

Scientific Climate is Changing as Obama Takes Office

The politics of science, which has been storm-tossed for the past eight years, heads for uncharted waters with the inauguration of Barack Obama. The Bush administration has fought a long battle with the nation's scientific community over funding and philosophy, and great divides have formed over such issues as global warming and stem cell research. Scientists are hopeful that Obama, who has called for increased research spending, will bring a new dawn. But how realistic are their hopes? And can the nation afford to make them a reality?

"My administration will value science. We will make decisions based on the facts, and we understand that facts demand bold action," Obama said at the nomination of Nobel Prize-winning physicist Steven Chu, a climate-change technology advocate, as the next secretary of Energy.

Says environmental scientist Donald Kennedy, Stanford University's president-emeritus: "I think we are seeing some really good first steps, appointment of people that the science community takes seriously, people who value science."

But others sound a note of caution. "The air of anticipation in the nation's laboratories and faculty clubs is not unfounded; the danger is that it will become excessive," writes David Goldston, a former chief of staff with the House Science Committee, in a recent *Nature* magazine. "Scientists are going to have to contain their insatiable appetite for dollars, and their tendency to see politicians as either with them or against them, for the current mood to survive much beyond inauguration."

The most immediate change may be in the White House's attitude toward global warming.

Obama has selected other key advisers who are strong advocates of taking action to address climate change. In addition to Chu, he picked Harvard's John Holdren, a climate and energy expert, to be his science adviser and marine biologist Jane Lubchenco as head of the National Oceanic and Atmospheric Administration.

Obama has pledged to curb heat-trapping "greenhouse" gases by selling industries limited rights to release emissions, creating a "cap and trade" market. Cap and trade markets, such as the existing European Union Emission Trading Scheme, allow firms to buy and sell emission credits while keeping the total amount of emissions under an upper limit, or cap.

For the average household, a cap and trade plan in which credits are sold to polluters — and "dividend" money is returned to taxpayers — would affect power rates, boosting annual household energy costs \$809, a Resources for the Future analysis has found. But the poorest 20% of consumers would gain an average \$145 through tax breaks.

"We must also take a leadership role in designing technologies that allow us to enjoy a growing, prosperous economy while reducing greenhouse gas emissions by 80% below 1990 levels by 2050," Obama pledged during the campaign. His energy plan includes yearly weatherization of 1 million homes, \$7,000 tax credits for fuel-efficient cars and putting 1 million hybrid cars on roads by 2015.

The Bush administration has not capped power-plant emissions, stressing the need for voluntary agreements and technological advances to address climate change. In 2001, President Bush renounced the Kyoto Protocol, an international pact to limit greenhouse gas emissions, on the grounds that it could hurt the U.S. economy and unfairly exempted China.

In his first televised presidential address on Aug. 9, 2001, Bush kick-started a long-running tussle with scientists by limiting funding for such research. The president allied himself with abortion opponents who are against the destruction of embryos required to harvest these stem cells. "While we must devote enormous energy to conquering disease, it is equally important that we pay attention to the moral concerns raised by the new frontier of human embryo stem cell research," he said.

Obama has pledged to reverse Bush's funding limits and said they "have handcuffed our scientists and hindered our ability to compete with other nations." The National Institutes of Health allocated \$655 million this year for stem cell research of all sorts, so human embryonic researchers would compete against other stem cell researchers for money from that pot. Studies also focus on animal and adult stem cells.

For the average American, embryonic stem cell treatments are still years away, say researchers such as George Daley of Children's Hospital in Boston. Nearly 1,000 lines of embryonic stems would become eligible for research funding, Daley says, if Obama follows through on his pledge. Only 22 are now allowed under the Bush rule.

Bush detractors, defenders

"Anything would likely be an improvement for scientists after Bush," says physicist Robert Park of the University of Maryland-College Park, who writes an Internet roundup of science politics widely read by researchers.

In 2004, Nobel-winning scientists campaigned against Bush. The 250,000-member Union of Concerned Scientists and the 131,000-member American Association for the Advancement of Science have criticized administration stands on science questions.

But some, such as current White House science adviser John Marburger, say the controversy has overshadowed actions by the Bush administration that have won favor with conservation groups, such as declaring four oceanic national monuments, which created the world's largest marine reserve. "When you consider the real behavior, as opposed to the symbols, the past eight years have been good for science," Marburger says. He points to the administration's steady support for research funding, including the doubling of the NIH budget to about \$28 billion in 2004. And Marburger notes that the Bush administration started a new research agency at the Department of Homeland Security while also proposing a doubling of money two years ago for basic research.

But right up to the finish line, the administration is battling it out with science and health advocates in high-profile science-related scraps over mercury levels in fish, the endangered status of polar bears and air pollution limits.

"Science enjoys a very high prestige," Marburger says. "That makes it attractive to anybody who wants to sell something. Everyone who wants to sell patent medicine or a cure for climate change will claim science is on their side."

And Bush has other defenders. "I don't think George Bush changed the fundamental relationship between the scientific and political establishments," says Arizona State University's Daniel Sarewitz, author of *Frontiers of Illusion: Science, Technology, and the Politics of Progress*, who remains critical of some administration moves. "Federal support for science is usually a function of the size of the federal discretionary budget, no more, no less," Sarewitz says. "Virtuous noises about protecting the purity of science arise from politics just like everything else."