

We remember him as a caring and cherished friend. We will miss him.

## Development Update

Private support from individuals, corporations and foundations is essential to ensuring that ITS-Davis achieves its mission: *to serve the needs of society by organizing and conducting multidisciplinary research on emerging and important transportation issues, disseminating this research through conferences and scholarly publications, and enhancing the quality and breadth of transportation education.*

While government grants fund the largest part of the ITS-Davis budget, private support adds more than \$1 million annually to the Institute's research, education and outreach programs.

In January 2011, Joan Ogden and Dan Sperling launched the NextSTEPS Program, a four-year research consortium formed to study transition scenarios to new vehicle technologies that can inform policy and industry investments. Members contribute \$60,000 annually to participate in NextSTEPS. Current members include South Coast Air Quality Management District, Caltrans, U.S. Department of Energy, BMW, Daimler, GM, Honda, Nissan, BP, Chevron, Indian Oil, SEMPRA, Shell, and Volkswagen. This program follows on the successful completion of the Sustainable Transportation Energy Pathways (STEPS) consortium. Fifteen faculty and researchers and 25 graduate students are involved in NextSTEPS research projects.

Gifts to *Friends of ITS-Davis* enhance students' educational experience. ITS-Davis graduate students are at the forefront of essential research in travel behavior and transport systems modeling, environmental vehicle technologies and fuels, and environmental impacts. Click [here](#) to make a gift.

A committee chaired by Professor Pat Mokhtarian has launched the Ryuichi Kitamura Fund in memory of her mentor and colleague Ryuichi Kitamura, who divided his career between UC Davis and Kyoto University. Income from the fund will be used to recognize outstanding travel-behavior scholarship by students anywhere in the world and foster greater intellectual and cultural exchange between the University of California in the West and universities in the East. For more information or to make a gift, click [here](#).

In 2008, Larry Rudwick and Kathleen McBride created the McWick Technology Foundation Fund for Clean Vehicle Technology Fellowship/Scholarship Program to fund scholarships and a fellowship to help to attract outstanding undergraduates and graduate students into clean-vehicle research, especially vehicles utilizing plug-in electricity. This academic year the following students received McWick support: Susan Ejlalmaneshan, Dan Scrivano, M.Q. Yelena Wu and Alex Lin.

## ULTRANS Explained



The Urban Land Use and Transportation Center has released a new brochure giving an overview of their work. ULTRANS research and outreach enhance land use and transportation policies and decisions by enabling full consideration of environmental, economic, and social equity impacts. Download the brochure [here](#).

## People: Awards, Accolades, Accomplishments

Gov. Jerry Brown has appointed **Anthony Eggert**, an ITS-Davis Transportation Technology and Policy graduate and former associate researcher, to the California Energy Commission, a position he also held in 2010 as an appointee under Gov. Arnold Schwarzenegger.

Professor **Andy Frank** has been named to the "[Automotive News Electrifying 100](#)," the publication's first-ever list of 100 of the most influential people globally who are driving the world toward vehicle electrification.

**John Harvey** and the UC Pavement Research Center's research to develop cheaper, greener pavement is featured prominently in the [\*Chronicle of Higher Education\*](#).



Professor Andy Frank



Sylvia Wright

ITS-Davis has appointed its first senior director of communications. **Sylvia Wright** has promoted the Institute since 1997 as a writer, editor, photographer and videographer in the UC Davis News Service. She was previously the science editor at the San Jose Mercury News and associate editor of a Consumer Reports health newsletter. She has taught hundreds of scientists to communicate effectively with news media. She has a bachelor's degree in mass communications from the University of South Florida (Tampa) and was a Knight Science Journalism Fellow at MIT.

**Dan Sperling** recently took part in a Commonwealth Club presentation on the coming electric-drive revolution in the new-car market. Sperling and panelists addressed topics such as the opportunities and barriers facing plug-in electric vehicles, policies and price signals that will help build the market, and the role of consumers.



Dan Sperling shares a laugh with panelists. Seated with Sperling, far left, are Forrest Beanum, Coda Automotive; Michael Robinson, General Motors; Bill Reinert, Toyota; Oliver Kuttner, Edison2; Greg Dalton, Climate One. Photo credit: Ed Ritger/The Commonwealth Club