



# e-news



ITS-Davis e-news is the electronic newsletter of the UC Davis Institute of Transportation Studies. Written for alumni and friends, ITS-Davis e-news reports information from ITS-Davis and affiliated campus departments that host transportation-related programs. For previous issues, see the [e-news archives](#).

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December 2002

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## New Initiatives

### Initial Toyota Fuel Cell Vehicles Come to ITS-Davis for Research

UC Davis Chancellor Larry Vanderhoef took delivery on December 2 of one of the two first market-ready fuel cell vehicles (FCV) in the United States. Toyota Motor Sales COO Jim Press handed over the car's keys to the UC Davis Chancellor in Irvine during the morning ceremony. ITS-Davis will lease the



UC Davis Chancellor Larry Vanderhoef with the Toyota FCHV in the background

car to support its research programs. Later in the day Honda released its first FCV to the City of Los Angeles.

ITS-Davis will use this car, and two more to follow, to conduct the first public evaluation of American consumer reaction to the new automotive technology. "This program builds on over a decade of research at ITS-Davis on alternative fuels and advanced technology vehicles," said ITS-Davis Director Dan Sperling. "The Institute is delighted to be one of the lead California institutions

getting these cars on first day that FCVs arrived in the U.S."

UC Davis and its sister campus, UC Irvine, will share six Toyota fuel cell vehicles and support of more than \$4 million over the next 3 years to fund associated research. Toyota has asked the University of California to help the automaker establish a fuel cell vehicle "community" in the state. The community would link academic researchers, consumers, manufacturers and public agencies.

The Toyota program is also part of a larger "Transportation and the Hydrogen Economy: Pathways and Strategies" program, which is outlined in the next e-news story, below. Under the director of ITS-Davis researcher Ken Kurani and his colleagues, the Institute will use its fuel cell-powered Toyotas to study:

- Consumer attitudes toward hydrogen fuel cell vehicles;
- Use of hydrogen fueling infrastructure;
- Full lifecycle costs of FCVs.

Kurani, with fellow ITS-Davis researchers Marshall Miller and Tom Turrentine, will lead efforts to identify the most promising early markets for FCVs, lead outreach efforts to educate communities about hydrogen and FCVs, and recommend designs for consumer-friendly hydrogen refueling stations. Mark Delucchi will head the lifecycle costs analysis.



ITS-Davis Researcher Ken Kurani (right) talks to reporters at the news conference



Eggert joins ITS-Davis for the H2 Pathway program

## HYDROGEN - FUEL OF THE FUTURE? ITS-Davis Launches H2 Research

ITS-Davis is launching a four-year, multi-million dollar "Transportation and the Hydrogen Economy: Pathways and Strategies" initiative in partnership with research centers around the world and with sponsorship from major automotive and energy companies, associated technology companies, and key government agencies.

The primary focus will be the manufacture, storage, and distribution of hydrogen for use in fuel cell vehicles, but non-FCV, stationary, and off-road vehicle markets and applications will also be fully considered to the extent they might influence hydrogen infrastructure investments.

"We're setting our sights on the near and medium term, because overcoming these more immediate challenges will be critical to laying the foundation for a successful hydrogen-based economy of the future," explains ITS-Davis Director Dan Sperling.

The program is rapidly moving forward. Anthony Eggert is joining the program this month as its associate research director working with Dan Sperling. Eggert earned his Master's from UC Davis, participated in ITS-Davis's FCV Modeling Program during his time at the Institute, and has been managing Ford's California Fuel Cell Partnership office.

Attending the first meeting of the program's executive committee, October 30, were Tom Gross (U.S. Department of Energy), Alan Lloyd (California Air Resources Board), Jim Boyd (California Energy Commission), and representatives from the South Coast Air Quality Management District and the Federal Transit Administration. Toyota, ExxonMobil, and Shell Hydrogen (US) are the first

industry sponsors to pledge support.

The initiative has two primary goals: research and public process. The research goal is to develop a broad set of transparent facts and build stakeholder consensus on these facts leading to a common basis on hydrogen pathways. The research program will be conducted in five concurrent tracks:

1. Scenarios, Pathways and Energy Systems Modeling
2. Design and Evaluation of Near-Term Demonstration and Pilot Projects
3. Fuel Cell and Hydrogen Market Analyses and Forecasts
4. Design and Analysis of Hydrogen Fuel Station and Distribution Infrastructure
5. Environmental, Energy and Cost Analyses

The public process goal is to engage sponsors and interested parties in developing vehicle and fuel-infrastructure roadmaps for the U.S., and disseminating research findings.

One of the first projects of the new initiative is a hydrogen fueling infrastructure study. Funded by the California Energy Commission, the project, led by ITS-Davis researchers Marshall Miller and Andrew Burke, will attempt to understand the steps necessary to design a safe, compliant hydrogen fueling station. Other ongoing UC Davis projects that are part of this new initiative include the fuel cell APU project, funded by U.S. Department of Energy, California Air Resources Board, and South Coast Air Quality Management District, among others; the hydrogen bus technology program, funded by Federal Transit Administration, Air Products, and Caltrans; and the fuel cell vehicle demonstration with Toyota.

### **RESPONDING TO REGULATION: Automaker and Consumer Response to New Greenhouse Gas Emission Regulations in California**

California made international headlines in 2002 when it passed groundbreaking legislation, AB 1493 (Pavley), which requires the California Air Resources Board to propose a set of technology-based rules that would reduce greenhouse gas emissions from light-duty vehicles. Challenged to anticipate the impact of the pending regulation, CARB sought help from ITS-Davis. The agency seeks to identify how automakers will likely respond to the regulation by altering the attributes and mix of their vehicles, and how consumers will likely respond to the new vehicle offerings. The project, "Analysis of Auto Industry and Consumer Response to Regulations and Technological Change in Support of AB 1493 Rulemaking" will assess and analyze existing literature, data, and other sources of industry information, including documentation of response to other regulations between 1978 and 2002. Researchers also will develop a quantitative model to forecast consumer response.



Gov. Gray Davis signs AB 1493 into law

The study will specifically address both supply and demand side behaviors, and their interactions, and will provide the tools and initial insight needed to analyze the economic implications and greenhouse gas impacts of rules resulting from AB 1493. The following faculty will work on this project: Dan Sperling, David Bunch, Andrew Burke, Ryuichi Kitamura, Ken Kurani, Tom Turrentine. Participating students include Ethan Abeles and Belinda Chen.

### **INNOVATIVE MOBILITY: New Program Launched Through UC PATH**

University of California Partners for Advanced Transit and Highways (UC PATH) has launched a new program that conducts research into innovative mobility services and technologies that could improve transportation options while reducing negative societal impacts of transportation. Innovative Mobility Research (IMR) is hosted by the Center for Commercialization of ITS Technology (CCIT). Susan Shaheen, Honda Distinguished Scholar and ITS-Davis affiliated researcher is the program manager. The IMR will affiliate closely with the New Mobility Center at ITS-Davis. For more information, visit the Innovative Mobility Research website: [www.innovativemobility.org](http://www.innovativemobility.org)



New students, fall 2002

### WELCOME NEW STUDENTS

ITS-Davis welcomed a sizeable class of students this fall. Fourteen new students from a variety of academic, research and professional backgrounds entered the Transportation Technology and Policy Program, bringing the total TTP enrollment to 33. More than 70 graduate students, including those in TTP and affiliated academic departments, are now directly engaged in transportation studies at UC Davis.

As the 2002-2003 academic year gets underway, ITS-Davis welcomes three new faculty members whose transportation research in affiliated departments broadens the academic offerings of the campus and enhances the Institute's multidisciplinary approach to research and education.

Here are some quotes by our students:

*"I came to UC Davis from the auto industry because I want to create environmentally and socially sustainable transportation options. ITS's Center for New Mobility appealed to me since it offers the opportunity to do research in this field."* -Emily Winston, New student, fall 2002 (previously with General Motors)

*"ITS-Davis and the TTP program appealed to my combined interests in transportation, public policy, economics, and the environment, and offered the opportunity to address real-world problems within a supportive, yet rigorous, academic atmosphere."* -Belinda Chen, New Student, Fall 2002 (from Brown University)



It's not all work; TTP students find time to play on a flag football team



Sitting room only. About 100 people attended Dr. Ballard's talk

### HYDROGEN ECONOMY IS INEVITABLE: Geoffrey Ballard Speaks on Campus

Dr. Geoffrey E.H. Ballard, founder of Ballard Power Systems, general manager of General Hydrogen, and newly named chairman of the ITS-Davis Board of Advisors told a packed crowd of students, faculty and reporters on November 8 that fuel cells will revolutionize transportation and the way we store and use electricity.

Ballard, whom *Scientific American* this month named a visionary and its Businessman of the Year, and *Time* magazine in 1999 called a Hero for the Planet, told his audience of more than 100 that if just 4 percent of the cars on California's roads today ran on fuel cells, they could generate electricity equal to the output of all the state's power plants.

Ballard acknowledged that cost and infrastructure are the two main barriers to full-scale commercialization, but he added that UC Davis is playing a pivotal role in research and development to overcome the hurdles.

ITS-Davis, the Cal Aggie Engineering Alumni Association, and the College of Engineering co-sponsored Ballard's talk.

### ENGINEERING FOR THE FUTURE: ITE Chapter Forms on Campus

Approximately 30 graduate and undergraduate students attended the inaugural meeting of the UC Davis student chapter of the Institute of Transportation Engineers (ITE) on October 29. Early this



Dr. Ballard speaks with The Sacramento Bee's Matt Barrows



Students enjoy pizza at the inaugural meeting of the UC Davis student chapter of ITE

month, the chapter will elect a president.

ITE is a professional, educational and scientific association for traffic engineers, transportation planners and other professionals involved in planning, designing, implementing, operating and maintaining surface transportation systems worldwide. The organization provides opportunities for information exchange, participation and networking through its 70 local and regional chapters and more than 90 student

chapters.

Bob Grandy, a transportation engineering consultant who lives in Davis and is past president of the Northern California Section of ITE, initiated the first meeting. "One of ITE's main priorities over the past few years has been to get more students involved by establishing more student chapters across the nation," he told e-news. He credited UC Davis professors Susan Handy and Michael Zhang for getting the chapter off the ground. Handy and Zhang will be faculty co-advisors of the student chapter.

Handy, an associate professor of Environmental Science and Policy and an ITS-Davis faculty affiliate, praised the many potential benefits of involvement for students, including guest speakers, field trips, scholarships, networking, and ITE magazine.

"I've been impressed with ITE's work on issues like traffic calming and street design. The organization is promoting important changes to the traditional field of transportation engineering," Handy said.

### **KEEPING A HIGH PROFILE: UC Davis Research and Education Activities Highlighted at Electric Transportation Industry Conference**



### **THE EVAA Electric Transportation Industry CONFERENCE**

| Battery | Hybrid | Fuel Cell |

UC Davis will once again be well represented at the annual Electric Transportation Industry Conference. This year's conference is December 11-13 in Florida.

ITS-Davis Director Dan Sperling will moderate a panel on University Programs – Finding Answers on Campuses Worldwide. He also will give a presentation on the Technology Improvements Needed to Meet FreedomCAR Objectives panel.

UC Davis Mechanical and Aeronautical Engineering Professor Andy Frank will lead a pre-conference workshop on the Societal and Industrial Benefits of Plug-In Hybrid Cars, Trucks and Buses on December 10. The workshop is one of three high-profile pre-conference workshops; the other two focus on electric and hybrid buses, and on hydrogen infrastructure. Dr. Frank's daylong session features academic, technology and business presentations, as well as dialogue sessions on studies and marketing surveys to determine the cost, benefits and feasibility of grid-connected hybrid vehicles. Plug-in hybrids can play a significant role in satisfying government requirements for zero emissions, and lower greenhouse gases over the next 20 years, Frank says.

Dr. Frank's seminar features a keynote address by Robert Stempel, chairman and CEO of Texaco Ovonic Battery Systems and the chairman of Energy Conversion Devices. Stempel will address the worldwide market potential for plug-in HEVs, the history of battery dominant vehicle development, and the role of the plug-in HEV in a sustainable transportation future.

The UC Davis Hybrid Electric Vehicle Design Center, which Dr. Frank directs, will showcase its operational automatic vehicle featuring advanced transmissions and computer control system to demonstrate the ZEV capability, energy economy, simplicity, practicality and manufacturability of plug-in HEVs.

### **FUTURETRUCK 2002 Results: Team Fate Takes Third Overall**

Team Fate, the UC Davis FutureTruck team, captured a third place overall victory in this year's national FutureTruck Competition.

In addition, the Engineering students from UC Davis won first place in a number of individual categories: Best Technical Report, Best Use of Renewable Fuels, Best Use of Advanced Technology, Best Telematics, and Best Dynamic Consumer Acceptance.

Fifteen university teams from across the country competed in this year's contest to increase the fuel economy, reduce emissions, and maintain the performance of a Ford Explorer. Last year Team Fate walked away with a first place victory with their hybrid electric Chevy Suburban, named Sequoia.

Under the direction of Prof. Andy Frank, the Davis team built a compact, lightweight parallel charge-depletion hybrid drivetrain. A so-called plug-in hybrid, this year's vehicle, Yosemite, uses nickel-metal hydride batteries that provide a 60-mile all electric range.

"The vehicle runs most efficiently under electric power, but is designed to give the driver control over how to drive the vehicle. Whether pure EV, pure gasoline, or some combination of the two, it's up to the driver to decide," says Frank.

The truck also integrates a Java-based telematics service framework with built-in graphical, voice, and web browser user interfaces that support additional consumer services such as video/audio-on-demand or intelligent traffic-aware vehicle navigation.



In addition to its Bibendum entry, Coulomb was the UC Davis entry for the 1998-99 FutureCar Challenge sponsored by U.S. DOE

### UC DAVIS HYBRID WOWS EUROPE: Plug-in Hybrid a Winner in Michelin Bibendum

UC Davis's plug-in hybrid car, "Coulomb," built on a Mercury Sable platform, performed flawlessly in the annual Michelin Challenge Bibendum in Europe in late September. The car achieved 3.5 liters/100 km fuel economy sustaining the charge - the equivalent of about 65 mpg on the course, from Hockenheim, Germany to Paris, France. The car received two "A" ratings - one in low fuel consumption and one in low CO2 emissions.

UC Davis was the only university represented among 70 participants including Ford, DaimlerChrysler and Honda. Graduate students Eric Chattot, Thomas Dreumont and Charnjiv Bangar from the Hybrid Electric Vehicle laboratory drove the car.

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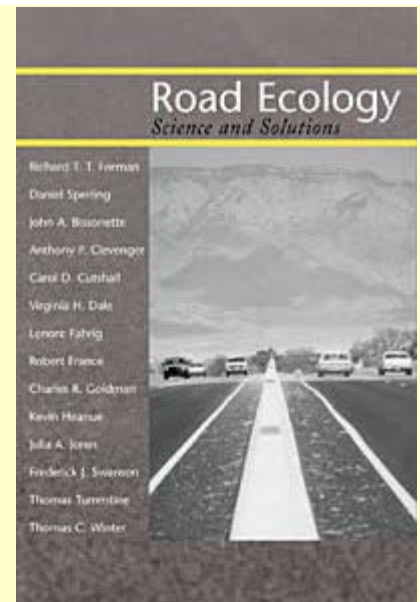
## Research Results

### Transportation Publications from UC Davis: Hot Off the Presses

#### This Issue's Highlights:

**Road Ecology: Science and Solutions**, Richard T. Forman, Daniel Sperling, et al., Island Press Publishers, November 2002, pp. 424. Publication No. UCD-ITS-RP-02-31.

This just-published book features research by 14 contributors, including ITS-Davis researchers Dan Sperling, Tom Turrentine and Ken Kurani. Richard T. Forman of Harvard University was the lead author and co-editor with ITS's Sperling. The book forms the basis of an integrative science of road systems ecology, which seeks to link transportation research with the study of ecological impacts of roads. Both areas of research are fragmented and sparse. The book lays the foundation for further research and the development of principles and practices for road construction and maintenance. This book project brought together hydrologists, ecologists and road experts from around North America for a series of workshops. The Federal Highway Administration and California Department of Transportation contributed funds to the project.



**The Future of Hybrid-Electric ICE Vehicles and Fuels Implications**, Burke, A.F., Abeles, E., Zhou, L., Sperling, D., Brodrick, C., Publication No. UCD-ITS-RR-02-09.

ITS-Davis researchers have determined that a relatively small degree of hybridization could improve fuel economy without sacrificing performance, across all vehicle classes. Although the largest fuel economy gains came in vehicles that were fully hybridized, the fuel economy improvement in the so-called “mild” hybrid vehicles were not much smaller than those for the full hybrids, and could be attained at much lower cost.

### ***New Publications***

**Review of the University of Florida Fuel Cell Bus Research, Demonstration and Education Program**, Betts, D., Simmons, T., Erickson, P., Roan, V., 8th International Symposium on Renewable Energy Education, August 2002, pp. 7. Publication No. UCD-ITS-RP-02-33.

**Interior and Exterior Noise Emitted by a Fuel Cell Transit Bus**, Matheny, M., Erickson, P., Niezrecki, C., Roan, V., Journal of Sound and Vibration, April 2002, pp. 7. Publication No. UCD-ITS-RP-02-32.

**Bridging the Last Mile: A Study of the Behavioral, Institutional, and Economic Potential of the Segway Human Transporter**, Shaheen, S., Finson, R., Transportation Research Board, January 2003, pp. 13. Publication No. UCD-ITS-RP-02-30.

**Examining Intelligent Transportation Technology Elements and Operational Methodologies for Shared-Use Vehicle Systems**, Barth, M., Todd, M., Shaheen, S., Transportation Research Board, 79th Annual Meeting, pp. 20. Publication No. UCD-ITS-RP-02-29.

**The Developing World's Motorization Challenge**, Sperling, D., Clausen, E., Issues in Science and Technology, pp. 7. Publication No. UCD-ITS-RP-02-28.

**U.S Shared-Use Vehicle Survey Findings: Opportunities and Obstacles for Carsharing & Station Car Growth**, Shaheen, S., Meyn, M., Wipiewski, K., Transportation Research Board 2003 Preprint, August 2002, pp. 18. Publication No. UCD-ITS-RP-02-27.

**The Impact of Residential Neighborhood Type on Travel Behavior: A Structural Equations Modeling Approach**, Bagley, M., Mokhtarian, P., The Annals of Regional Science, pp. 279-297. Publication No. UCD-ITS-RP-02-26.

**Shared-Use Vehicle Systems: A Framework for Classifying Carsharing, Station Cars, and Combined Approaches**, Barth, M., Shaheen, S., Transportation Research Board, No. 02-3854, pp. 19. Publication No. UCD-ITS-RP-02-25.

**Transportation in Developing Countries: Greenhouse Gas Scenarios for Chile**, O’Ryan, R., Sperling, D., Delucchi, M., Turrentine, T., Pew Center on Global Climate Change, August 2002, pp. 56. Publication No. UCD-ITS-RP-02-24.

**How We Can Have Safe, Convenient, Clean, Affordable, Pleasant Transportation Without Making People Drive Less or Give Up Suburban Living**, Delucchi, M., Kurani, K., Nesbitt, K., Turrentine, T., ITS-Davis, September 2002, pp. 59. Publication No. UCD-ITS-RR-02-08.

**Life Cycle Assessment of Fuel Cell Vehicles - Dealing with Uncertainties**, Contadini, J., ITS-Davis, May 2002, pp. 338. Publication No. UCD-ITS-RR-02-07.

**The Relationship of Vehicle Type Choice to Personality, Lifestyle, Attitudinal, and Demographic Variables**, Choo, S.,

Mokhtarian, P., ITS-Davis, October 2002, pp. 179. Publication No. UCD-ITS-RR-02-06.

**Impacts of Home-Based Telecommuting on Vehicle-Miles Traveled: A Nationwide Time Series Analysis**, Choo, S., Mokhtarian, P., Salomon, I., Prepared for the California Energy Commission, October 2002, pp. 84. Publication No. UCD-ITS-RR-02-05.

**From Import Substitution to WTO Accession: Government Intervention in the Chinese Automotive Market**, Feenstra, R., Sperling, D., Branstetter, L., Harwit, E., Hai, W., ITS-Davis, pp. 33. Publication No. UCD-ITS-RR-02-03.

*Publications can be ordered by fax, e-mail or mail. Some are now available online.*

*ITS-Davis has recently completed an extensive update of its publications list and is in process of getting all research reports in downloadable pdf format online.*

Ordering information: <http://www.its.ucdavis.edu/publications>

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One Shields Avenue, Davis, CA 95616-8762

For information contact: ITS-Davis Event and Publications Coordinator Lauren Palmer at 530-752-4909, or [lapalmer@ucdavis.edu](mailto:lapalmer@ucdavis.edu).

A List of Fuel Cell Vehicle Modeling Program Papers is located at [http://fcv.ucdavis.edu/fcvprog/FCVMP\\_Publications\\_rev1.html](http://fcv.ucdavis.edu/fcvprog/FCVMP_Publications_rev1.html)

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## ITS-Davis and Campus Highlights

### ITS-DAVIS PEOPLE IN THE NEWS

**Michael Zhang**, associate professor, Civil and Environmental Engineering, will become Associate Editor of Transportation Research B beginning in 2003.

Scientific American has named **Geoffrey Ballard**, chairman of General Hydrogen and recently named chairman of the ITS-Davis Board of Advisors, the magazine's Business Leader of the Year. The magazine launched its first annual celebration of visionaries in its December issue. The report celebrates leaders in research, industry and politics, whose recent accomplishments point toward a brighter technological future for everyone. Through their many accomplishments in 2001-2002, they have demonstrated clear, progressive views of what our technological future could be, as well as the leadership, knowledge and expertise essential to realizing those visions, the magazine wrote in an advance release. The magazine also recognized California Assembly Member Fran Pavley, author of AB 1493, which directs the state to develop regulations to reduce carbon dioxide emissions from motor vehicles.

**Reza Mahdavi**, who received his Ph.D. in Economics in 1988, has received special recognition from the Cal Aggie Alumni Association for his success in establishing the Iranian Scholarship Endowment Fund, which has raised more than \$125,000 for UC Davis students of Iranian ancestry. Mahdavi is a pollution research specialist with the California Air Resources Board and is working closely with ITS-Davis on greenhouse gas research.

### FCVMP PRESENTERS AT ANNUAL FCV CONFERENCE

Researchers in the Fuel Cell Vehicle Modeling Program lead a short course and presented two papers at the annual Fuel Cell Conference in mid-November in Palm Springs, Calif. The conference, coordinated by a committee of experts representing U.S., European and Japanese government, business and nonprofit entities, draws experts from around the world each year.

The Fuel Cell Vehicle Center's Bob Moore, Sitaram Ramaswamy, and Joshua Cunningham, led the one-day course designed to explore the fundamentals of how fuel cells work, their inherent benefits, and the various commercial opportunities under development, in conjunction with UC Irvine's National Fuel Cell Research Center.



In addition, the UC Davis team presented the following papers:

1. **DMFC Results and Characterization for a 10kW(net) System, with 100C Stack Operation**, Sitaram Ramaswamy, Joshua Cunningham, Robert Moore, Claudia Diniz, P. Badrinarayanan;
2. **Evaluating Performance and Efficiency of Fuel Cell Vehicles: Pitfalls and Promises**, Robert Moore, Sitaram Ramaswamy, Joshua Cunningham, Paravatsu Badrinarayanan, Claudia Villa-Diniz.



Dean Enrique Lavernia (right) and Dan Sperling at CaFCP

### UC DAVIS RECRUITING: Academic and Research Faculty Positions Approved for Energy and Transportation Programs

The university has approved three new academic faculty positions for the coming year. The positions and the departments that will host them include: FCV engineering (Chemical Engineering and Materials Science); transportation infrastructure information systems and high-performance computing (Civil and Environmental Engineering); energy/fuel cell policy analysis (Environmental Science and Policy).

ITS-Davis expects to add two or more distinguished research faculty, as well, says Director Dan Sperling. "With this expanding core faculty, we continue to redefine transportation education and research - linking technology, policy, research, and practice - by focusing on key societal issues, and doing so in a robust and responsible fashion."

Full information for each position will be posted as it becomes available. See the links under "What's New" on the ITS-Davis home page.

### BOARD OF ADVISORS ANNUAL MEETING

ITS-Davis faculty, staff and campus officials briefed the Board of Advisors on the Institute's educational programs and current initiatives, and discussed the Institute's plans for growth at the board's annual meeting November 9. Vice Chancellor for Research Barry Klein briefed the board on campus developments affecting the Institute, and, together with Rosalie Vanderhoef, wife of UC Davis Chancellor Larry N. Vanderhoef, hosted a reception and dinner.

Members attending were: Board of Advisors Chairman Geoffrey Ballard, General Hydrogen; James Boyd, California Energy Commission; Norm Bryan, retired PG&E; Jim DeStefano, former Sun Microsystems; Tony Finizza, retired ARCO; Rutger Friberg, Volvo Technology Transfer Corporation; Michael Gage, Trust for Public Land; Wendy James, Better World Group; Larry Johnson, Argonne National Lab; Hani Mahmassani, University of Maryland; Neil Otto, former Ballard Automotive; Eldon Priestley, ExxonMobil; Howard Ris, Union of Concerned Scientists; Bob Sawyer, emeritus, UC Berkeley; Joe Schofer, Northwestern University; Joe Sussman, MIT; and Hiroyuki Watanabe, Toyota.



ITS-Davis Board of Advisors at the Mondavi Center

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**EXTRA! READ ALL ABOUT IT: ITS-Davis and Associated UC Colleagues in the News**

*Dan Sperling in The Sacramento Bee*, November 27, in a feature about the Institute's hydrogen and fuel cell research program and the Toyota fuel cell vehicle lease.

UC Davis noted in Detroit News, Bloomberg News, and Reuters wire service stories, November 19, on Toyota's plans to lease its first fuel cell vehicles to UC Davis and UC Irvine. Also in Atlanta Constitution and numerous other national papers November 20.

Dan Sperling, on MSNBC, November 13, in an article on the new national hydrogen energy roadmap, part of the FreedomCAR Initiative.

Susan Shaheen in Los Angeles Times, November 9, in an article on the launch of carsharing in the region.

Dan Sperling in The Washington Times, November 6, in an article featuring Road Ecology: Science and Solutions, the new book published by Island Press in November that he co-authored.

Dan Sperling, in The Press-Enterprise, November 2, in an article on the local transit agency's test of a heavy-duty hybrid-electric transit bus.

Pat Mokhtarian, in North County Times, October 6, in a story on telecommuting trends.

ITS-Davis was cited as a resource in an Associated Press article, October 6, on growing traffic congestion in California.

Dan Sperling on National Public Radio's Living on Earth, September 27, on the future of automobiles, in the face of automaker announcements about their fuel cell prototype cars.