

# Climate warriors and heroes

Meet the 28 leaders -- scientists, politicians, activists, celebrities and inventors -- who are fighting to stave off planetwide catastrophe.

A special Salon/Rolling Stone report

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Global warming is a planetary emergency everywhere but in the White House. While the Bush administration fiddles, the rest of the world burns with concern about the earth's rising temperature. With our industries billowing a relentless stream of gases into the atmosphere, trapping heat, we're decimating our natural ecosystems, exacting an incalculable toll on our planet and future health.

The climate warriors and heroes honored here embody the environment's best defense. They are scientists, ministers, students, politicians, activists, lawyers, celebrities, inventors, and world leaders. As Al Gore says in his [accompanying essay](#), they share little in common. "But each of them recognized the threat that climate change poses to the planet -- and responded by taking immediate action to stop it," Gore writes.

The range of their actions is remarkable. A college dropout tours the country in a bus that runs on vegetable oil, educating young people about fuel efficiency. The CEO of General Electric, one of the world's biggest polluters, argues for a federal policy to reduce global warming. An emissary from the Inuit in the Arctic accuses the United States of violating the rights of her people by refusing to curb its climate-heating pollution.

"Their stories should inspire and encourage us," Gore writes, "to see with our hearts, as well as our heads, the unprecedented response that is now called for."

## THE DROPOUT

### Billy Parish



There are lots of ways to fight global warming: drive less, send e-mails to Congress, buy more efficient light bulbs. Billy Parish dropped out of Yale.

Parish, a junior from New York, became convinced that climate change poses a serious threat to human survival. So he quit school and became the coordinator of Energy Action, mobilizing more than a thousand student groups to lower climate-warming pollution. Working on a laptop and sleeping on couches from San Francisco to North Dakota, Parish has galvanized students across the country to take action on global warming.

In July he led a three-day fast at the White House to call attention to the estimated 150,000 deaths caused each year by climate change. He dispatched a bus that runs on biodiesel and vegetable oil to tour summer music festivals and promote fuel efficiency, culminating in a two-day forum in Detroit. And he has persuaded more than 120 universities to sign the Campus Climate Challenge, vowing to lower their emissions of greenhouse gases.

Parish first became concerned about the environment in high school, when he spent a semester tending an organic farm in rural Vermont. The 23-year-old is soft-spoken in a way that commands respect: He's sincere without sounding self-righteous. "Billy had the courage to leave Yale to go

get something done on the climate issue when it is most needed -- now," says James Gustave Speth, dean of the Yale School of Forestry and Environmental Studies. "His efforts to mobilize young people are exactly what is needed."

For Parish, who once dreamed of being a doctor, dropping out of college seems like a small price to pay to halt global warming. "More and more young people are beginning to realize that climate change will significantly impact their future," he says. "We need to do everything that we can -- fight as hard as we can. Right now it doesn't feel like there's time for me to be in school."

## THE AVENGER

### Al Gore



When history derailed the presidency of Al Gore, it may have increased his power to save the planet. Freed from the restraints of elected office, the former vice president is now widely regarded as America's most persuasive and passionate spokesman on global warming. "Rescuing the environment from climate collapse was a -- if not the -- defining issue of my political career," says Gore, 57. "And you can be damn sure I'm not giving up on it now."

No public figure has a deeper working knowledge of the climate crisis. Gore studied the effects of greenhouse-gas emissions at Harvard and held the Senate's first hearing on the science of climate change. In 1988, when he ran for president at the age of 40, his "primary motivation was to push the global-warming issue." Four years later, he wrote "Earth in the Balance," the bestselling book on global warming. Not long after that, Bill Clinton, who calls Gore "one of the greatest political and scientific intellects of our time," asked him to be his running mate.

As vice president, Gore was a chief architect of the Kyoto Protocol, the historic accord on reducing carbon-dioxide emissions. But the Senate refused to ratify the treaty, calling the evidence "inconclusive." Now that the scientific consensus is irrefutable,

Gore considers it "damned immoral" that the White House and Congress continue to block action on global warming. "This is an emergency of historic proportions," he says. "We are in a race against time. There is a brave and hearty band of about 2 percent of Washington officials who are working on this, but 98 percent are in denial."

These days, Gore devotes much of his energy to pressuring Washington to act. Since 2001, he has traveled the world giving a riveting presentation titled "Global Warming: A Planetary Emergency," a lecture and multimedia display that lays out the causes and consequences of what Gore calls "the collision between civilization and the earth." And last year, he co-founded an investment firm that supports climate-change initiatives and sustainable development.

For Gore, who grew up on a cattle farm in Tennessee and keeps a picture of environmental pioneer Rachel Carson on his desk, global warming is as much a moral issue as a scientific one. But despite the urgency of the issue, he remains at heart more an optimist than a doomsayer. "If Americans act immediately, we can innovate our way out of this problem," Gore says. "We must use our political institutions, our democracy, our free speech, our reasoning capacity, our citizenship, our hearts and reason with one another, see the reality of this problem, and act as Americans."

## THE PAUL REVERE

### Dr. James Hansen



On June 23, 1988, as the temperature in the nation's capital climbed to a record 101 degrees, James Hansen sat before the Senate Committee on Energy and Natural Resources and offered a blunt warning about the threat of global warming. "The greenhouse effect has been detected," he testified, "and it is changing our climate now."

That early alarm earned Hansen a reputation as the "Paul Revere of climatology." His testimony drew on extensive scientific data he had gathered as head of the Goddard Institute for Space Studies at NASA -- but that didn't stop the energy industry from attacking him. When Hansen testified again, the first Bush administration inserted a disclaimer into his remarks, portraying his findings as "not reliable."

Hansen, a mild-mannered Iowan, blew the whistle on the White House tampering -- and quietly collected more evidence of global warming. In April, he reported that readings gathered by thousands of robotic sensors from deep in the earth's oceans show that the planet is "trapping" enough heat to raise average global temperatures by one degree in the next century. "He's a good example of what a citizen-scientist can do," says NASA colleague Ronald Miller. "His work is scientifically rigorous, but he also advises voters on how to deal with global warming."

Hansen, the son of a tenant farmer, is a die-hard Yankees fan who uses baseball statistics to help explain global warming. He made his name as one of the world's leading experts on Venus before switching planets in 1976. What alarms him most, he says, is how the current Bush administration is suppressing evidence of climate change. "In my more than three decades in government, I have never seen anything approaching the degree to which information flow from scientists to the public has been screened and controlled as it is now," Hansen says. "Delay of another decade, I argue, is a colossal risk."

## THE MESSENGER

### **Dr. Robert Watson**



It's not easy getting international scientists to agree about anything. Meteorologists look at the world differently than geologists, and developing countries have different agendas than industrial nations.

But Robert Watson, an American born in England, practically invented the process of getting the world's scientists to work together. In the 1980s, he persuaded researchers to combine their efforts to study damage to the ozone layer. And as chair of the Intergovernmental Panel on Climate Change, he brought the same skills to bear on global warming. In 2001, the panel issued a landmark study endorsed by 120 nations. Its simple but devastating conclusion: Human beings have already caused the planet to heat up significantly, and it is likely to get worse. The study found that the earth's temperature will likely rise as much as 10 degrees by 2100, and that sea levels will rise as much as 35 inches.

The Bush administration responded by killing the messenger. After the study appeared, ExxonMobil sent a memo to the White House lobbying for Watson to be removed from the United Nations panel. A few months later, Watson was unceremoniously replaced with a less outspoken representative. "The Bush administration axed him because they saw him as too effective," says Michael Oppenheimer, a geosciences professor at Princeton University. "The world is poorer for not having Bob in this kind of role."

Not that the ouster silenced him. As chief scientist for the World Bank, Watson is on the road almost half of every year, working with developing nations to cut their greenhouse-gas emissions and to raise awareness about climate-related threats posed by widespread disease and flooding. "There could be a lot of lives lost and people being displaced," says Watson, 56. And despite being

a target of the Bush administration, he notes that Democrats in Congress have also refused to impose mandatory targets to curb greenhouse gases. "What if tomorrow morning President Bush decided he wanted to move to targets -- would Congress approve it?" he asks. "The answer is most certainly no."

## THE ELDER STATESMAN

### **Raúl Estrada Oyuela**



In 1997, Argentine diplomat Raúl Estrada Oyuela presided during a two-week conference in Japan, where thousands of international delegates were meeting to hammer out the first global treaty on climate change. On the final night, after three days of nonstop negotiations, the delegates were close to an agreement. But at the last minute, U.S. representatives refused to sign, insisting that the treaty include a provision allowing countries to buy and sell "emissions credits" from one another, essentially trading the right to pollute. Tempers among the exhausted delegates grew short -- until Estrada, a portly and distinguished statesman known for his love of good food, stepped in and eased the tension with rapturous descriptions of his wife's home cooking. At the 11th hour, he accepted the American provision, sealing the deal on a unanimous agreement he named the Kyoto Protocol.

"Estrada is a grandmaster of diplomacy and the godfather of Kyoto," says David Sandalow, an assistant secretary of state under Bill Clinton, who helped negotiate the agreement. "It wouldn't have happened without his leadership, excellent judgment and good humor."

Eight years later, the landmark agreement has become the centerpiece of international law. In February, 131 countries -- including Canada, Japan and every member of the European Union -- began implementing the treaty, which requires nations to limit heat-trapping gases by 2012. But Kyoto failed to receive a single vote when it was brought before the U.S. Senate in 1997, and the Bush administration has refused to implement it, insisting that it would have "wrecked our economy."

In fact, as Estrada points out, Kyoto is proving to be an advantage: Germany, for example, has created 450,000 new jobs while cutting carbon emissions by nearly 20 percent. "We expected the United States leaders to comply," says Estrada, "because the protocol is economically forward-thinking." What's more, he adds, American companies can't escape the treaty: Any U.S. business that operates in a Kyoto-endorsing country must comply with the agreement's emissions restrictions at its overseas plants.

A father of eight and grandfather of 12, Estrada started out as a journalist before getting his law degree and serving in embassies from the United States to China. His global experience makes him confident that America will eventually join Kyoto. "I believe that international collaboration is the only way to solve this global problem," says Estrada, 68. "And I have faith that U.S. leaders will eventually agree to participate in this greater good."

## THE POWER PLAYER

### **Paul Anderson**



You wouldn't expect the cutthroat CEO of one of the country's largest utilities to propose a tax on his own pollution -- but that's exactly what Paul Anderson of Duke Energy is doing. Anderson wants to slow global warming by giving industry an incentive to go green -- levying a "carbon tax" on their emissions of climate-warming gases. Since Duke burns 17 million tons of coal each year, the tax would encourage the North Carolina power company to replace its aging generators with

newer, cleaner facilities that run on wind or natural gas. "It gives you the flexibility to make intelligent investment choices," Anderson says.

Many of Anderson's colleagues in the energy industry consider the carbon tax "a high-cost proposal for something that we're not even sure is real." But Anderson has no doubt that global warming is real: He witnessed the damage himself in 1999, when he was CEO of what is now the world's largest mining company, in a chopper flying over one of his operations in New Guinea. "I saw that the glaciers had shrunk to practically nothing," he says. "It was a heck of a dramatic way of understanding that something is actually happening here."

In the normally staid utility industry, Anderson is something of a maverick -- an energy czar who has been invited to captain Greenpeace's ship, the Rainbow Warrior. The son of a nuclear-plant worker, he jokingly refers to himself as Bart Simpson. But Anderson, 60, doesn't kid around about global warming: The beauty of a carbon tax, he says, is that it's a "no regrets" policy: "If somebody tomorrow were to discover that global climate change isn't real, the carbon tax still would have resulted in higher-performance machinery, more conscientious executives and healthy debate in the industry. Better yet, it would have reduced our dependence on foreign oil. At the end of the day you'd say, Well, that wasn't a bad deal anyway."

## THE HAWK

### **Jim Woolsey**



Stern and officious, Jim Woolsey comes across like the hard-core hawk he is -- a former director of the CIA with access to high-level officials in the White House and the Pentagon. But going against the grain of old-school conservatism, he has become the loudest voice in a growing chorus of "cheap hawks" who want to wage the war on terror with plug-in cars and fuel made from manure. A member of the Defense Policy Board, Woolsey wants to defeat terrorism by freeing America from its dependency on foreign oil, rather than routing the enemy in costly wars. "America's energy demand is financing terror," Woolsey says. "We don't need pie-in-the-sky hydrogen scenarios that are 20 years out. We don't have that kind of time."

Among the techno-fixes Woolsey promotes: producing ethanol from prairie grass and corncobs, harvesting biodiesel from farm waste, and adding a battery to existing hybrid cars. "Plug-in hybrids could get up to 150 miles per gallon," he says. "And since electricity is comparatively cheap, you would get the functional equivalent of 50-cent-a-gallon gasoline."

Woolsey's primary goal is to bolster America's national security. But his energy-independence strategy would also curb global warming, create a market for clean-energy providers, strengthen the dollar, cut the deficit, and generate international goodwill. "It's not just win-win," he says. "It's win-win-win-win-win."

Woolsey, 64, is careful not to criticize his fellow conservatives, and the White House has begun to borrow his ideas about energy efficiency. "Conservatives dismiss renewable energy as kind of airy-fairy -- you know, real men dig and drill," says Reid Detchon, executive director of the Energy Future Coalition. "Woolsey has used his security-hawk clout to cut through that myth and pump up the profile of clean-tech solutions."

An Oklahoma native, Woolsey earned degrees from Stanford, Oxford and Yale. For a hawk, he can be a bit of a prankster; he sings backup in a rock band called the Goths and played the role of Homeland Security secretary in a war-game scenario prepared for Congress that envisioned terrorist attacks disrupting oil supplies. An avid kayaker who lives in a solar-powered house off Chesapeake Bay, he also confesses to being "a tree hugger" -- but he isn't worried about sharing

an agenda with environmentalists. "It doesn't matter what the principal motivation is," he says. "It's just two different sets of reasons for wanting the same thing."

## THE EMISSARY

### **Sheila Watt-Cloutier**



Sheila Watt-Cloutier's people, who have lived in the Arctic for thousands of years, recognized the threat posed by global warming long before science confirmed their observations. When robins and barn owls began showing up in the North's frozen reaches, the Inuit had no name for them.

As chair of the Inuit Circumpolar Conference -- an alliance of 155,000 indigenous people -- Watt-Cloutier serves as an international emissary. This fall, the ICC is filing a petition with the Inter-American Commission on Human Rights that accuses the United States of violating the rights of the Inuit by refusing to curb its climate-heating pollution. "Sheila is putting a human face on the problem of global warming," says Donald Goldberg of the Center for International Environmental Law.

Watt-Cloutier has only to look out of her living-room window in the Canadian town of Iqaluit to see the effects of global warming: Sea ice is melting and permafrost is thawing. "What you do in the United States is connected to people falling through the ice in the Arctic," she says. "What happens to the planet happens first up here. We are the early warning for the rest of the world."

A grandmother at 51, Watt-Cloutier spent the first 10 years of her life traveling by dog sled. Today she hopes the human-rights petition will show the rest of the world that the Inuit aren't simply helpless victims who can't make it in the modern world. "I don't think we're meant to be eliminated by globalization," she says. "We're meant to be the beacon, so that the rest of the world can understand what it's doing to itself."

## THE PRIME MINISTER

### **Tony Blair**



Eighteen months after the September 11 attacks, British Prime Minister Tony Blair stepped on a podium in London and identified the biggest long-term threat confronting the world. "There will be no genuine security," Blair declared, "if the planet is ravaged." He went on to equate global warming with weapons of mass destruction, a position later elaborated by his chief science advisor, Sir David King: "Climate change is the most severe problem that we are facing today -- more serious even than the threat of terrorism."

Blair's international reputation was damaged when he supported President Bush's invasion of Iraq -- but he has tried to use his political capital to push the White House to wage war on global warming. Blair made climate change one of his top two priorities at the G8 summit last summer, and he warns that only "timely action" will avert a threat "so far-reaching in its impact and irreversible in its destructive power that it alters radically human existence." Britain's own record debunks Bush's insistence that curbing climate change would hurt the economy: Since 1990, Britain has reduced its greenhouse-gas emissions by 14 percent, while its economy has grown by 40 percent.

Blair, 52, is no newcomer to the fight. After a briefing by his science advisors in 2001, he ordered a detailed investigation into the impact of climate change. The conclusion: Global warming will become irreversible unless the world slashes CO2 emissions by 60 percent within 50 years.

In a stroke of diplomatic genius, Blair pledged to achieve such reductions in Britain by 2050 -- making him the first world leader to propose concrete targets beyond the time frame outlined in the Kyoto Protocol. Spurred by his example, France, Germany and Sweden followed suit. "If there is one political leader who has most vigorously championed the issue of climate change, it is Tony Blair," says Klaus Toepfer, executive director of the U.N. Environment Programme.

An Oxford grad who played in a rock band as a student, Blair is an avid nature buff who has hiked the Pyrenees and an obsessive scholar who has been known to read the Koran on vacation. His urgency over global warming sharpened considerably in 2003, after a record heat wave in Europe left 30,000 people dead. In recent years, he has ordered his government to purchase a fleet of hybrid cars and make its buildings more energy-efficient.

So far, the Bush administration has ignored his calls for action. But Blair remains determined to force the United States to take responsibility for its contribution to global warming. "The blunt reality," he says, "is that unless America comes back into some form of international consensus, it is very hard to make progress."

## THE ROAD WARRIOR

### **Hiroshi Okuda**



Hiroshi Okuda, the chairman of Toyota, envisioned the need for a hybrid car long before history demanded it. In the 1990s, at a time when oil prices were hitting rock bottom and America's SUV market was exploding, Okuda greenlighted the engine technology that would usher in an era of fuel-efficient -- and eventually zero-emission -- cars.

Today there are more than 350,000 Priuses on the road worldwide, and other automakers are racing to catch up with the 350 patents Toyota holds on gas-electric hybrids. "When it comes to perfecting the killer app of hybrid technology," says Ashok Gupta, director of the air and energy program at the Natural Resources Defense Council, "Okuda is the Bill Gates of the auto world."

Six feet tall and a black belt in judo, Okuda likes to break the rules. To encourage youthful innovation, he promotes younger employees to managerial roles. He has dismissed American carmakers as "stupid." And in June, to help Japan meet its climate targets under the Kyoto Protocol, he sauntered down a Tokyo catwalk in a lightweight suit, sans tie, his shirt collar unbuttoned down to midchest. It was a fashion statement almost as scandalous as an emperor with no clothes: Formal business attire is to Japanese executives as shitkickers are to Texas oilmen. But Okuda, an outspoken climate crusader at age 72, was promoting Japan's emerging "cool biz" movement, modeling lighter suits that could alleviate the need for air conditioning in office buildings.

For all his showmanship, Okuda is dead serious when it comes to the fight against global warming. "People and countries simply will no longer allow autos to damage their living environments or the earth's ecosystems," says Okuda, who has worked at Toyota for 50 years. The Prius "embodies this spirit," he adds, contributing to the company's "growth in the moral dimension."

Okuda, a serious reader who ranges from political memoirs to Goethe, selected the name "Prius" because it means "to go before" in Latin -- signifying "a forerunner to the 21st century and to the era when automobile technologies become highly diverse." Hybrid technology is already setting the stage for the future: Building on the system used in the Prius, Toyota has developed a prototype, the FCHV, that runs on hydrogen fuel cells.

## THE ICE HUNTER

## Dr. Lonnie Thompson



Lonnie Thompson has spent more time above 18,000 feet than any other person on earth. Trekking to the Himalayas and Andes and beyond, he has risked blood clots and temporary blindness in the name of a single pursuit: preserving tens of thousands of years of weather history coded deep in the planet's fast-vanishing glaciers. "No scientist has taken bigger risks to track ancient weather patterns and help us understand the anomaly of current climate trends," says Al Gore.

Thompson stores his prehistoric glacial samples at Ohio State University in vaults kept at subarctic temperatures and studies the dust particles and air trapped within the ice. From this atmospheric evidence, he has reconstructed a meticulous calendar of temperatures dating back 750,000 years. The upshot: "It proves that the warming trends of today are vastly more dramatic than what we've seen over 5,000 years," Thompson says.

Growing up on a small farm in West Virginia, Thompson studied geology so he could work in the coal industry. But he got sidetracked in grad school, when he examined the first ice core ever extracted by American scientists. "You could have knocked me over with a feather the day I discovered, firsthand, that glaciers contain a frozen history of the earth," he recalls. Now, in his work at the Byrd Polar Research Center at Ohio State, Thompson possesses a will to survive on par with Lance Armstrong's, defying frostbite and hurricane-force winds. Photographs he has taken provide disturbing views of the world's melting glaciers -- including the ice cap on Mount Kilimanjaro, which is expected to disappear entirely by 2015.

Thompson dismisses skeptics who contend that the current warming trend is due to a natural cycle. "Name one who has ever really studied climate or collected data," he says. "I bet you can't." Glaciers, he adds, "have no political agenda. They don't care if you're a Democrat or a Republican. Science is about what is, not what we believe or hope. And it shows that global warming is wiping out invaluable geological archives right before our eyes."

## THE HARDBALLER

### Dr. Ralph Cicerone



In 2001, after 2,000 international scientists issued a landmark report concluding that climate change is a man-made problem, the White House flatly rejected the resounding global consensus, demanding "information based on science." Casting suspicion on the work of foreign scientists, President Bush called for a report by America's elite scientific institution, the National Academy of Sciences -- referring the issue to an NAS panel that included leading skeptics intent on refuting the conclusive evidence of global warming.

But Bush didn't count on Ralph Cicerone. An atmospheric chemist who has spent decades computing pollution levels around the world, Cicerone put up a formidable fight against the skeptics -- and won. The NAS published a corroboration of the international report, broadcasting the message that scientists will not serve as apologists for the president. "It took incredible courage," says Stephen Schneider, a climate expert at Stanford University. "Ralph's team refused to buckle under pressure from the administration." Faced with the panel's strong conclusions, Bush had no choice but to publicly admit to the overwhelming evidence that humanity is causing climate change, even as his administration fails to address it.

Before opting for a career in science, Cicerone played varsity baseball at MIT and was offered a job as a radio announcer for the San Diego Padres. Having spent decades collecting greenhouse-gas samples from sources as varied as tailpipes, rice paddies and cow pastures, Cicerone has proved to be a remarkably savvy political operative. He opposed Bush's ouster of Robert Watson

from a U.N. panel on climate change, claiming it would "greatly reduce the emphasis on science." And in June, when Rep. Joe Barton of Texas demanded an investigation to discredit three scientists whose data confirmed global warming, Cicerone denounced the move as "intimidating" and demanded that it be halted.

To Cicerone, 62, the politics of global warming seem simpler than the science. "I can't emphasize enough how complicated the climate system is," he says. "So to see all the evidence that has come together recently is staggering. And despite all the political polarization around the issue of climate change, there is more serious interest in it than I have ever seen. That revs me up."

## THE LITIGATOR

### John Adams



If the planet has a lawyer, it's John Adams. In 2003, when the Bush administration failed to curb auto emissions as mandated by the Clean Air Act, Adams unleashed his team of attorneys at the Natural Resources Defense Council to file a landmark lawsuit against the government. He also sued the nation's five largest power companies for spewing the greenhouse gases responsible for global warming, and he will soon be going to court to stop automakers from blocking a new clean-car law in California.

All told, the organization currently has more than 200 lawsuits pending against polluters. "NRDC represents the gold standard," says Eric Schaeffer, former head of law enforcement at the Environmental Protection Agency. "Their attorneys rival the sharpest minds in the EPA and are defending public health right now in a way that officials under the Bush regime can't."

At 72, Adams is a white-haired, button-down attorney who comes across as mild-mannered and unflappable. But he can display a mean bark in the courtroom, as well as an impeccable command of the facts. A crackerjack strategist who co-founded NRDC in 1970, he promptly made a name for the organization by playing a key role in writing the Clean Air Act and the Clean Water Act.

NRDC now boasts more than a million members, an annual budget of \$60 million and a more powerful climate arm than any other environmental group. In his 35 years of shaping NRDC's legal tactics, Adams says, he has never seen a more worthy target than the Bush administration: "Their denial is stupefying. Here we have an administration that invaded Iraq on sparse and even bogus evidence, and yet they claim to be unconvinced by the overwhelming data on climate change -- despite a bigger scientific consensus than most any we've ever seen in history."

Adams grew up in New York's Catskills and still owns a farm there, often wheeling guests around on an ancient Cub Cadet tractor. But he is not afraid to draw the ire of his allies: NRDC has taken flak from fellow environmentalists for siding with the Bush administration and fossil-fuel producers on the benefits of "clean coal," a new technology that filters out climate-warming pollutants so they can be "sequestered" underground. "We're not going to solve the climate problem unless we get industry to join us in the fight," Adams insists.

Coal accounts for more than half of U.S. electricity production, and Adams believes that a complete shift to renewable energy will simply take too long to protect the climate. "The bottom line," he says, "is that America has to start significantly reducing greenhouse gases even before we phase out fossil fuels."

## THE PRODUCER

### Laurie David



No one has done more to get global warming off the science page and on to the front page than Laurie David. A trustee of the Natural Resources Defense Council, David is putting together a comedy special on climate change that will air Nov. 20, featuring celebrities such as Tom Hanks, Steve Martin and Robin Williams. She is producing an HBO report on global warming called "Too Hot Not to Handle," which she promises will be "the least wonky documentary anybody has ever seen on this issue." And she has organized a "virtual march" on Washington, signing up

Walter Cronkite, Sen. John McCain, Leonardo DiCaprio and 140,000 other Americans to demand immediate action on global warming.

"She can get any studio head on the telephone within a few minutes, and virtually any Hollywood celebrity," says Robert F. Kennedy Jr. "She's opened up new corridors of power to the environmental movement."

David is working those corridors to "permeate pop culture" with environment-friendly images. Her husband, Larry David, the creator of "Curb Your Enthusiasm," drives a Toyota Prius hybrid -- both on the show and in real life. And thanks to her efforts, hybrids also make prominent appearances on "24" and "Alias" -- cause-related product placement designed to make the fight against global warming look cool.

David, 47, used to berate Hummer drivers at red lights for their lousy fuel economy, but she gave up the lectures at the insistence of her preteen daughters. These days, her urgency is most apparent in the virtual march, which will be featured this fall on "The Young and the Restless" and "The Bold and the Beautiful." Rather than burn fossil fuels to get millions to Washington, David is signing people up online for a cross-country look at climate change's devastation. "You don't have to go to Alaska to see that global warming is real and now," David says. "You can see it in Louisiana and Florida, in New Jersey and Arizona. We have to shift the debate on this issue this year."

Her husband likes the online protest for a different reason. "The virtual march is a perfect opportunity for the lazy man to do something good without having to expend any effort," he says. "This thing was made for me."

## THE LAWMAKERS

### John McCain and Joe Lieberman



For a politician, Sen. John McCain doesn't sound optimistic about staving off global warming. "We're making great progress," he says, "but I'm not convinced that we are going to devise solutions in time to prevent serious damage to the environment."

Not that McCain isn't doing his part. At a time when some Republicans in Congress dismiss global warming as a "hoax" perpetrated by environmentalists, McCain and Sen. Joe Lieberman have forged a bipartisan counterassault to tackle the crisis. The Climate Stewardship Act, which they introduced in 2003, is the only bill that seeks to force American industry to reduce its total emission of greenhouse gases. Under the measure -- modeled on the market-based program that successfully reduced acid rain in the 1990s -- businesses that exceed a federal cap on emissions would be permitted to buy pollution "credits" from companies that cut their output of CO<sub>2</sub>. "It's an ingenious solution in which polluters are paying pioneers to innovate," Lieberman says.

Although the Senate has twice rejected the measure, McCain and Lieberman have held repeated hearings on the issue, exposing the tactics of their opponents. In one of the most memorable sessions, McCain shot down fellow Republicans who were brandishing a statement signed by

"experts" on climate science -- pointing out that Perry Mason and a Spice Girl were among the signatories.

The Bush administration also refuses to support a mandatory cap on climate-warming pollution, arguing for voluntary limits. Lieberman, 63, calls the president's do-nothing approach "monumental negligence," while McCain, 69, attacks it as "disgraceful." But the deadlock will continue, they say, as long as Congress and the White House remain under the influence of polluting industries. In 2004 alone, the energy industry contributed nearly \$38 million to congressional candidates.

"We see governors and mayors across the nation taking action on climate change, and yet here in Washington, the special interests rule," McCain says. "But they won't rule forever."

## THE TIDE TURNER

### **Dr. Robert Corell**



Few scientists know as much about how global warming is changing the world as Robert Corell. As chair of the Arctic Climate Impact Assessment, Corell oversaw a five-year study by 300 scientists from 15 countries who studied the effects of climate change in the Arctic. The conclusion: Greenhouse gases are causing the planet to heat up faster than anyone realizes. "We're talking about the sea level rising at a rate of about a meter every hundred years or so," says Corell -- enough water to swallow a chunk of Florida and more than 40 percent of Bangladesh. Even if all climate-warming pollution ceased today, he adds, "the oceans would continue to warm, and the glaciers would continue to melt -- and those processes will take 1,500 years to stabilize."

The detailed findings -- laid out in a peer-reviewed, 1,200-page report published on Oct. 21 -- provide the most advanced evidence yet of global warming's stark reality. But a year before the study was finished, the Bush administration stalled its progress, shutting down talks designed to come up with specific policy recommendations. "The United States took umbrage to the process, even though they had voted to create it," says Corell, a senior fellow with the American Meteorological Society. "They said the science was not complete." After a series of tense meetings in Greenland, Iceland and Denmark, the administration finally yielded -- endorsing the recommendations at 3 a.m. on the very last day of negotiations.

Corell, 70, became interested in climate change while studying oceanography. His plain-spoken authority has been instrumental in settling the debate over global warming. "He talks about climate change in terms that regular people can understand," says Sen. John McCain. "A lot of people who used to be skeptical about global warming have been persuaded by the overwhelming scientific evidence presented by studies like the ACIA."

Corell remains optimistic that those who doubt the reality of global warming -- those he calls "the Bush recalcitrants" -- will come around as industry finds ways to profit from cleaner forms of energy. "By 2100, the power plants of today are going to look like the steel mills did in Pittsburgh in 1975," he says. "They will be derelict, because they're no longer useful." Corell has turned his attention to hydrogen and other forms of renewable energy, looking for a way to stem the coming tide. "My grandchildren are pretty damned important to me," he says. "I can't sit here saying, 'Take action,' when I didn't take part in the action time. I don't want to leave a legacy that I didn't do my damndest to try to slow this down as fast as we could."

## THE UP-AND-COMER

### **Zhao Hang**



If China fulfills expectations in the coming decades by emerging as the world's dominant industrial power, its explosive growth could heat the planet to catastrophic levels. China has only 20 million cars on the road -- but at its current pace, that number will surpass 300 million by 2030. That's why Zhao Hang, director of the China Automotive and Technology Research Center, has fought so hard to implement what one U.S. analyst calls "the most important energy policy adopted by any country in the world in the last 30 years."

Working with advisors in California, Michigan and Japan, Zhao devised fuel-economy standards for China that are 20 percent tougher than those in the United States. He then steered the measure through the central government, where it was approved unanimously. The new standards, which went into effect this summer, will reduce climate-warming emissions in a country that is already home to 16 of the world's 20 most polluted cities. They will also save more than 1 billion barrels of oil by 2030 and force automakers to clean up their act: By 2008, 90 percent of the SUVs currently built in America will no longer be legal for sale in China.

China has also implemented a landmark law requiring the country's utilities to produce 10 percent of their electricity from renewable sources by 2020. "China understands that climate change is a very big challenge in human history," says Zhao, 43, speaking in his native Mandarin. "It is a matter in our own interest to ensure that our growth is sustainable -- and to impose limits on our contribution to this problem."

## THE PROPHET

### **Jim Ball**



In the summer of 2003, the Rev. Jim Ball took a road trip through the Bible Belt. Driving a dark-blue Prius from Texas to the nation's capital, he stopped at evangelical churches to talk about the moral and ethical implications of burning fossil fuel, sparking debate over global warming with a simple question: "What would Jesus drive?"

As executive director of the Evangelical Environmental Network, Ball continues to inject the language of scripture into the debate over climate change, calling on Christians to trade in their SUVs for more fuel-efficient cars. "Is it loving your neighbor to put them at risk of all these threats of climate change?" he asks. "Is it doing unto others as you would have them do unto you? I don't think so." Under his leadership, 30 prominent evangelical leaders -- representing 45 million congregants -- held a three-day retreat last year to discuss global warming and are preparing to issue a landmark statement on the issue.

"Jim is like one of the Old Testament prophets warning the people," says the Rev. Richard Cizik, of the National Association of Evangelicals. "I'm sure he has wondered if he was ever going to see the day when the evangelical world was going to wake up. But he's a patient servant of the Lord, and I think that day has come."

By speaking directly to evangelicals -- the base of President Bush's support -- Ball is working to dismantle the divide that has long separated churchgoers and tree huggers. Last January, he attended a pro-life rally carrying a provocative placard that read "Stop Mercury Poisoning of the Unborn."

Ball, 44, grew up in Texas and engages in what he calls "spiritual jogging," praying on his eight-mile runs. He became interested in climate change while getting a doctorate in theological ethics. "Climate change isn't just an environmental problem -- that's low-balling it," he says. "Millions of poor people could die in this century because of global warming, and millions of others are at risk

of hunger and malnutrition. The poster child of global warming is a poor child. And Christians are supposed to look out for the poor, because God loves them."

## THE GOVERNATOR

### **Arnold Schwarzenegger**



In his first two years as governor of California, Arnold Schwarzenegger has implemented more ambitious initiatives to reduce global warming than any other politician in America. "We have to make very, very aggressive moves to reverse this threat," he says. In June, the governor signed an executive order requiring California -- the world's sixth-largest economy -- to slash its climate-warming emissions by 80 percent by 2050. "The goal he set eclipses Britain's," says Sir David King, chief science advisor to Prime Minister Tony Blair. "Now we're second to California -- and that is one race I'm delighted to be second in."

Schwarzenegger also backed a law requiring that all cars sold in California lower their emissions by nearly a third within a decade -- a move that sparked similar measures in 10 other states, as well as a lawsuit by automakers. He is installing hundreds of hydrogen fueling stations along the state's major highways and is pushing California utilities to produce 20 percent of their electricity from renewable energy by 2010. "He belongs in the sparsely populated top tier of elected officials who are not only taking global warming seriously but devising solutions on a scale that actually matches the problem," says David Hawkins, climate director for the National Resources Defense Council.

Schwarzenegger -- who has been influenced behind the scenes by his wife's cousin, Robert Kennedy Jr. -- appears to have embraced his inner tree hugger on a personal level as well. He has instituted a five-minute limit on showers at his home, downsized the fleet of Hummers that he has been collecting since his "Terminator" days and worked with GM to develop an SUV that runs on hydrogen.

His environmental policies are extremely popular with voters, proving that taking a stand on global warming doesn't hurt a politician at the polls. But Schwarzenegger, 58, characterizes his commitment to climate change as an issue of morality. "In decades past, when we brought this damage to the world around us, we did not know any better -- that was our mistake," he says. "But now we do know better. And if we don't do anything about it, that will be our injustice."

## THE VISIONARY

### **Amory Lovins**



Nobody has a more varied and eccentric set of credentials as a climate crusader than Amory Lovins. A respected physicist and economist who co-founded the Rocky Mountain Institute in 1982, Lovins has published 29 books on energy and the environment, helped the semiconductor industry devise hyper-efficient factories, and advised 18 heads of state, including Bill Clinton and Jimmy Carter. His top priority, however, is transforming the automobile. Thanks to America's love affair with the Hummer, average fuel efficiency is actually worse today than it was in 1980.

"Transportation accounts for 70 percent of America's oil demands and generates a third of all carbon emissions," says Lovins, 57. "It is the most intractable part of the climate problem."

To prod Detroit to think cleaner, Lovins has designed a new kind of SUV: the Revolution. His concept car goes from zero to 60 in 8.3 seconds and gets 114 miles per gallon. Crafted from

superstrength plastics, the Revolution weighs only 1,850 pounds -- less than half as much as a conventional car -- yet has more than five times the crash resistance. That makes it light enough to be driven by hydrogen fuel cells, which lack the oomph to power heavier cars with gas engines.

Lovins, the son of an inventor, attended Harvard and became an Oxford don at 21. He has briefed automakers on the Revolution and is working with some to incorporate more lightweight plastics into their designs. His goal is to push American industry to double its fuel efficiency and find substitutes for oil -- a move that he projects would save \$70 billion a year. "Using energy more efficiently doesn't just address the climate crisis -- it offers an economic bonanza," Lovins says. "Why? Because saving fossil fuel is a lot cheaper than buying it."

## THE GO-BETWEEN

### Jonathan Lash



What do leading Fortune 500 companies such as IBM, General Electric, DuPont and Starbucks have in common? They've all listened to Jonathan Lash. As president of the World Resources Institute, Lash has arguably done more than any other environmentalist to bridge the bitter divide between industry interests and green groups determined to halt global warming. A former top advisor to President Clinton, Lash has waltzed into the boardrooms of the world's biggest polluters, sweet-talked CEOs with his kindly air, and pushed them to not only slash their emissions but also improve their bottom lines. "He is a committed green and a pillar of integrity, but he does what most eco-purists are too prudish to do: get in bed with industry," says Kevin Curtis of the National Environmental Trust. "And he never regrets it in the morning."

A former Peace Corps volunteer and the son of Greenwich Village radicals, Lash considers himself a "pragmatic idealist." He even supports nuclear power as a necessary evil in the fight against climate change -- a position that has drawn the ire of some environmentalists. "Global warming is the most pressing environmental problem humankind has ever faced," he says. "We can't push any potential solution off the table." The challenge of storing radioactive waste, Lash insists, pales in comparison to the floods, violent storms and droughts that are increasing as a result of global warming.

An avid skier and sailor, Lash used to own 13 motorcycles -- but stopped riding after his youngest daughter threatened to get one for herself. A Harvard graduate, he started off as a federal litigator, switching to environmental law after he grew weary of putting people in jail. His hard-bitten pragmatism about climate change is paying off. He helped DuPont cut its climate-warming pollution by 65 percent -- five years ahead of schedule. He worked with Starbucks to obtain 5 percent of the electricity for its North American retail stores from renewable sources, and with IBM to dramatically boost the energy efficiency of its factories and products.

Lash, 60, believes that a growing number of corporate leaders are ready to back a strong federal cap on climate-warming pollution. "It's enough to make even a gloomy environmentalist hopeful," he says. The irony, he notes, is that a president who boasts of his business degree is bucking the industry trend. "Everyone predicted that George Bush was going to be the 'CEO president,'" Lash says. "But if he truly had business savvy, he'd be following the path of these trailblazers."

## THE HYDROGEN PROFESSOR

### Dr. Bragi Árnason



Can a single nation completely eliminate its consumption of oil and coal, meeting all of its fuel needs entirely through hydrogen? That's what Iceland plans to do in the next 40 years, thanks to the pioneering efforts of Bragi Árnason. Known as

"Professor Hydrogen," the University of Iceland scientist has turned his nation into a testing ground for the world's most advanced experiment in renewable energy. Prompted by Árnason's crusade, the university has teamed up with Shell and DaimlerChrysler to wean the country from its annual dependence on 6 million barrels of imported oil, converting every bus, car and boat on the island to hydrogen. "If they can demonstrate that an economy run on renewable energy is viable," says Kert Davies of Greenpeace, "it will be an enormous precedent for the world to follow."

Árnason, who has been pushing his vision of a hydrogen future for nearly 30 years, was long regarded as something of an eccentric. "He was the preacher in the desert -- very few people listened to him," says Thorsteinn Sigfusson, a fellow professor. "Now he is the founding father of hydrogen, well-known all over Iceland."

Following Árnason's blueprint, the city of Reykjavík is transforming its bus fleet into hydrogen vehicles. Árnason concedes that switching the entire country to fuel cells won't be easy: It takes energy to produce hydrogen -- energy that usually comes from the very fossil fuels it's meant to replace. But Iceland already produces nearly all of its electricity from geothermal and hydroelectric power, giving it a clean, homegrown way to separate hydrogen molecules from water. By the time the country is finished implementing Árnason's vision, it will have cut its climate-warming pollution in half.

Árnason, 70, doesn't expect to be around to witness that day -- but his four daughters and eight grandchildren will be. The professor, who rides horses across Iceland for weeks at a time, says his country's future will look much like its past. "When the Vikings settled in Iceland, they used only renewable energy like wind, sun and wood," he notes. "The Icelanders were in the 'first solar-energy civilization' -- and so was the whole world. Now we are finding our way out of the fossil-fuel era, back into the 'second solar-energy civilization.' And, in the end, the same will also be the case for the rest of the world."

## THE PIED PIPER

### **Greg Nickels**



Earlier this year, as the rest of the industrialized world prepared to implement the Kyoto Protocol to reduce global warming, Greg Nickels was frustrated to see the United States sitting on the sidelines. So the Seattle mayor decided that if "the White House isn't going to make it happen from the top down, America's cities can and will make it happen from the ground up."

In February, Nickels introduced the U.S. Mayors Climate Protection Agreement, calling on municipalities to meet Kyoto's targets -- reducing greenhouse gases to below 1990 levels. So far, 187 mayors from major cities in 38 states have signed the agreement, and Nickels hopes to double the number next year. "He's making global warming the focus of the next great grass-roots revolution," says New Mexico Gov. Bill Richardson. "Let's face it -- if we wait around for the feds to act on global warming, nothing is going to happen."

Nickels, 50, got involved in politics when he dropped out of the University of Washington to volunteer for the Young Democrats. Under his initiative, cities from Miami and Atlanta to Denver and Los Angeles are implementing a host of climate-control strategies: adding bike paths and bus routes, planting trees to absorb CO<sub>2</sub>, buying hybrid cruisers for police, pushing local utilities to use more renewable energy, and using energy-efficient light bulbs in street lamps and stoplights. By cutting their emissions, cities have already saved a total of \$700 million -- smacking down Bush's claim that Kyoto would destroy the economy.

When it comes to global warming, cities are both the problem and the solution. They account for 78 percent of all climate-warming emissions -- but they may possess enough purchasing power to actually alter the weather. "We buy car fleets, buses, construction equipment, computer systems, light bulbs," says Nickels, whose city's economy is larger than Ireland's. "If we invest in efficient technologies, that can have huge implications for climate change."

## THE PROFITEER

### Jeff Immelt



As the CEO of General Electric, Jeff Immelt is interested in global warming for only one reason: the bottom line. "Rest assured, I am not tackling climate concerns because it's moral or trendy or good for P.R.," he says. "The biggest driver for me is business potential: It will accelerate economic growth." In May, Immelt announced that G.E. is doubling its annual R&D spending on clean technology to \$1.5 billion -- developing a dizzying array of wind turbines, hybrid-engine trains, state-of-the-art jet engines, zero-emission coal plants and superefficient home appliances. In return, the 49-year-old chairman expects to double revenues from those same inventions, taking in \$20 billion a year by 2010. "Immelt is the tipping point," says Joel Makower of Clean Edge, a leading green-business consulting firm. "Where he goes on climate, industry will follow."

Immelt, whose company is one of the world's biggest polluters, is part of a growing push by industry to cash in on the business opportunities presented by global warming. In October, Wal-Mart unveiled a plan to invest \$500 million annually to make its stores and trucks more energy efficient. Whether such corporate giants follow through on their commitments remains to be seen -- but as companies and consumers search for replacements for fossil fuels, Immelt is banking on GE's ability to supply them with cleaner machines. "We now live in a carbon-constrained world where the amount of CO<sub>2</sub> must be reduced," he says. "GE has built a history on solving the world's toughest problems, and this one is no exception."

Immelt majored in math at Dartmouth, where he was an active frat member and "Animal House" fan, before getting an MBA at Harvard and going to work for G.E. at age 27. As CEO, he has ordered the company to boost its own energy efficiency by 30 percent over the next seven years and to reduce its projected pollution by 40 percent. To the shock of environmental advocates and industry colleagues, he has also called for a federal policy to reduce global warming.

"Industry cannot solve the problems of the world alone," he says. "We need to work in concert with government."

## THE BIG-THREE FOE

### Dan Becker



"Convincing the automotive industry to change their business practices," says Dan Becker, director of the Sierra Club's global warming program, "is like pushing a Suburban up a mountain with your nose." Still, Becker has shouldered that Sisyphean task for the last 16 years, lobbying on Capitol Hill and in Detroit's corporate suites for stricter fuel-economy standards and improved environmental design.

"Every gallon of gas we burn produces 28 pounds of global warming," Becker explains. "And the biggest single step we can take to curb global warming is to make cars go further on their fuel."

Becker has taken that challenge not only to the federal government but also straight into America's garages. When Toyota and Honda introduced their first hybrid models in 2000, the Sierra Club gave both companies its first-ever award for environmental excellence. Then, with the aid of a former Big Three automotive adman, Becker helped launch the Sierra Club's "I Will Evolve" campaign. It aimed at educating and exciting young people about hybrid vehicles and alternative fuel sources, with the conviction that they can set car trends, just as they do for fashion and music.

This summer, after decades of publicly castigating Ford for its atrocious fuel-economy record (Becker calls the Ford Excursion the "Ford Valdez"), the environmentalist offered the automaker a carrot rather than a stick. In return for Ford's pledge to cut its fleet's global warming emissions by 40 percent by the year 2030, Becker said the Sierra Club would publicly support the new Mercury Mariner hybrid SUV.

Although encouraged by the incremental change he has seen, Becker is aware that the relationship between the Sierra Club and the car industry remains a tenuous peace. In 2004, Becker helped steer a law through the California Legislature that establishes the world's strictest emissions standards -- aiming to cut auto exhaust levels by 25 percent by 2016. Canada recently adopted the new standards, and 10 Northeastern and Pacific states are poised to do the same.

The chain reaction has sent shock waves into the auto industry, and last winter the Alliance of Automobile Manufacturers filed suit against the state of California, challenging not only the new standards but also the Legislature's right to set the rules in the first place. "They're gearing up for a big fight," Becker says. "It won't be easy, but I believe we can win. This is the tipping point, and once we get past it, all of America will be able to breathe easier."

## THE DEVELOPER

### **Robert Congel**

Robert Congel wants you to know that Destiny USA is not just another mall. The 800-acre resort, slated to open in his hometown of Syracuse, N.Y., in 2009, will be the largest man-made structure on earth. Designs for the \$20 billion complex include 1,000 shops and restaurants, 80,000 hotel rooms in 12 high-rise towers, a 40,000-seat arena, performance theaters, and a 200-acre climate-controlled recreational biosphere.

But here's the capper: The entire development will be built and operated without burning a single gallon of fossil fuel. Bulldozers, cranes and construction trucks will run on biodiesel. The completed mini-city will be powered by wind turbines, solar panels and hydrogen fuel cells. Food in Destiny USA restaurants will be organically or locally grown. The jolly green mall, Congel explains, is "a gigantic research lab disguised as a resort." As the biggest renewable-energy development in the world, Destiny USA will be a new paradigm for a clean future.

The 70-year-old Congel is famous for malling the Northeast. Twenty-five of his complexes dot the area. The ambitious developer first envisioned Destiny USA as a Mall of America for upstate New York, a tourist attraction to boost the area's economy. Then he visited the D-day beaches of Normandy with his family in 2001. Walking among the graves of tens of thousands of American soldiers, he says, left him with a nagging question: What have you done for this wonderful country that gave you all these blessings? Shortly after returning from Normandy, the self-described "profit-motivated guy" saw the dark side of our oil-drunk world.

"Nobody wants to see these kids coming back from Iraq with their legs shot off or in body bags, just for oil," he says. Congel, who began his career as a "ditch-digging contractor," is confident that projects like Destiny USA can help America wean itself from oil and preserve our standard of

living. After all, he is talking about building a new paradise of consumerism. "I think we can live responsibly and have a better lifestyle than we have now," Congel says.

## THE FUTURIST

### **Martin Hoffert**



To borrow an old phrase, Martin Hoffert sees the world of tomorrow today. "We're using fossil fuels a million times faster than nature is making fossil fuels," he says. "That's a shock to the system." What also may be a shock are the alternative energy sources that Hoffert, a physics professor at New York University, has tapped to combat global warming.

Take, for instance, his notion of wiring the entire planet with thousands of miles of superconductor cables to transmit electricity efficiently. Conceivably, we could create one huge energy grid, where Beijing could buy electricity from Boise. Then there's his plan for suspending turbines in the jet stream to harness wind power. And don't overlook his idea for sparking nuclear fusion by extracting helium-3 from the atmospheres of Jupiter and Neptune, rendering the entire solar system a "Persian Gulf" for planet Earth.

At the moment, Hoffert is focused on space-based solar power: giant orbiting satellites containing huge photovoltaic cells that would capture sunlight and beam it to Earth to generate energy. There is about eight times more sunlight in space than on Earth, he points out, and a solar power satellite -- as opposed to planetside solar panels -- would not be hindered by night or cloudy weather. Earlier this year, Hoffert joined his son Eric (a former Bell Labs scientist) to launch a company called Versatility Energy to explore the applications of space solar technology.

Hoffert first saw unmistakable signs of global warming while studying climate change at the NASA Goddard Institute for Space Studies. His research led him to the conclusion that the increase in levels of carbon in the environment, generated by humans and their machines, was a significant source of the warming.

"In the long run," he says, "if we burn the whole fossil-fuel reserve, we have the potential for an incredibly adverse transformation of the world's ecosystem."

*"Climate Warriors and Heroes" written by Ira Boudway, J.J. Helland, Sarah Karnasiewicz, Aaron Kinney, Amanda Griscom Little, Katharine Mieszkowski and Page Rockwell.*

<http://dir.salon.com/story/news/feature/2005/11/04/heroes/index.html>