

A man with dark hair, wearing a white button-down shirt and blue jeans, is sitting on a pile of large, dark, wet rocks. He is looking off to the right with a slight smile. In the background, a wide river flows under a clear blue sky. The far bank is lined with green trees and some dry, brownish vegetation. The overall scene is bright and sunny.

HOW CAN WE PROTECT
OUR ENVIRONMENT FOR
TODAY AND TOMORROW?

DR. DOOM WARNS OF LEVEE LIMITS

**GEOLOGIST JEFFREY MOUNT DOESN'T
MINCE WORDS. AFTER HURRICANE
KATRINA FLOODED NEW ORLEANS AND MOUNT
RELEASED A STARK ANALYSIS OF CALIFORNIA'S**

own vulnerabilities, his dire forecast earned him the nickname "Dr. Doom."

But Dr. Doom has street cred, born of 30 years of renowned research, teaching and public service. His record has earned him top honors, including the Roy J. Shlemon Endowed Chair in Applied Geosciences, directorship of the UC Davis Center for Watershed Sciences and the President's Chair in Undergraduate Education, which he shares with his longtime scientific collaborator, UC Davis fisheries biologist Peter Moyle.

And so, when Mount reported that the odds of massive levee failure in the Sacramento-San Joaquin Delta in the next 50 years were nearly two in three, things happened: The *Sacramento*

Bee published a powerful series of stories predicting flood catastrophe, state legislators introduced bills that would have restricted development on flood plains, and voters approved a \$4.1 billion flood-prevention bond on the November ballot.

"California is on a collision course with disaster, that will affect 23 million people's water supply, 7 million acres of irrigated agriculture and the seventh largest economy in the world," Mount says. "Now, for the first time in 50 years, all levels of government acknowledge that substantial changes are coming in the way we manage water through this delta."

JEFFREY MOUNT'S
WORK HELPED TO PASS
A \$4.1 BILLION FLOOD
PREVENTION BOND
ON THE NOVEMBER
BALLOT.



ANDREW HARGADON, DIRECTOR OF THE UC DAVIS ENERGY EFFICIENCY CENTER, AT THE CENTER'S GRAND OPENING IN APRIL.

ENERGY EFFICIENCY ARCHITECT BILL STARR SAYS THE AWARD- WINNING "GREEN" LABORATORIES AND CLASSROOMS RISING AT UC DAVIS ARE CHANGING MORE THAN JUST THE CAMPUS'S

energy bills. They are changing the state's construction culture by showing how energy-efficient buildings can still be functional and affordable and, moreover, more comfortable places to work, study and create.

"We began by taking an intensively greener approach to our own construction projects," Starr says. "We've ended up incorporating academic teaching and research programs, as well as doing outreach to other institutions on how they can do these themselves."

For example, the new \$27 million Gladys Valley Hall at the School of Veterinary Medicine maximizes natural lighting and airflow to reduce energy costs by one-third. The new \$24 million Tahoe Center for Environmental Sciences follows

the same principles in a vastly different climate, for even greater energy savings.

On a smaller scale, the campus's California Lighting Technology Center designed the lighting for the new offices of the Office of Research. And when old campus buildings are updated, the new interiors (especially laboratories, where ventilation requirements are high) all get energy makeovers.

To promote these activities up and down the state, UC Davis in April launched a new Energy Efficiency Center, matching \$1 million in seed money from the Clean Energy Fund with \$1.3 million in campus funds. The center's mission is to implement energy-saving products and services in buildings, transportation systems and agriculture.



FUELING ALTERNATIVES THANKS TO RESEARCH AT UC DAVIS, YOUR TABLE SCRAPS COULD ONE DAY REDUCE OUR DEPENDENCE UPON FOREIGN OIL.

Soon our cars may run on garbage. Or trees. Or grass. At UC Davis, car-of-the-future engineering is joining forces with state-of-the-art plant science, sustainable farming, waste management and energy conversion science to satisfy California's world-leading emissions policies.

UC Davis researchers are addressing the vast range of variables—from genetics to thermochemical and biochemical reactions to economics—that must be factored into the equation if our cars and trucks are to be powered in the future by something other than petroleum.

For instance, more than 100 researchers are working to develop the newest wave of transportation fuels: biofuels. Their mission is to find the best ways to make fuel from farm and forest residues, like straw and timber trimmings; urban waste,

such as table scraps; and crops grown specifically for energy-rich fibers and grains.

Helping them along is Chevron Corp., which in 2006 agreed to fund up to \$25 million in UC Davis biofuels research in the next five years. And leftovers from San Francisco restaurants are providing the fuel for the campus's new \$4 million Biogas Energy Plant, which turns out methane gas and hydrogen.

Some of these same researchers are also developing the technology, infrastructure and consumer profiles for the Hydrogen Highway, a decidedly different transportation route with a longer ramp-up period.

Add it all up, says Vice Chancellor for Research Barry Klein, and it means "we are getting closer to our goal of driving on clean, affordable energy."



UC DAVIS PROFESSOR RUIHONG ZHANG LOADS THE NEW UC DAVIS BIOGAS ENERGY PLANT, WHICH CONVERTS TABLE SCRAPS AND OTHER ORGANIC WASTE INTO A USEFUL AND NON-POLLUTING COMBINATION OF HYDROGEN AND METHANE GAS, WATER AND FERTILIZER.

