

Open House Shows off Futuristic SUVs, Buses and Big Rig

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Editor's note: High-resolution color photos of the vehicles and open-house activities are available by e-mail; contact Sylvia Wright, below.

Abundant and energy-rich, hydrogen is the star of today's open house at UC Davis, where the Institute of Transportation Studies (ITS-Davis) is showcasing its research programs on the future of hydrogen fuel in transportation.

The programs themselves are abundant and energetic; ITS-Davis has the most varied and extensive clean-transportation studies of any university in the world.

At today's open house, [ITS-Davis](#) faculty and students will unwrap their newest research subjects: a new transit bus, the first in the nation in everyday service to be powered by hydrogen-enriched natural gas; a new hydrogen refueling station, expected to be the highest-volume station in the West; and a new Toyota SUV powered by a hydrogen fuel cell, one of just 18 in the world and eight in the United States. Also being celebrated are the institute's young Hydrogen Pathways research program; a fuel-cell auxiliary power unit for diesel trucks; and a 1994 fuel-cell transit bus, one of the first in the world, serving as a rolling laboratory here in Davis.



The future of hydrogen fuel in transportation is highlighted at an open house held by the Institute of Transportation Studies at UC Davis. (Sylvia Wright/UC Davis photo)

"Today we are introducing our newest research and education tools that, together with our existing programs, build on the Institute's contribution to developing a sustainable transportation future," said ITS-Davis Director Dan Sperling.

"Over the past decade this institute has built a program that has brought international acclaim to UC Davis," said UC Davis Chancellor Larry Vanderhoef. "Not only do they train the transportation scientists and decision-makers of tomorrow, they also benefit the campus and Northern California by introducing clean, advanced vehicle technologies right here in our community."

Guests at the open house, including staff members and officials from industry, government and the campus, will be the first to see the new hydrogen-enriched transit bus. ITS-Davis and [Unitrans](#), the student-run transit service for the campus and city of Davis, will jointly evaluate this bus and a duplicate arriving in 2004.

"Our goal is to learn if this experimental fuel blend can achieve fuel economy and power similar to that of our standard natural-gas buses, plus meet California's strict 2007 transit-bus emissions standards," said ITS-Davis researcher Marshall Miller, who is co-directing the transit project with Unitrans assistant general manager Anthony Palmere. "If it can, bus fleets across the U.S. will have an outstanding low-cost option to achieve dramatic clean air benefits," Miller added.

Guests at the open house also will have a chance to ride in [the campus' second SUV](#) powered by a hydrogen fuel cell, the Toyota FCHV. The second SUV is the [Wave II model](#), improved for U.S. use with left-hand-drive operation, improved braking performance and a new navigation system. This is the eighth Toyota FCHV in the United States; others are at UC Irvine, the California Fuel Cell Partnership in West Sacramento and Toyota Motor Sales, U.S.A. in Torrance. Ten more are in Japan.

Researchers Mark Delucchi, Ken Kurani, Marshall Miller and Tom Turrentine lead this multi-year research program, which seeks to identify the most promising early markets for fuel-cell vehicles (FCVs), educate communities about hydrogen and FCVs, recommend designs for consumer-friendly hydrogen fueling stations, and analyze the life-cycle costs of fuel-cell vehicles.

"Change can be difficult, and after a century of the internal-combustion engine, there's bound to be uncertainty as well as excitement about this completely different vehicle technology," said Kurani, one of the country's leading vehicle-market researchers. "Just as we need to discover what is technically feasible, we need to understand how consumers will respond to these new vehicles and fueling systems."

The new hydrogen fueling station is the first on the UC Davis campus and the third in Northern California. Installed by [Air Products and Chemicals, Inc.](#), it supplies fuel for the hydrogen-enriched natural gas buses and the Toyota FCHVs. It is expected to pump more hydrogen for transportation use than any other fueling station west of the Mississippi River.

Founded in 1991, ITS-Davis coordinates the efforts of 40 affiliated faculty members and 70 graduate students with a \$5 million annual budget. Its mission is research, education and outreach on emerging transportation issues with great societal significance. ITS-Davis' faculty and students represent varied disciplines including engineering, economics, environmental science and policy, business and human behavior.

Working closely with the campus's [College of Engineering](#) and [College of Agricultural and Environmental Sciences](#), ITS-Davis pursues university research programs in alternative fuels technology and policy, vehicle emissions and air quality, transportation economics, and travel behavior, which includes telecommunications impacts on travel and regional travel demand.

Additional information:

[UC Davis Institute of Transportation Studies](#)

[Unitrans](#)

[Fuel-cell SUV study](#)

[Toyota FCHV Wave II](#)

[Air Products and Chemicals Inc.](#)

[UC Davis College of Engineering](#)

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