



War Of The Worlds: When Science, Politics Collide

by SCOTT NEUMAN

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Roger Cone is a microbiologist, not a politician. He struggles with a basic truth: For all the scientific acceptance of evolution, many Americans simply don't believe it is factually accurate.

And when Tennessee lawmakers passed a measure allowing teachers to question accepted theories on evolution and climate change in the classroom, Cone acted. He and two other scientists wrote an op-ed in *The Tennessean* last month opposing the bill, which he says "started out as a backdoor attempt to get creationism, or 'intelligent design,' taught in the schools." He fears it will be another black eye for Tennessee — a throwback to the 1925 Scopes "monkey trial," when teacher John T. Scopes was put on trial for lecturing on Charles Darwin's theory of evolution.

Cone is not alone. The Tennessee controversy is only the latest



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example of scientists leaving their labs and universities, and clashing with politicians.

A number of battles have played out at the state level: Indiana, for example, recently tried and failed to join Tennessee, Louisiana and Kentucky in passing a law challenging evolution; other states have passed resolutions slamming the scientific consensus on climate change. And the strain has been heightened by comments on the

GOP presidential campaign trail: Rick Santorum called global warming a "hoax"; Michele Bachmann accused schools of censorship for not allowing the teaching of intelligent design; and Rick Perry accused scientists of manipulating climate data "to keep the money rolling in."

"I don't consider it politics, I just consider it civics," says Cone, chairman of the department of molecular physiology and biophysics at Vanderbilt University in Nashville, Tenn. "I think scientists have a responsibility to be in the public sphere and to try to communicate and make sure that our kids have a great education in science."

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Alan Leshner, head of the American Association for the Advancement of Science and executive publisher of *Science* magazine, says the tension between science and politics is greater than at any time in his scientific career. As a result, he says, scientists have increasingly felt forced to try to set the record straight.

"When scientists see that science is being distorted, they feel compelled to stand up and say, 'No, that's not true,' " Leshner says.

Ken Whitney, a professor of evolutionary ecology at Rice University in Houston, found himself in a similar situation as Cone five years ago. He was among more than 100 biology faculty members from Texas universities who signed an open letter objecting to the Texas Education Agency's "neutrality" on evolution and intelligent design. The agency's science curriculum adviser was subsequently fired.

The Scorecard –
Education, Evolution and

"There are certain issues that have become political, such as climate change and the

Climate Change

States with laws that encourage the questioning of evolution curriculum:

Tennessee, Louisiana: Laws encourage teaching the "scientific strengths and scientific weaknesses" of topics such as "biological evolution, the chemical origins of life, global warming and human cloning."

Kentucky: Law authorizes teachers to teach "the theory of creation as presented in the Bible" and to "read such passages in the Bible as are deemed necessary for instruction on the theory of creation."

States with laws that encourage the questioning of climate change curriculum:

Tennessee and Louisiana: See above.

South Dakota: Law specifically calls for "balanced teaching of global warming in the public schools."

So far this year, similar legislation on evolution and/or climate change has failed in five states:

Missouri, Oklahoma, New Hampshire, Indiana and Alabama.

Source: National Center for Science Education

extinction crisis, in which there's a very clear distinction between what we know scientifically and the claims some politicians make," he says.

Whitney, who prefers not to reveal his political affiliation, says a politician's views on evolution and climate change are, for him, a ballot-box litmus test.

"I would have an extremely hard time voting for someone who actively argued that evolution should not be taught, or alternately that intelligent design is a valid concept that we should be teaching our kids in public school science classes," he says.

Republican state Rep. Bill Dunn, a sponsor of the Tennessee legislation, believes scientists are being alarmist. He says the law enacted last week does nothing to threaten the teaching of evolution or other science subjects.

"You have to sit there and wonder how they can say they know what happened 100 million years ago and yet, right here in the present day and age with a bill right in front of them, they can't understand it," Dunn says.

For scientists, the struggle between their work and the way society views that work is nothing new, says Francesca Grifo, director of the scientific integrity program at the Union of Concerned Scientists. After all, she says, Galileo was forced by the Catholic establishment to renounce his evidence for a sun-centered solar system, and Darwin's ideas have been a political football for more than a century.

"Scientists have been co-mingling their ideological views and their scientific views forever, and somehow figuring out how to be, for example, deeply religious and yet very open and curious and interested in the natural world," Grifo says



Courtesy of Vanderbilt University

That tug of war is compounded by two equal and opposite facts about human nature, she says.

"I think if the science is interesting, you can appreciate it and be fascinated by it, but if it comes into conflict with something that is a deeply held belief, you're prepared to reject the science," Grifo says.



Erik Schelzig/AP

Leshner, of the American Association for the Advancement of Science, agrees. "Often, the public does understand the science, they just don't like the answer," he says. "I am fond of saying that the purpose of science is to tell us about the natural world, whether we like the answer or not."

That's what Brigham Young University geochemist Barry Bickmore found in 2010 when he tried to derail Utah legislation calling man-made climate change a hoax. Among other things, the resolution cited the "climategate" scandal in which stolen emails purportedly showed that climate scientists had manipulated data. The scientists were later cleared by an investigative panel.

Bickmore wrote letters and telephoned lawmakers to kill the bill, but it passed anyway. "They absolutely did not want to hear," he says. "It was all Republicans driving this — every single Republican in the Legislature voted for the thing.

"It wasn't like they were responding to convincing arguments," he adds. "They were just listening to people who were telling them what they wanted to hear, and substituting their authority for the majority of experts."

Bickmore — who is himself a conservative Republican — sees the issue of climate change as a disaster for Republicans who he thinks will ultimately be blamed as the evidence becomes incontrovertible and the damage appears irreversible.

Still, he's in no hurry to change his politics.

"I think Republicans need to hear this from someone in their own

tribe," he says.

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