End of the world, again

Movie: 'The Day After Tomorrow' elicits chuckles from scientists while evoking some serious discussion of the impact of climate change.

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At the lonely edge of Antarctica, a young climatologist wrestles with a coring machine as the ice shelf beneath him suddenly begins to thunder and crack.

Rousted by the noise, his senior colleagues burst from their tent and gape at him as a Rhode Island-sized chunk of the shelf breaks away.

"I didn't do anything!" he shouts. But it's only the harbinger of more deadly, super-sized calamities as global warming - pushed too far by the profligate burning of fossil fuels - gets ugly.

By the end of The Day After Tomorrow, the Northern Hemisphere is locked in a new Ice Age and the $125 million message is delivered with the subtlety of an ice pick: We can't afford to do nothing about global warming.

Director and co-screenwriter Roland Emmerich - who also brought us alien invaders in Independence Day - wants his movie to convince consumers and policymakers to head off the less-sensational droughts and floods, gradually rising seas, storms and ecological dislocations usually forecast with global warming.

"The threat of global climate change is the only problem big enough to force all the countries of the world to stop fighting and work together to save the planet," Emmerich says on the film's Web site.

As he hoped, his over-the-top depiction of calamity has spawned a stormy debate. All sides of the touchy scientific and political issue were firing off e-mails and calling news conferences well before Friday's opening.

Patrick J. Michaels, an environmental scientist at the University of Virginia, senior fellow at the conservative Cato Institute and global warming skeptic, dismissed the movie as "yet another Hollywood attempt to promote policies that Hollywood thinks are important."

On the other side, Moveon.org, a liberal advocacy group, enlisted former Vice President Al Gore to help drive home the movie's message. Ben & Jerry's has offered free ice cream to moviegoers who visit a Natural Resources Defense Council Web site to learn more.

A preview screening at Arundel Mills Mall last week ended with both applause and laughter. Among the laughers was climatologist Gerald M. Stokes, director of the Joint Global Change Research Institute at the University of Maryland.

He was delighted to find the movie's hero was a ruggedly handsome climatologist (Dennis Quaid) who struggled to explain abrupt climate change to skeptical politicians, then dashed off on snowshoes to rescue his son from icebound New York City.

But he laughed at the film's implausible Ice Age, which arrived almost instantaneously - in violation of the laws of thermodynamics.

The oceans store heat, he said, and "you just can't cool it off that fast - it's just not possible." And the movie's other calamities - buzz-saw tornadoes and deadly, grapefruit-sized hailstones - were "all conjured up at once and multiplied by a factor of 10."

On the other hand, scientists say climate change on the order of 20 degrees within the span of a single human life is possible.

"It has happened in the past, and it's going to happen in the future," said Anthony Busalacchi, director of the Earth System Science Center at the University of Maryland and chairman of the National Academy of Science's climate research committee.

The ultimate scientific question posed by the movie is whether the continuing release of huge amounts of carbon dioxide and other heat-trapping "greenhouse" gases can really cause such a disastrous new reality.
At the end of the film, the president of the United States addresses U.S. refugees seeking new lives in Mexico: “For years we lived in the belief that we could continue to consume the Earth's resources without consequences. We were wrong. I was wrong.”

The government had ignored Quaid's warnings that the planet had been warmed to an unexpected "tipping point." Vast glaciers in Greenland suffer a meltdown, and the rush of fresh water stalls the Gulf Stream, along with Atlantic "thermohaline" currents that keep much of the Northern Hemisphere comfortable.

There are kernels of truth here. Scientists agree that average global surface temperatures have crept upward by about 1 degree Fahrenheit during the past century. And computer models demonstrate convincingly that human activity has played the "predominant" role, Busalacchi said.

It's also true that a slowing of the thermohaline currents would cause cooling and economic disruptions.

Ice and sediment cores have revealed that about 12,800 years ago, as the planet was warming up from the last Ice Age, a glacial meltdown disrupted Atlantic circulation with a flood of fresh water, Busalacchi said. The Northern Hemisphere grew bitterly cold, windy and dry for 2,200 years. Then average temperatures jumped 14 degrees Fahrenheit in about a decade.

The lesson some scientists have drawn is that Earth's climate machinery can be forced to a "tipping point." While there are many uncertainties, their concern is that human activity could tip things suddenly into a starkly less benign climate regime.

"The more we push this system by adding heat-trapping pollution to our atmosphere, the bigger the risk of a surprise," said Daniel A. Lashof, chief climate scientist at the Natural Resources Defense Council.

Not everyone buys it.

"If you were going to make a realistic movie about global warming, it would be as exciting as watching paint dry," said Cato's Patrick Michaels.

He sees no evidence in Greenland glaciers or Atlantic currents of an impending climate shift. Global temperatures have been rising, he said, but only at the very lowest edge of the range scientists have predicted. And climate models project they'll climb, slowly, only three-quarters of a degree over the next 50 years.

Most of the effects will be felt far away, Michaels said. "It [warming] tends to take place in the coldest, dry air masses and mainly in the winter - in Siberia and northwestern North America."

The debate might soon shift to Congress, where the bipartisan McCain-Lieberman Climate Stewardship Act is coming before the Senate again after a narrow defeat last fall. The bill would establish limits on greenhouse gas emissions and create a market-based system for trading greenhouse emissions "credits."

Environmental groups and most Democrats are for it. The White House and most Republicans oppose its mandatory emissions limits, saying the costs would hobble the economy.

Busalacchi said the underlying issue is simple: "Can we adopt a no-regrets strategy where we can maintain our way of life, both environmentally and economically? What we're striving to do is have that dialogue."

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