



e-news



ITS-Davis e-news is the bimonthly electronic newsletter of the UC Davis Institute of Transportation Studies for affiliates, alumni and friends. ITS-Davis e-news reports information directly from ITS-Davis and from affiliated academic departments that conduct transportation-related research and education. For previous issues, see the [e-news archives](#)

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Research Results

TO TRB WE GO: ITS-Davis Keeps High Profile at Annual Meeting

In recent years, ITS-Davis faculty and researchers have demonstrated the breadth of research underway in Davis while attending the annual Transportation Research Board Conference. Once again, a team of UC Davis experts will travel to Washington to share the latest fruits of their labor at the 80th annual meeting January 7-11.

Listed below are some of the papers and panels in which ITS-Davis representatives are participating, as well as a selection of other ITS-Davis events at TRB.

January 7

Dan Sperling will present a paper at the Symposium on China, a parallel event to TRB. The topic is

"Motorization in Shanghai and Environmental Implications."

January 8

- **Developing Nations' Progress on Sustainable Transportation Issues**

Author: D. Sperling

Session: Transportation Sustainability Around the World: International Roundtable, Part 2

Abstract: ITS-Davis researchers are collaborating with leading researchers from four countries to study strategies for reducing greenhouse gas emissions from the transportation sectors of developing countries. The product of this work is five reports: case studies of Shanghai, Delhi, Santiago, and South Africa, and an overview report. Davis researchers traveled to each of the study locations to interview local leaders and experts, gain access to locally available data, and work directly with local co-authors in writing each report. The reports analyze travel behavior, public investments, regulations, and policies, and develop two scenarios for each region. Early findings indicate that in most developing nations, greenhouse gases associated with the transport sector will be at least doubling in the next 20 years, even with the most conservative projections and most interventionist governments. At the upper end, with "business as usual," fourfold increases are plausible. While the increases are very large, the gap between low and high scenarios is also huge, implying that effective policies and investments can have a very large impact.

In addition, Sperling is chairing a session on "The Automobile Industry and Climate Change" on January 8.

- **A Methodology for the Disaggregate, Multidimensional Measurement of Residential Neighborhood Type**

Authors: P. Mokhtarian, M. Bagley, R Kitamura

Session: Committee on Transportation and Land Development

Abstract: Binary designation of a residential neighborhood as either traditional or suburban is a distortion of reality, since a location may have some characteristics of both types and since residents in different parts of the neighborhood may perceive its character differently. This paper presents and applies a methodology for assessing neighborhood type that results in a measure that is continuous rather than binary, disaggregate rather than aggregate, and potentially multidimensional. Specifically, 18 variables identified by the literature as distinguishing traditional and suburban locations are measured for 852 residents of five San Francisco area neighborhoods. These data are factor-analyzed to develop scales on which each individual has a person-specific score. Although we expected a single "traditionalness" dimension to result, instead we found two factors: traditional and suburban. Study neighborhoods could and did score highly on both dimensions, and considerable individual variation within neighborhood was observed. By more accurately capturing the complexity in classifying a neighborhood, and the heterogeneity of individual perception within neighborhood, use of this methodology to measure neighborhood type is expected to improve models involving residential location as an endogenous or exogenous variable.

- **A Car-Following Theory for Multiphase Vehicular Traffic Flow**

Authors: H.M. Zhang and T. Kim

Session: Microscopic Traffic Flow Models

Abstract: We present in this paper a new car-following theory that can reproduce both the so-called capacity drop and traffic hysteresis, two prominent features of multiphase vehicular traffic flow. This is achieved through the introduction of a single variable, driver response time, that depends on both vehicle spacing and traffic phase. By specifying different functional forms of response time, one can obtain not only brand new theories but also some of the well-known old car-following theories, which is demonstrated in this paper through both theoretical analyses and numerical simulation.

- **Potential Benefits of Utilizing Fuel Cell Auxiliary Power Units in Lieu of Heavy-Duty Truck Engine Idling**

Authors: C.J. Brodrick, T. Lipman, M. Farshchi, H. Dwyer, S. W. Gouse (Freightliner LLC), B. Harris, F. King (EPA)

Session: Evaluation of Alt Fuel Vehicle Technologies and their Marketability

Abstract: Truck manufacturers and vehicle component manufacturers are exploring using fuel cell auxiliary power units (APUs) in lieu of main engine idling. While fuel cell powertrains continue to face significant technical and economic barriers, the truck auxiliary power application may offer a viable near-term market for small (1 - 5 kW) fuel cells. ITS-Davis has conducted a study to quantify the potential benefits of utilizing APUs in lieu of truck idling.

ITS-Davis researchers estimated the potential reductions of (1) air pollutants and greenhouse gases and (2) heavy truck fuel and lubricant consumption through elimination of truck idling. For new tractors, idling is estimated to contribute 0.2 to 0.6 metric tons of nitrogen oxide emissions and 8 to 26 tons of carbon dioxide per vehicle per year. Thus, depending upon the emissions from fuel cell system production, fuel cell APUs in lieu of idling could substantially reduce pollution emissions and greenhouse gas emissions.

The extent of cost saving that an APU could achieve depends upon the cost of diesel engine idling, the market cost of the APU, the APU fuel-type, and quantity of APU fuel consumed. Conservative estimates are that diesel engine idling uses 1,818 gallons of fuel per year for an average late model truck that idles 6 hours per day, 303 days per year. The fuel cost per year is \$3,127 (at a cost of \$1.72 per gallon) in addition to preventative maintenance and engine overhaul costs. Potential costs of the fuel cell APU systems are speculative due to the early commercialization stage of the technologies and uncertainty with regard to architectures and production volumes. This paper concludes with a discussion of appropriate fuel cell architectures for truck auxiliary power applications and the cost considerations associated with each.

January 9

- **E-Commerce Impacts on Total Vehicle Travel: Potential Impacts and Research Needs**

Author: P. Mokhtarian

Session: Implications of E-Commerce for Transportation: Passenger Travel

- **Rethinking Public-Private R&D Partnerships: Lessons from PNGV**

Author: D. Sperling

Session: CAFE Rising? How do we Reduce Oil Use This Time?

Abstract: Government-industry R&D partnerships can play an important role in advancing the public interest. A widely cited example is the Partnership for a New Generation of Vehicles (PNGV). It was launched in 1993 by the Clinton Administration and three US automakers, with the goal of advancing the development of energy efficient vehicles. It has come to be seen as a model, and in many ways it is: it is proceeding according to schedule; it increased the profile of advanced technology opportunities; and it led to better working relationships between the federal government and automakers. It also indirectly led to technology advancement -- by inspiring more aggressive investments by European and Japanese automakers that, in turn, through a boomerang effect, inspired US automakers to do likewise. In summary, it has been a fruitful partnership, in the sense that both sets of partners are pleased. But has it served the public interest? Has it led to the best investment of government R&D funds and has it accelerated the commercialization of socially beneficial technologies? The answer to this latter question is still uncertain.

- **Uncertain Socioeconomic Projections Used in Travel and Emissions Models: Could Plausible Errors Result in Air Quality Nonconformity?**

Authors: C.J. Rodier, R.A. Johnston

Session: Passenger Travel Demand Forecasting

Abstract: What is the probability that cities in the US that currently experience unhealthy air quality will be able to clean up their air to meet national standards? ITS-researchers examine the uncertainty in key factors that may provide a real challenge to meeting national air quality standards in the Sacramento region.

In recent years, several regions (Charlotte, Atlanta, and New Jersey) have not met their air quality conformity

tests, and it is not uncommon for regions to meet their tests by a very small margin, as was the case for Sacramento in 1999. In this study, we conduct sensitivity analyses of plausible errors in population, employment, fuel price, and income projections using the Sacramento region's travel demand and emissions models for the transportation plan (2005 and 2015 time horizons).

The results of the analyses indicate that plausible error ranges for household income and fuel prices are not a significant source of uncertainty with respect to the region's travel and emissions projections. However, plausible errors in population and employment projections (within approximately one standard deviation) may result in the region's transportation plan not meeting the conformity test for NOx in the year 2005 (i.e., an approximately 32% probability). This outcome is also possible in the year 2015 but less likely (within approximately two standard deviations or a 5% probability).

- **ITS-Davis Annual Reception**

ITS-Davis will host a reception for friends and alumni at the Omni Shoreham Hotel, 2500 Calvert Street. The reception, which begins at 8:00 p.m., will be in the Presidential Suite.

January 10

- **Commuter-Based Carsharing: Market Niche Potential**

Author: S. Shaheen

Session: Carsharing

Abstract: In the US, the automobile accounts for over 95 percent of all person miles traveled, while transit accounts for less than 3 percent of all trips. Between the private auto and traditional transit, niche markets exist for other transportation services, such as airport and transit feeder shuttles and carsharing. Commuter-based carsharing, in which individuals share a fleet of vehicles linked to transit, could potentially fill and expand one such niche; complement existing services, particularly transit and feeder shuttles; and develop into a viable transportation alternative.

This paper includes a brief overview of transit feeder services, particularly in Northern California. Next, it describes the CarLink field test (a commuter-based carsharing model developed and tested in the San Francisco Bay Area in 1999) and highlights key behavioral findings. The author concludes with recommendations for strengthening the viability of this innovative service, based largely on experience from the CarLink field test. Empirical evidence suggests that CarLink could be sustainable if there is strong cooperation with local businesses and transit; parking limitations and congestion are prevalent; system feasibility is demonstrated; incentives are employed (e.g., preferred parking and transit pass subsidies); higher user fees are generated; and technology and management costs are lowered.

- **Anatomy of Induced Travel Using an Integrated Land Use and Transportation Model in the Sacramento Region**

Authors: C.J. Rodier, J.E. Abraham, R.A. Johnston

Session: Transportation and Land Development

Abstract: Will building new highways provide long term relief from traffic congestion? ITS-researchers apply an advanced integrated land use and transportation model to examine this question in the Sacramento region. New highway projects are typically evaluated with analytical tools that capture a limited number of the behaviors that contribute to induced travel (i.e., the increase in travel that results from a reduction in the cost of travel). If induced travel is not well represented, then the travel and congestion will tend to be underestimated. In this study, the Sacramento MEPLAN model is used to evaluate not only the route and mode choice effects but also the destination and location choice effects of new beltway highways in the region. The results suggest that, at least for this case study, the destination and location effects of the highway projects are significant in both the 20- and 50-year time horizons.

Caroline J. Rodier recently completed her Ph.D. dissertation; the papers she is presenting at TRB comprise a portion of her dissertation research. In the next issue, (February 2001), ITS-Davis e-news will take a closer look

at the significance of this work, and the work of her faculty advisor and research partner, Robert Johnson.

- **Comparisons From the Sacramento Model Testbed**

Authors: J.D. Hunt, R.A. Johnston, J.E. Abraham, C.J. Rodier, G. Garry, S.H. Putman, and T. de la Barra
Session: Travel Models and Accessibility

Abstract: A set of land use and transport interaction models were applied to the Sacramento, Calif. region by various teams of researchers. This paper compares the results of the modeling efforts, focusing on the modeling frameworks and how they were applied influenced the modeling results. A trend scenario was compared to three different policy scenarios, one involving HOV lane construction, one adding beltway construction as well as HOV construction, and a third involving light rail construction and limited pricing of automobile use. The results show how price information is important, aggregate models are limited, equilibrium models are limited, calibration is important, and uncertainty seems inevitable.

BIG YELLOW (BLACK) TAXI: ITS-Davis Teams with Imperial College on London Fuel Cell Taxi Demonstration



The Unique London Taxi

ITS-Davis researchers planned and are helping to organize and design a demonstration of fuel cell taxis in London. The effort addresses the industry's need to demonstrate fuel cell vehicle viability, performance, safety, and infrastructure technologies, and test public reaction to vehicle attributes and refueling technology as a step toward commercialization.

ITS-Davis researchers conducted feasibility studies to determine locations other than California - home of the existing demonstration program through the California Fuel Cell Partnership - that could appropriately demonstrate the new technology. The study concluded that London was an excellent

site. The W. Alton Jones Foundation funded the initial feasibility research through the UC Davis Fuel Cell Vehicle Center.

As the project enters Phase II, Imperial College, London is taking over project organization and management. ITS-Davis will continue to provide technical assistance and participate in evaluation activities. European and North American fuel cell developers, auto manufacturers, and energy providers will provide continued funding.

The pilot project will likely include three to five typical black London Taxis that have been converted to operate using a fuel cell system and are operated by London taxi drivers. While drivers will receive instruction on refueling, the project is expected to provide insight into some of the issues associated with "public" hydrogen refueling, since the taxi drivers will not be highly trained. Thus, it may represent a significant test of public reactions and perceptions.

Currently, three preliminary studies on London taxi driving cycle and refueling requirements, a vehicle refueling station location/design analysis, and a taxi driver and passenger attitude/willingness-to-pay study are underway, with completion tentatively schedule for next spring. Vehicles could begin operating as soon as mid-year 2002.

PUBLICATIONS FROM ITS-DAVIS: Hot off the Presses

- "Ultracapacitors, Why, How and Where is the Technology," RP-00-17, Burke, Andrew, Journal of Power Sources #91, October 2000, pp. 37-50
- "Urban Transport, Energy and Environment - A Case of Delhi" RR-00-11, Bose, Ranjan, K.S. Nesamani, pp. 58 \$10
- "Greenhouse Gas Emissions in the Transport Sector 2000-2020: Case Study for Chile" RR-00-10, O'Ryan, Raul, T. Turrentine, pp. 136 \$15

- "A ZEV Credit Scheme for Zero-Emission Heavy-Duty Trucks," RR-00-9, Lipman, Timothy E., November 2000, pp. 30 \$5

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One Shields Avenue, Davis, CA 95616-8762

A List of Fuel Cell Vehicle Modeling Program Papers is located at <http://fcv.ucdavis.edu>.

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Education and Research Highlights

WELCOME, NEW STUDENTS: New Graduate Students Enroll

ITS-Davis welcomes its new graduate students this fall, some enrolled in the Transportation Technology and Policy graduate program, and some in traditional academic departments such as Civil and Environmental Engineering, and Economics. New students include:

- Gustavo Collantes (Transportation Technology and Policy) is from Argentina and received his undergraduate degree in Aeronautical Engineering from Universidad Tecnologica Nacional in Buenos Aires. He received his Master's from The Technion in Israel, majoring in Aerospace Engineering. Seeking involvement in the social sides of engineering, he was attracted to transportation science and will be working toward his Ph.D. here at UCD, potentially focusing on the impacts of telecommunications on travel behavior/transportation policy. Gustavo has accumulated many awards, the most notable of which is the Delta Airlines Fellowship. His publications have been in the areas of hydrodynamic instabilities and transonic aerodynamics.
- Peter Hamilton (Transportation Technology and Policy) is from Ithaca, New York and received his undergraduate degree in Engineering from Swarthmore College in Pennsylvania. Pete will be working toward his M.S./Ph.D. here at UCD, specializing in transportation technology, environment, and development. While working at Lockheed Martin Control Systems, he was involved in emissions reducing technology for hybrid electric vehicles. As a result of that work, he has received one patent and has another pending. In addition, he was a 1998 Engineer of the Year finalist with Lockheed Martin.
- Kiettipong (Faa) Jierranaitanakit (Civil and Environmental Engineering) is from Thailand and received his undergraduate degree in Civil Engineering from Chulalongkorn University in Bangkok, Thailand. He obtained his Master's Degree from Vanderbilt University, concentrating on highway economic analysis. He received a full scholarship from the Royal Thai Government to further his studies in transportation engineering. Kiettipong plans to complete his Ph.D. studies in land use planning with a long-term goal to return to Thailand and serve as a civil engineer (transportation planner) in the Planning Bureau, Thailand Department of Highway.
- David Nylander (Economics) is from San Diego, Calif. and received his undergraduate degree in Economics from UC San Diego, graduating magna cum laude. He received the Golden Key National Honors Society Award and High Honors within Economics Department Award while attending UC San Diego. David will be working toward his M.S./Ph.D. here at UCD, concentrating on micro- and macro-economic development principles, in addition to social and environmental conditions to explain economic growth - or lack of it.
- Aaron Rachlin (Transportation Technology and Policy) is from San Francisco and received his undergraduate degree (with honors) in geology from the University of Pennsylvania. He obtained a Master's from the

University of Michigan, a Juris Doctor from West Virginia University College of Law, and earned a place on the WVU Law Review. He will be concentrating his studies in fuel cells and hydrogen technologies while working toward his Ph.D. here at UC Davis.

- Brett Williams (Transportation Technology & Policy PhD student) is from Basalt CO, where he was Rocky Mountain Institute's principal analyst of fuel-cell and alternative-fuel technology and infrastructure. While at RMI, he: helped start up the for-profit Hypercar, Inc. (recently featured on the front page of the *Wall Street Journal*); gave plenary talks at several conferences; co-authored two papers on hydrogen and fuel-cell Hypercars; consulted for automotive, electronics, and energy firms (including the founders of Shell Hydrogen); was a member of the U.S. delegation to the 1999 G8 Environmental Futures Summit; and gave interviews for national periodicals, regional radio, and local TV. Brett received his MPhil from Cambridge University (UK) in Environment & Development with a "First"-equivalent thesis that compared petroleum-based and hydrogen-fuel-cell-based transportation. He received a BA in Physics/Public Policy Analysis (self-designed) from Pomona College (Claremont CA) with a thesis (passed with Distinction) that analyzed a southern California clean-fuels program.

FUTURE SEMINARS AT ITS-DAVIS

Mark your calendars for the Winter 2001 ITS-Davis Seminar Series. The seminars are held Thursdays from noon - 1:00 p.m. in Engineering II, Room 1065. They are free and open to all interested members of the campus community and visitors.

- January 18 - Niel Otto, retired president, Ballard Automotive
- January 25 - Tom Stallard, Yolo County Supervisor
- February 1 - Deborah Salon, ITS-Davis Ph.D. student
- February 15 - Bob Williams, IGERT Distinguished Speaker
- March 8 - Ken Kurani, ITS-Davis Research Engineer

A TASTE OF TRANSPORTATION: Students Attend Annual Symposium, Network With Consulting and Industry Executives, Government Officials

Three UC Davis undergraduates attended the California Transportation Foundation Symposium, November 16 and 17, at the Asilomar Conference Center in Monterey. The annual symposium is advertised as bringing together "the best and brightest [undergraduate] transportation students with the highest level professionals in the field" to interact and participate in a relaxed and fun setting.

"We've sent students every year for the past several years and they invariably come back excited about the experience," says Pat Mokhtarian, chair of the Graduate Group in Transportation Technology and Policy. The symposium provides good leadership training, she says, adding that it's an opportunity to expose promising students who may otherwise not have considered advanced studies in transportation.

Student Molly-Anne Meyn, a Community and Regional Development major with an emphasis in policy and planning said the seminar included role-playing and debate to address the politics of the transportation field and how to navigate through political complexities. "The role-playing was entertaining and gave the students a taste of the professional culture in the transportation sector, something you don't get at school," she said. "There was a lot of time to talk one-on-one with the professionals," she said. "We made a lot of good contacts."

This year's attendees were:

- Mark Erickson, Civil Engineering
- William Heung, Civil Engineering
- Molly-Anne Meyn, Community and Regional Development

ITS-Davis and Campus Highlights

HONDA GIFT TO ADVANCE NEW MOBILITY STUDIES AT UC DAVIS

A generous new \$500,000 endowment from the American Honda Motor Company will boost research into sustainable and accessible personal transport by creating the first endowed position for a faculty member or researcher at ITS-Davis. The gift also represents the first major corporate commitment to assist ITS-Davis in launching a Center for New Mobility Studies at the Institute.

The Honda endowment may be used to honor a faculty member with a professorship or an Institute researcher with a distinguished scholar award. The first Honda Distinguished Scholar in Transportation is Susan Shaheen. Shaheen holds a joint appointment as research scientist at the Institute, and as a postdoctoral researcher at the UC system-wide Partners for Advanced Transit and Highways (PATH) program.

"Honda is honored to support the advancement of mobility research that has such tremendous potential to benefit the environment and society," said Koichi Amemiya, President and CEO of American Honda Motor Co., Inc. "UC Davis is one of the preeminent mobility research institutions in the world, and we believe it is ideally positioned to further these objectives."

Shaheen, who received a Ph.D. in Ecology from UC Davis, is recognized for her work on the widely acclaimed CarLink program (See [ITS-Davis e-news #1](#), August 2000) which used computerized systems to enable carsharing in the San Francisco Bay Area. A follow-up program, CarLink II, is due to begin next year.

CarLink is an example of the new mobility concept. Information and communications technologies are vital components of new mobility; they enable innovations such as automated reservation and control.

"New mobility systems will transform our transport systems, link existing modes of transport and create new ones which are easier, less costly and more convenient to use," says ITS-Davis Director Dan Sperling.

UC Davis Chancellor Larry Vanderhoef played a personal role in encouraging the gift and noted that "Gifts of this magnitude launch exciting new initiatives. UC Davis' vital role studying new and sustainable transportation systems will be even more prominent due to American Honda's generosity."

The Center for New Mobility Studies is affiliated with PATH and will be a leading center for the development and study of new mobility. The center will investigate technologies such as smart cards and transponders, shared-use vehicles, small personal vehicles, paratransit, travel planners, e-commerce, and telecommunications. It will analyze market demand, economic and financial viability, and environmental impacts; it will design and evaluate new institutional innovations for financing and managing new systems and technologies; and it will demonstrate and evaluate new technologies and systems.

UC HONORS EARLY-CAREER ACCOMPLISHMENTS: Niemeier one of First Chancellor's Fellows



Professor Niemeier (back, 2nd from right) and research group

ITS-Davis affiliate faculty member Debbie Niemeier, associate professor of civil and environmental engineering, is one of 10 UC Davis faculty members appointed as Chancellor's Fellows, a new program created to honor the achievements of outstanding faculty members early in their careers.

"This honor was designed to recognize the best of our young



American Honda President Amemiya and UCD Chancellor Vanderhoef with Susan Shaheen

faculty members," said Chancellor Larry Vanderhoef. "It is certainly a recognition of what they have accomplished so far in their careers, but, more importantly, it also speaks to their great potential in their fields, and to what they can contribute to the university in the coming years."

Niemeier said she is honored to receive the award. "I am especially grateful for the support and encouragement that I have been given by my department and the campus. There are literally dozens of UCD environmental scientists who would be deserving of such an award. With all the things happening right now, like the Graduate School of the Environment, this is an incredibly exciting place to be."

The 10 faculty members will each receive a one-time award of \$25,000, and will be able to use the title "Chancellor's Fellow" for five years. The Chancellor's Club and the Annual Fund of UC Davis jointly support the award. The nominees, who were evaluated by a faculty committee appointed by the provost, must have achieved tenure within the past three years and have been on the Davis campus for a year prior to last June's deadline for nominations.

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

- Susan Shaheen, in Business Week Online, on carsharing in article on Zipcar program in Boston, November 2000.
- Pat Mokhtarian, in The Sacramento Bee, on consumer attitudes toward walking, November 10, 2000
- Dan Sperling, on CNN, on the cost of converting raw plant material and processing biodiesel fuel, in a story about the City of San Jose, Calif., testing biodiesel in its fleet of 94 garbage trucks.
- Dan Sperling, in a Sacramento Business Journal article on the auto industry's embrace of fuel cells, and the Grand Opening of the California Fuel Cell Partnership, October 27
- Andy Frank and grad student Mark Duvall, in an Associated Press article printed in numerous California newspapers, on the UC Davis FutureTruck, in an article on the California Zero-Emission Vehicle regulation, September 9

MAKING ROOM FOR MORE: New Engineering Building Houses ITS-Davis affiliated faculty

In August 2000, the UC Davis College of Engineering's newest building opened its doors. Currently known as Engineering III, this expansive three-story building is helping the College meet growing demands for improved space and infrastructure. The Civil and Environmental Engineering Department, which is home to six ITS-Davis affiliated faculty members, and Applied Science, are now settling in to the new space.



EUIII, new home for Civil and Environmental Engineering

Engineering III features updated laboratories, computer facilities for faculty researchers and students, efficient and comfortable administrative and faculty office space, and gathering places for students, faculty, and visitors. Located just north of ITS-Davis (in the Academic Surge building), just south of Bainer Hall, a stone's throw from the College's main offices in Engineering II, Engineering III establishes this area of campus as the nexus of engineering teaching and research.

The first event held in "EU-III," as it's called, was an October 29 dinner for ITS-Davis' Board of Advisors and guests. ITS-Davis affiliated faculty members who have made the move include Pat Mokhtarian, Deb Niemeier, Michael Zhang, Michael Kleeman, Dan Chang and new faculty member Tony Wexler.

WELCOME NEW FACULTY AND RESEARCH STAFF

Tony Wexler Splits Time Between Three Departments

Anthony S. Wexler, Ph.D. has joined the UC Davis College of Engineering as a professor of Mechanical and Aeronautical Engineering, Civil and Environmental Engineering, and Land, Air and Water Resources. Wexler investigates the atmospheric transport and transformation of particulate air pollutants related to human health and global warming. He works with Murray Johnston at the University of Delaware to develop new techniques for analyzing



Tony Wexler joins UCD faculty

individual airborne particles on-line. He develops the fundamental mathematics describing chemical and physical transformation of particles in the atmosphere, and the numerical methods necessary to solve these equations in photochemical models. Wexler is also involved in mathematical modeling of particle dispersion and deposition in human airways.

Susan Shaheen Appointed Research Scientist

The university has appointed Susan Shaheen to the position of Research Scientist at ITS-Davis and as the first Honda Distinguished Scholar in Transportation award. Shaheen is also a postdoctoral researcher at the UC system-wide Partners for Advanced Transit and Highways (PATH) program, and received high acclaim for her work in carsharing with the CarLink Program. In addition to her recent accolades, Shaheen received numerous fellowships, scholarships and awards while studying for her Ph.D. at UC Davis, a sampling of which is listed below:

- US Department of Transportation Dwight D. Eisenhower Fellowship, 1998-1999
- University of California Transportation Center Outstanding Student of the Year, 1997
- National Science Foundation Dissertation Award, 1997-1999
- Eno Transportation Foundation Leadership Fellowship, 1996

GROWTH AND OPPORTUNITY: ITS-Davis Board of Advisors Steering Course to Future

With student enrollment projected to grow to an additional 63,000 system-wide, 5,000 on the UC Davis campus alone in the next decade, the future presents challenges and great opportunities for ITS-Davis, UC Davis Provost Robert Grey told members of the ITS-Davis Board of Advisors at its early November meeting.

The Board of Advisors meets annually to learn about research activities, new initiatives and funding developments to assist the Institute with planning future directions. Provost Grey described the university's plans to launch a graduate school of the Environment.



ITS-Davis Board of Advisors, 10/30/00

In addition to the provost's report, advisors heard presentations from Pat Mokhtarian, chair of the Graduate Group in Transportation Technology and Policy, ITS-Davis Director Dan Sperling, and Fuel Cell Vehicle Modeling Program Director Robert Moore.

Mokhtarian spoke of the current nationwide challenge in recruiting new domestic students, even though fellowship funds are plentiful for such students; with unemployment low and the economy strong, many potential students are opting instead to enter the workforce. On the other hand, applications from highly qualified international students continue to be strong, but at UCD few funds are available to help with the \$15,000 annual tuition and fees charged to such students. Advisors offered numerous suggestions, including enhanced partnerships with businesses to encourage employers to make graduate study programs available to employees. Such creative programs would benefit employers, employees and the university alike.

During the afternoon, advisors broke into groups to discuss potential new initiatives:

- Social Marketing
- The City of Davis as a Future Transportation Test Bed
- Coupling Fuels and Particulate Emissions Research

The advisors agreed that ITS-Davis is in a unique position to play a leadership role in future global transportation policy. They cited a number of factors including the university's plan for the new School of the Environment, international concern about CO2, global warming and the role of auto emissions in global climate change, the campus' proximity to Sacramento and California's leadership on emissions and transportation policy.

BICYCLE CAPITAL OF THE WORLD - AND A MUSEUM TO PROVE IT: New Museum Gets Wheels

The town of Davis affectionately calls itself the Bicycle Capital of the World. Now, the University has received \$440,000 to help turn a long-held dream to open a bicycle museum into reality.

Once local matching funds of \$60,000 are raised, UC Davis Transportation and Parking Services Director Brodie Hamilton and a team of three other bicycle aficionados plan to buy a collection of 60 antique bicycles, velocipedes, tandems and other examples of human-powered transportation spanning from the 1820s to the 1920s.

The idea is to use at least part of the old Davis City Hall as a museum site. That building, now occupied by the Davis Police Department, will be vacated within a year. In the meantime, organizers are looking at how they can set up a city/campus project that eventually will turn into a private, nonprofit museum.



"People will come to see this because it will be the only bicycle museum west of the Mississippi," Hamilton said.

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