

**S**PEAKING LAST SUMMER TO A CONVENTION OF BLOGGERS IN Chicago, Barack Obama accused the Bush Administration of ignoring or distorting data to shape its decisions on science-related issues. He promised the audience that his policies would be based on “evidence and facts.” Political rhetoric? Perhaps. But some scientists who have seen the first-term U.S. Democratic senator in action say that’s how he operated as a community activist in Chicago and as an Illinois state legislator.

Eric Whitaker, a research administrator at the University of Chicago and former director of the Illinois Department of Public Health, points to a 2004 proposal before the state legislature to offer free flu shots to everyone without health insurance during a shortage of the vaccine. Obama, then chair of the Health and Human Services Committee in the state senate, pressed Whitaker and others on their advice that the shots be limited to high-risk groups. “He pushes you to defend your data,” says Whitaker. In the end, Obama was convinced by their argument that vaccinating everybody would be economically unwise and bucked the majority in voting against the proposal.

Deborah Burnet, a pediatrician at the University of Chicago who studies the connection between obesity and diabetes, says Obama displayed the same evidence-based philosophy whenever she invited the Harvard Law School grad and community organizer to lecture her class on racial disparities in health. The 30-something Obama would urge her students to think about “how to use scientific inquiry to make intelligent public policy,” says

Burnet. She says she was so inspired by his message that students should apply “insights from scientifically collected evidence” to real-world problems that she began a program to help low-income residents make better nutritional choices.

Obama’s campaign sets out a number of lofty science policy goals that might be difficult to achieve in that real world, however. He’d like to double federal spending on basic research and help more Americans get on the Web by broadening Internet access. He also wants to spend \$18 billion on education initiatives covering everything from early childhood learning and precollege math and science instruction to attracting more minority students into science and engineering. Ironically, he’d pay for it in part by delaying NASA’s program to return to the moon and explore Mars—a project that would employ thousands of scientists and engineers.

Like the other Democratic contenders, Obama has made global warming an important part of his campaign. He supports a market-based carbon-trading system to cut carbon emissions to 80% below 1990 levels by 2050 and wants to invest \$150 billion to develop biofuels. But he’s also suffered some political bumps and scrapes along the way to that position.

Last year, for example, Obama introduced a bill to subsidize the conversion of coal to liquid fuel, arguing that it would make the United States less dependent on foreign oil. But environmentalists saw it as a sop to the multi-billion-dollar coal industry in his home state. Obama then backtracked,

rigorous. I don’t think the state budgeted very much,” notes physicist Dennis Erickson, on detail as science adviser, who remembers being given 24 hours to clean out his desk. Despite having a year’s work go down the drain, Erickson doesn’t disagree with what the governor did. “I have nothing but good feelings toward him,” says Erickson, now retired and a contributor to Richardson’s presidential campaign.

Supporters say the incident demonstrates that the 60-year-old Hispanic politician is a principled manager, a tough negotiator, and someone who doesn’t see a conflict between national security and the environment. But some wonder if it is also the portrait of someone who acts precipitously, punishing critics and putting principles above results.

## DEMOCRAT BARACK OBAMA

Home State: **Illinois** Web site: [barackobama.com](http://barackobama.com)  
Current Job: **U.S. Senator** Age: 46

## DEMOCRAT BILL RICHARDSON

Home State: **New Mexico** Web site: [richardsonforpresident.com](http://richardsonforpresident.com)  
Current Job: **Governor** Age: 60

**A**S NEW MEXICO’S NEW GOVERNOR, BILL RICHARDSON enlisted experts from in-state Los Alamos National Laboratory to help him with technical issues. Barely a year later, however, they had been fired, Donald Trump-style. Richardson felt that the Department of Energy’s (DOE’s) weapons lab was dragging its feet on cleaning up long-standing environmental problems, and when a top lab official suggested one day that budget cuts might force the lab to recall its environmental adviser, it was the last straw. “We weren’t going to be blackmailed,” recalls Ned Farquhar, a former staffer now serving as senior adviser to the campaign on energy and climate.

A year later, a new set of advisers from Los Alamos was in place, and Richardson had reached a deal with the lab on a cleanup schedule. “It was pretty



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Observers say the awkward shuffle reflects Obama's relative inexperience in national politics. "It was naïve of him to think that he could side with the coal industry to please voters in his home state and not land in a frying pan on the national stage," says Frank O'Donnell of Clean Air Watch, a Washington, D.C.-based nonprofit. Nonetheless, O'Donnell says, the senator's green credentials are still pretty solid.

Since winning his U.S. Senate seat in 2004, Obama has continued to track health policy issues. He has proposed or supported legislation to promote embryonic stem cell research, increase research on avian influenza, and develop microbicides to protect women from HIV/AIDS. The measures suggest that Obama

saying he would support liquefying coal only if the net carbon dioxide emissions from producing and burning the fuel were 20% lower than levels generated by petroleum-based fuels.

has retained his strong interest in applying science to public health challenges. For academic health centers, says Burnet, that means "getting the translational component going."  
**—YUDHIJIT BHATTACHARJE**

Reelected easily in 2006, Richardson has promised voters that he will shake up the Washington establishment. But he's hardly a fresh face. After earning a bachelor's and a master's degree (in public policy) from Tufts University, Richardson spent nearly 30 years working for the federal government, first as a Democratic staffer, then as a seven-term congressman, and finally, as U.N. ambassador and energy secretary in the second Clinton Administration.

The most striking part of his résumé is his extensive, hands-on negotiations with regimes in North Korea, Iraq, and Sudan for the release of U.S. prisoners and other human-rights issues. Richardson has also taken a very aggressive stance on climate change, including calls for a 90% reduction in U.S. greenhouse gas emissions by 2050 through a cap-and-trade system, a 50% cut in oil consumption by 2020, greater reliance on renewable energy sources by utility companies, and federal subsidies to promote plug-in hybrid cars. "There is no free market when it comes to greenhouse gas emissions," says Farquhar. "We need rules and boundaries."

To help meet those goals, Richardson has proposed a \$10 billion to \$15 billion trust fund to support new energy technologies, replenished by the fruits of successful investments. But Farquhar says it's not a honey pot for academic researchers, as the fund would pursue a more product-oriented approach than the Advanced Research Projects Agency—Energy created last summer. Farquhar says Richardson also plans to "reconfigure"

DOE to deal with the twin challenges of energy independence and global warming, possibly shifting DOE's ethanol program to the agriculture department and giving the Environmental Protection Agency a bigger role in climate change.

The lack of specifics is characteristic of someone who, in the words of one former aide, "has more ideas than time to implement them." That's equally true for his education platform. His response to the president's signature No Child Left Behind program to improve elementary and secondary schools is characteristically blunt: "Scrap it." But when asked what would replace the annual testing regimen and penalties for schools that don't make the grade, his answer is a call for a national summit to work out the details. His promise to "hire 100,000 new science and math teachers [and] create 250 math, science, and innovation academies" likewise ignores the fact that state and local authorities, not the federal government, hire teachers and run schools.

Despite repeated campaign statements about the importance of innovation, Richardson isn't above embracing his own scientific illiteracy as a way to identify with the average voter. In his new book on energy, *Leading by Example*, Richardson asserts that more people would use energy-saving technologies, including light-emitting diodes, if they were given simpler names. "Does anyone on Earth know what a diode is?" he writes. "Probably someone at the two national labs in New Mexico, but not me! And probably not you."

**—JEFFREY MERVIS**

## OTHER REPUBLICANS IN THE RACE



REPUBLICAN

### Duncan Hunter

Home State: California

Current Job: U.S. Representative

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Age: 59



REPUBLICAN

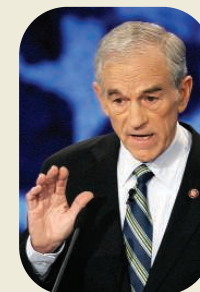
### Alan Keyes

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REPUBLICAN

### Ron Paul

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