



e-news



ITS-Davis e-news is the electronic newsletter of the UC Davis Institute of Transportation Studies. It is written for alumni, friends and affiliates interested in our activities. *ITS-Davis e-news* reports information directly from ITS-Davis and from campus departments affiliated with the Institute that conduct transportation-related research and education. For previous issues, see the [e-news archives](#).

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New Initiatives

CARLINK II OFF TO A SUCCESSFUL START: Radical Changes in Commute

Mark Erickson thinks it's a great deal. As one of the first to sign up for CarLink II, the 37-year old engineer from Palo Alto pays \$300 a month for the use of a brand new Honda Civic — and that includes insurance, free fill-ups and a GPS navigation system.

Erickson recently signed on to CarLink II, the second ITS-Davis partnership to design and deploy an innovative research pilot program to test the utility and viability of commuter carsharing. Every weekday, he drives the car from his home to the Palo Alto Caltrain station, where he boards the train to work. Shortly thereafter, another driver picks up the car and takes it to work in the Palo Alto region. During the day, other drivers may use the car as needed. The car returns to the Palo Alto California Avenue train station at day's end, ready for Erickson to drive home after work.

Erickson, who also has the car at home on the weekend, is thrilled. "It's just like having your own family car," he told the *San Jose Mercury News*.



Dr. Susan Shaheen, Carlink II program manager and co-director, ITS-Davis New Mobility Center

CarLink II, a partnership between ITS-Davis, American Honda Motor Co., Partners for Advanced Transit and Highways (PATH), Caltrans and Caltrain, brings together the commuting efficiency of public transit with the convenience and flexibility of automobile ownership, explains Susan Shaheen, CarLink II program director and a co-director of the ITS-Davis New Mobility Center.

"Obstacles for commuters to use transit include availability, accessibility or the lack of flexibility when a car is needed on demand," she said at the public launch of CarLink II on August 23. "CarLink II addresses this



Carlink II users (L to R) Mark Hadjimehdi, Gayle Lillard and Tanya Mirosnkoff, all of SAP Labs, Inc.

with reserved parking at the train station and at office parks where the vehicles are also available during the day for meetings and personal use.” Shaheen is considered a world leader in designing and evaluating shared vehicle systems in different transportation demand environments.

The CarLink II study builds upon the research of the CarLink I longitudinal market survey and field test (Shaheen, 1999; Shaheen *et al.*, 2000). In addition to investigating the perceptions and attitudes of carsharing participants, CarLink II examines the updated CarLink model and increases attention to cost issues (e.g., users’ willingness-to-pay and perceived value of various CarLink features) and commercial potential.

An important component of CarLink II is its testing of state-of-the-art smart carsharing technologies. To keep tabs on the cars with multiple employers and employees participating, Honda Motor Company developed the CarLink II technology, which seamlessly integrates vehicle tracking, data collection (trip start/stop time, odometer reading, and fuel consumption), and Internet-based reservations. Users access the vehicles with a contact-free key fob. The CarLink II in-vehicle technology recognizes participants by the key fob and requires a corresponding PIN to start the ignition.

Each vehicle contains global positioning and wireless communication systems, allowing the CarLink management team to monitor vehicle position real time and track vehicle usage. The vehicles are also equipped with in-vehicle navigation systems that provide drivers with directions to specified destinations. Day Users reserve vehicles during daytime hours through a secure on-line reservations page at www.gocarlink.com. The potential of these technologies to enhance service capabilities and reduce program costs is central to the CarLink II program evaluation and to realizing the economic sustainability of this carsharing model.

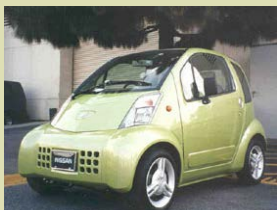
This research will provide valuable information to aid in the design of future carsharing systems, help refine and transition the CarLink II pilot project to a permanent enterprise, document lessons learned, and assess societal/environmental benefits. The pilot program will continue until June 2002 and includes a continuation strategy to expand to an ongoing commuter carsharing service in outlying areas.

Current CarLink II participating companies include Adobe Systems, SAP, Motorola and Genencor.



Carlink II program team members (L to R): Molly Anne Meyn (PATH), John Wright (PATH), Cliff Loveland (Caltrans), Pat Conroy (PATH), Susan Shaheen (Program Manager, Carlink II), Rebecca Pearson (PATH); Bob Justice (Caltrans); Linda Novick (Operations Manager, ITS-Davis), Robert Bienenfeld (American Honda), Robert Uyeki (Honda R&D Americas), Betsy Morris (PATH), Barbara Bower (ITS-Davis) and Dimitri Loukakos (PATH)

CITY CARS COMING TO DAVIS: Nissan and Others to Help Extend ITS-Davis’ Historic Electric-Drive Vehicle Market Research



Fifteen Nissan Hyperminis will aid ITS-Davis market research

Davis is known for having the highest per capita concentration of bicycles in the country. Soon, it will also be known for having the highest concentration of city electric vehicles in the U.S.

After months of planning, it is only a matter of weeks before 15 Nissan Hypermini city EVs arrive on the UC Davis campus for a new demonstration and research initiative that will test market response to the cars. The project, under the direction of ITS-Davis researchers Ken Kurani and Tom Turrentine, will begin later this month.

There are two primary objectives of this project:

- To assess the viability of the Hypermini and city EVs in a variety of specific applications among campus employees
- To assess the response of Davis residents to the presence of Hypermini vehicles in their community

UC Davis employees will drive the cars. They will keep diaries to record their experiences and impressions of the cars’ physical attributes, performance, usefulness, and charging convenience, as well as their perceptions of safety.

A unique portion of the research focuses not on the drivers, but on the general public’s reaction to seeing the cars around town, explains Kurani. “Listening to the conversations the vehicles prompt is an important goal of this work. What do people say about the vehicles, do they imagine they would want such a vehicle? What do they imagine such vehicles do to their own travel, their town, and their world?” This project complements Kurani and Turrentine’s ongoing clean vehicle social marketing research, Kurani adds.

Nissan is providing the 15 vehicles, plus the vast majority of the research funding. Other sponsors include: McWick Technology Foundation, the Yolo-Solano Air Quality Management District and UC Davis Transportation and Parking Services. The next issue of ITS-Davis e-news will feature news on the program’s launch.

GREENHOUSE GAS SCENARIOS: Reports Outline Options for Transportation in Developing Countries

ITS-Davis Director Dan Sperling is co-authoring a series of five reports on opportunities to curb growth of transport-sector emissions in developing countries. The first two reports were released in July at a follow-up meeting on the Kyoto Protocol in Bonn, Germany.

Funded by the Pew Center on Global Climate Change, the reports find that transport-related greenhouse gas emissions could quadruple in Delhi, India and increase sevenfold in Shanghai, China by 2020. At the same time, the reports offer hope; policies that promote cleaner technologies, public transit and other transportation alternatives could cut the projected emission increases by as much as half.

Controlling greenhouse gases from the transport sector is difficult, says Sperling, because transport demand is closely linked to economic and social activity. "Any strategies and policies to reduce GHG emissions must do so in the context of broader economic, social, and environmental priorities, while being sensitive to the local cultural perspectives. That's a tall order," he explains.

Eileen Claussen, president of the Pew Center, notes that one of the challenges in dealing with climate change is helping developing nations forge cleaner, sustainable paths to development. "These reports identify ways that fast-growing cities like Delhi and Shanghai can meet the demand for high-quality transportation while easing congestion, improving air quality, and protecting the global climate," she said.

A few key findings of the Delhi Report:

- By 2000, Delhi had about 2.6 million motor vehicles - 200 for every 1,000 inhabitants, a rate far higher than most cities with similar incomes (most are small scooters and motorcycles).
- Delhi's high scooter and motorcycle ownership rates show that demand for personal mobility can be achieved even at low income levels.
- In projecting future emissions, one scenario, which extrapolates present trends in Delhi, results in more than a fourfold increase in transport-related GHG emissions between 2000 and 2020.
- A second scenario, premised on aggressive shifts toward more environmentally benign transportation, results in a doubling of GHG emissions in the 20-year period. In this scenario, conventional-sized cars drop from 30 to 19 percent of motorized travel and mass transit increases its share from 49 to 53 percent. More efficient scooters and mini-cars account for most of the remaining motorized travel, and bicycling becomes more important, especially for the poor.
- Even though greenhouse gases will soar under either scenario, the pursuit of the lower greenhouse gas path in the second scenario leads to far fewer emissions – and much lower transport and energy costs. This path does not require revolutionary change.

A few key findings of the Shanghai report:

- Shanghai's transportation sector currently generates extremely low levels of greenhouse gas emissions for a city of its size and affluence.
- Emissions are expected to soar four- to sevenfold due to the city's efforts to reduce its very high population density and to the anticipated increase in automobiles following China's accession to the World Trade Organization. City planners project that the number of cars and trucks in operation by 2020 will quadruple.
- Shanghai already has established a highly competent transportation system and is investing in new infrastructure, with rail and bus transit and "intelligent" transportation technologies.
- To the extent Shanghai can restrain motorization and emissions, it may serve as a model for other cities in the developing world.

Sperling worked with a team of experts on both reports, with co-author Ranjan Bose of the Tata Energy Research Institute in New Delhi, on the Delhi report, and Hongchang Zhou, a visiting scholar at ITS-Davis from Tongji University in Shanghai (and who is now at UC Riverside), as co-author on the Shanghai report. Other participants include: ITS-Davis Researcher Mark A. Delucchi, ITS-Davis graduate students Lorien Redmond and Deborah Salon; and Lee Schipper of the International Energy Agency, Paris.

Case studies of Chile and South Africa, and an overview report, will be released early next year. The Delhi and Shanghai reports are available from the Pew Center through the ITS-Davis Publications Office. See the Publications List below.

OUR AIR QUALITY FUTURE: New Model Helps Researchers Identify How Different Pollutants Interact

Michael Kleeman, assistant professor of Civil and Environmental Engineering, smiles proudly at the rows and stacks of more than 200 computers humming away in a laboratory on the UC Davis campus. Although he wasn't the first on campus to network multiple computers to do the work of a far more expensive supercomputer — he's the second to do so — his "Beowulf" system is the campus' largest computer cluster.



Dan Sperling discusses the relationship between car driving and per capita income in Bonn, Germany (Photograph courtesy IISD / Leila Mead, Photographer)



Simulated visibility results: San Gabriel mountains of the South Coast air quality basin (Los Angeles) from seven km for a clear day, polluted day, and polluted day with emissions controls

"The system has been very reliable and productive since we put it together in the fall of 1999," he says, adding that even though he has no formal computer science education, he learned how to construct such computer systems while doing his Ph.D. research in Environmental Engineering Science at the California Institute of Technology.

As proud as he is of his computer system, he says the multidisciplinary approach to air quality research is the most rewarding aspect of his work. "In order to better understand air quality problems we've adopted an integrated approach. We design experiments to measure what gets released to the atmosphere from different sources and what is in the air that we actually breathe. We then build a mathematical model that describes how pollutants are transported and evolve in the atmosphere in an urban area. Finally, we design and construct the computer system that runs the mathematical model so that we can pull everything together into a coherent picture. It's a diverse array of activities and tools, designed to solve one problem."

Kleeman's research focuses on atmospheric chemistry and phase-transfer processes – how tiny solid or liquid airborne particles form and evolve in the atmosphere under different conditions. If scientists can better understand and model these complex processes, they can better manage the impact that air pollution has on human health and visibility. In fact, research of this type could eventually help explain some of the relationships between human activity and climate change.

His high-resolution air quality model is currently being used to determine how different emissions sources contribute to air pollution in the greater Los Angeles area. The model tracks the pollutants that lead to the formation of photochemical "smog," including precursor gases, ozone, and airborne particles. What makes this model unique is its ability to follow the evolution of pollutants released by individual sources as they undergo physical and chemical transformation in the atmosphere. Other models typically blend all of the pollutants at the source.

The primary findings of his research to date involve the relationship between secondary formation processes and background marine particles that are blown into the Los Angeles area. For example, Kleeman's research has shown that the most severe pollution episodes for airborne particles with diameter less than 2.5 microns (PM2.5) actually are caused by the formation of secondary particulate matter on background marine particles. These insights help scientists and regulators to design emissions control programs that are targeted at the sources that are responsible for the air quality problem.



Just part of UC Davis' largest computer cluster that supports Michael Kleeman's air quality research

"The model has given us valuable insight into how air pollution works in LA. It is helping us to identify new sources that contribute to air pollution, and it allows us to answer the what-ifs," says Kleeman. "What if we experience a period of rising temperatures due to climate change? Or what if different regulations are put in place that will reduce emissions from certain sources?" he posits.

Now that the model has been tested, Kleeman plans to apply it to central California to help identify the sources that contribute to poor air quality in the San Joaquin Valley. Kleeman's research has been funded by the California Air Resources Board and the U.S. Environmental Protection Agency.

EXPLORING THE OPTIONS: Meeting the ZEV Mandate with Grid-Connected Hybrids and City Cars

More than 80 attendees representing government, automakers, components suppliers and utilities filled the conference room at the UC Davis Buehler Alumni & Visitors Center in May for "Meeting the New CARB ZEV Mandate Requirements: Grid-Connected Hybrids and City EVs," a two-day Affiliate Program workshop organized by ITS-Davis Research Engineer Andrew Burke.

"Now that the California Air Resources Board has affirmed its Zero-Emission Vehicle mandate, the industry emphasis has shifted focus from the regulatory process itself, to meeting the regulatory requirements," explained Burke. "And there is still a lot of gray area about how automakers can comply with these kinds of vehicles. It's important to discuss all the options."



Workshop attendees enjoy informal discussions during lunch

Two options for meeting the mandate outside of producing full function electric vehicles or super-ultra-low-emission vehicles that qualify for partial ZEV credit, are grid-connected hybrids and city EVs. Grid-connected hybrids are battery-dominant hybrid-electric gasoline cars that plug in to the electricity grid to recharge. Unlike the gasoline-dominant hybrid cars available now, grid-connected vehicles would have some zero-emission all-electric range. City EVs are small electric vehicles such as the Toyota e-com, Nissan Hypermini, or Ford Think City. With top speeds of around 55 mph, these cars are designed for around town and short commute travel.

The workshop included presentations from CARB specifically addressing the recent regulatory changes that impact grid-connected hybrids and city

cars, as well as presentations by automakers, battery manufacturers, and federal regulators. Plug-in hybrid topics included vehicle design options with an emphasis on cost and performance, batteries and marketing issues. On the City EV side, topics included use, cost and availability, battery and marketing issues.

Several ITS-Davis faculty and researchers presented in their areas of expertise. Dr. Burke spoke about his research on the use of ultracapacitors with batteries, which, he said, could provide double the usable energy and at least double the available power in a grid-connected vehicle.

ITS-Davis researcher Ken Kurani shared his insights on marketing city cars in small communities such as Davis and San Luis Obispo, where there is a high level of environmental awareness.

Susan Shaheen, co-chair of the ITS-Davis New Mobility Center, told attendees about her program's plan to launch the CarLink II carsharing demonstration (as described above under New Initiatives.) She discussed how manufacturers may use the ZEV mandate's shared vehicle provision to gain multiple ZEV credits.

The workshop closed with a spirited panel discussion that covered the breadth of topics discussed over the previous two days. All attendees have received a full set of the presentations. Non-attendees may order a set from ITS-Davis publications for \$15. See the listing below.

PUBLICATIONS FROM ITS-DAVIS: Hot off the Presses

- **Address of Geoffrey E.H. Ballard**, Ballard, Geoffrey E.H., at a dinner in his honor hosted by ITS-Davis, July 18, 2001, pp. 13, ITS-Davis Pub #RR-01-07 (\$15)
- **Transportation in Developing Countries: Greenhouse Gas Scenarios for Shanghai, China**, Zhou, Hongchang, D. Sperling, M. Delucchi, D. Salon, Prepared for the Pew Center on Global Climate Change, July 2001, pp. 45, ITS-Davis Pub #RP-01-14 (available through Pew Center)
- **Transportation in Developing Countries: Greenhouse Gas Scenarios for Delhi, India**, Bose, Ranjan, K.S. Nesamani, G. Tiwari, D. Sperling, M. Delucchi, L. Redmond, L. Schipper, Prepared for the Pew Center on Global Climate Change, May 2001, pp. 43, ITS-Davis Pub #RP-01-13 (available through Pew Center)
- **Update of Ultracapacitor Technology and Hybrid Vehicle Applications: Passenger Cars and Transit Buses**, Burke, Andrew F., *EVS-18, Berlin*, October 2001, pp. 12, ITS-Davis Pub #RP-01-12
- **Marketing Clean and Efficient Vehicles: Workshop Proceedings**, Turrentine, Thomas S., K. Kurani, March 2001, pp. 148, ITS-Davis Pub #RR-01-06 (\$15)
- **Design and Development of the UC Davis FutureTruck**, Meyr, Nathaniel, B. Huff, C. Carde, J. Parks, R. Schurhoff, D. Garas, S. Saephan, M. Alexander, M. Duvall, A. Frank, June 2001, pp. 18, ITS-Davis Pub #RR-01-05 (\$5)
- **A Grid-Based Mobile Sources Emissions Inventory Model**, Zheng, Yi, D. Neimeier, T. Kear, Department of Civil and Environmental Engineering, June 2001, pp. 86, ITS-Davis Pub #RR-01-04 (\$10)
- **Vehicle-to-Grid Power: Battery, Hybrid, and Fuel Cell Vehicles as Resources for Distributed Electric Power in California**, Kempton, Willett, J. Tomic, S. Letendre, A. Brooks, T. Lipman, Prepared for California Air Resources Board and the California Environmental Protection Agency and Los Angeles Department of Water and Power, Electric Transportation Program, June 2001, pp. 40, ITS-Davis Pub #RR-01-03 (\$5)
- **Proceedings: ZEV Mandate Workshop**, Burke, Andrew F., et al., May 2001, pp. 76, ITS-Davis Pub #RR-01-02 (\$15)
- **California Conformity Timelines: EMFAC-2000 Approval Considerations**, Eisinger, Douglas, D. Niemeier, T. Kear, UC Davis-Caltrans Air Quality Project, May 2001, pp. 26, ITS-Davis Pub #RR-01-01 (\$5)
- **The Carlink II Pilot Program: Testing a Commuter-Based Carsharing Model**, Shaheen, Susan A., J. Wright, *4th International IEEE Conference on Intelligent Transportation Systems Proceedings*, August 2001, pp. 6, ITS-Davis Pub #RP-01-11
- **Carsharing in the United States: Examining Market Potential**, Shaheen, Susan A., *8th World Congress on Intelligent Transportation Systems*, October 2001, pp. 12, ITS-Davis PUB #RP-01-10
- **The Positive Utility of the Commute: Modeling Ideal Commute Time and Relative Commute Amount**, Redmond, Lothlorien S., P. L. Mokhtarian, *Transportation*, January 2001, pp. 179-205, ITS-Davis Pub #RP-01-09
- **Traffic Emission Pollution Sampling and Analysis on Urban Streets with High-rising Buildings**, Zhou, Hongchang, Sperling, D., *Transportation Research Part D, Vol. 6D, No. 4*, July 2001, pp. 269-281, ITS-Davis Pub #RP-01-08
- **Improving the Resolution of Gridded-hourly Mobile Emissions: Incorporating Spatial Variability and Handling Missing Data**, Hicks, J., D.A. Niemeier, *Transportation Research Part D, Vol. 6D*, May 2001, pp. 153-177, ITS-Davis Pub #RP-01-07
- **Integrating Vehicle Design and Human Factors: Minimizing Elderly Driving Constraints**, Shaheen, Susan A., D. Niemeier, *Transportation Research Part C 9* (January 2001) pp.151-174, ITS-Davis Pub# RP-01-06

ITS-Davis publications: fax, e-mail or mail.

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Mail: Attn: Publications Desk, Institute of Transportation Studies, UC Davis,
One Shields Avenue, Davis, CA 95616-8762

A List of Fuel Cell Vehicle Modeling Program Papers

http://fcv.ucdavis.edu/fcvprog/FCVMP_Publications_rev1.html

Education Highlights

'01 GRADS HEAD OUT IN THE WORLD: ITS-Davis congratulates the latest group of students who graduated over the spring or summer

The following graduated from the ITS-Davis graduate group in Transportation Technology and Policy:

C.J. Brodrick, Ph.D.

Advisor: Harry Dwyer

Thesis: Effects of Real-World Activities and Loads on Heavy-Duty Diesel Vehicle Emissions

Post-graduate: Post-doctoral research at ITS-Davis on diesel emissions and fuel cells for trucks

Richard Counts, M.S.

Advisor: Sy Schwartz

Thesis: The development of the Fuel Cell Vehicle Market with an integrated policy for the reduction of vehicle sources of greenhouse gases and critical pollutants

Post-graduate: Joining the Peace Corps and heading to Honduras

Joshua Cunningham, M.S.

Advisor: Bob Moore

Thesis: Air System Management for Fuel Cell Vehicle Applications

Post-graduate: Continuing on at UC Davis with a one-year appointment in the Fuel Cell Vehicle Modeling Program

David Dick, M.S.

Advisor: Dan Sperling

Exam

Post-graduate: Starting a three-month internship with the Metropolitan Transportation Commission (MTC) in Oakland

Karl-Heinz Hauer, Ph.D.

Advisor: Bob Moore

Thesis: Analysis Tool for Fuel Cell Vehicle Hardware and Software (Controls) with an Application to Fuel Economy Comparisons of Alternative Systems Designs

Post-graduate: Returning to West Germany to start up a new company with venture capital from Volkswagen AG

Civil Engineering graduates in the field of transportation include:

Qiuzi Chen, Ph.D.

Advisor: Riyuichi Kitamura

Thesis: An Exploration of Activity Scheduling and Rescheduling Processes.

Thirayoot Limanond, Ph.D.

Advisor: Deb Niemeier

Thesis: Effects of Household Structure, Neighborhood Setting, and Intra-Neighborhood Location on Shopping Travel Decisions of Residents in Traditional Neighborhoods: a case study of three neighborhoods in Puget Sound, WA.

Jie Lin, M.S.

Advisor: Deb Niemeier

Thesis: New development of regional driving cycles using Markov process theory

Post-graduate: Ph.D. candidate at UC Davis and consultant for DKS Associates

In the Ecology program, the following transportation student graduated:

Erin Foresman, M.S.

Advisor: Deb Niemeier

ITS-Davis and Campus Highlights

FCV PROGRAM CAPTIVATES ATTENDEES OF JULY TECHNICAL CONFERENCE AND WORKSHOP

Fuel cell technology advances and policy directions took center stage the week of July 17-20 as the ITS-Davis Fuel Cell Vehicle Modeling Program hosted two back-to-back events along with a dinner honoring Dr. Geoffrey Ballard.



Dr. Robert Moore addresses conference attendees

Approximately 60 people attended each program, although the makeup of each was quite different; the Fuel Cell Vehicle Modeling Workshop July 17-18 drew technical experts while the Fuel Cell Vehicle Technical Conference July 19-20 drew high-level policymakers.

Presentations at the Modeling Workshop included a report on the UC Davis fuel cell vehicle and fuel simulation and analysis effort. Breakout sessions examined three fuel scenarios: direct hydrogen, indirect methanol and indirect

hydrocarbon (gasoline).

Attendees at the Technical Conference heard summaries of the preceding Modeling Workshop. The focus of this gathering was to identify and discuss implications for technologies needed to realize a fully integrated vehicle and fueling system. Attendees examined the "big picture" issues facing FCV commercialization including policy, transitions, public acceptance, and infrastructure.

Between the two events, ITS-Davis hosted a special dinner honoring Geoffrey Ballard. FCVMP Director Bob Moore began the ceremony by explaining Ballard's role as a founding member of the ITS-Davis Board. Moore added that Ballard and his company have contributed much to the FCV program by donating an early Ballard fuel cell stack to the school's lab and by serving as a FCV GATE Center advisor, a mentor to students, and an advisor on FCVMP issues

In his prepared remarks, Ballard explained why he thought his company has been successful in introducing a new technology to a very established and conservative industry that has traditionally opposed change.

He explained that he chose the more radical of two possible paths, an all out assault on fossil fuel combustion in the air, because the technology was timely and conformed to recognized principles and accepted standards of society. Society was ready for a change, he noted, a change in the way the world thinks about power. Ballard chose to tackle the power industry on all fronts, "Stationary, portable, transportation, space; to introduce distributive power as a viable alternative to the power grid and centralized production.

"We are practitioners at the dawn of a new energy age, the age of hydrogen," he said, adding, "I think it is now apparent that even if Ballard the company is not successful economically in the long run, Ballard, by putting a fuel cell vehicle on the road, has changed the way the world thinks about power, and the world will not go back to where it was."



Geoffrey Ballard and Dan Sperling at the dinner honoring Dr. Ballard

Other speakers included Paul Howard, a fellow Ballard founder; California Air Resources Board Chairman Alan Lloyd; ITS-Davis Board of Advisors chairwoman and former CARB chair Jananne Sharpless; Henry Wedaa, a former chair of the South Coast Air Quality Management District; and Neil Otto, retired president, Ballard Automotive.

The ITS-Davis FCV Center will hold three tutorials on FCV issues this fall and winter in Davis, Sacramento and Washington, D.C. For more information, see the Institute's [Coming Events](http://www.its.ucdavis.edu/events.html) web page at <http://www.its.ucdavis.edu/events.html>.

NEW GIFTS AND GRANTS FOR ITS-DAVIS

Support from foundations, industry, government and others is integral to ITS-Davis' ongoing programs. We are pleased to acknowledge below the following grants made since February 2001.

Corporate Affiliate Program

- Nissan Technical Center North America/Nissan North America, ExxonMobil - Patron Level support of \$40,000/yr
- Chevron Products Company, Panasonic EV Energy, Subaru, Superfarad Svenska - Membership support/renewals of \$15,000/yr or more

Hypermini/CEV Market Research Program

- Nissan Technical Center North America - \$175,000 leadership grant
- Nissan North America, Inc. - 15 Nissan Hypermini vehicles for one year
- McWick Technology Foundation - \$20,000 from the foundation's support to ITS-Davis
- Yolo-Solano Air Quality Management District - \$5,000
- UC Davis Transportation and Parking Services - \$5,000

Fuel Cell Vehicle Modeling Program

- Ford Motor Company, Innogy Technology Ventures, Ltd., Petrobras and Schlumberger-Doll Research - \$80,000 to become a Supporting Donor of the program, and support through 2001
- BP, Chevron Research & Technology, DaimlerChrysler, Honda R&D Americas, Inc., Nissan Technical Center North America, Ricardo Consulting, Toyota Motor Corporation, Fiat Research Center, General Motors Global Alternative Propulsion Center, Hyundai Motor Company, Volkswagen AG and one anonymous member - \$20,000/yr renewals for 2001 research program

Asilomar Conference Support

- U.S. Department of Energy
- U.S. Environmental Protection Agency

- Natural Resources Canada
- The Energy Foundation
- Chevron
- ExxonMobil

ITS-DAVIS STAFF RECOGNIZED IN COMMUNITY



City of Davis Mayor Ken Wagstaff congratulates Joe Krovoza

Joe Krovoza, ITS-Davis Director of Development, recently received the Environmental Recognition Award from the City of Davis. Krovoza was honored for his volunteer work on the board of the Putah Creek Council, and in particular, for his involvement in negotiations to secure greater flows for Davis' local creek. The city also acknowledged his work for ITS-Davis and his family's commitment to energy conservation by installing a 2kw photovoltaic system that generates over 80 percent of their home's electricity.

EXTRA! READ ALL ABOUT IT: ITS-Davis/UC Davis Faculty and Researchers Quoted in the News

- Susan Shaheen, in *San Jose Mercury News*, on CarLink II launch in Palo Alto, August 24. Another article on the project appeared in the *San Mateo Times*, August 24
- Dan Sperling, on *Voice of America News Now*, on Greenhouse Gas Strategies for Transportation Sectors of Developing countries, the two recently released studies funded by the Pew Global Climate Change Initiative, August 15 and 16; and on *Environmental News Network*, August 7
- Marshall Miller in *Davis Enterprise* on plans to test hydrogen/CNG hybrid and hydrogen fuel cell buses in Davis, August 14
- Andy Burke and CJ Brodrick, in *Comstock's Business*, on fuel cell research and development occurring around the California capital region, August 2001
- Dan Sperling and Andy Frank, in *San Francisco Chronicle*, on the UC Davis FutureTruck success and the future of HEVs, August 5
- Susan Shaheen, in *San Francisco Chronicle*, on carsharing and the upcoming launch of CarLink II, July 9
- Mark Duvall, in *Los Angeles Times*, on UC Davis FutureTruck Success, June 13
- Pat Mokhtarian, in *Atlanta Journal-Constitution*, on how some people like long commutes, June 1

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