

claiming that the requirement was unconstitutional and that intelligent design was actually religious creationism being brought into the classroom. The trial ended on 4 November 2005, and four days later, eight of the nine intelligent design advocates on the school board were defeated by Reinking, Rehm, and six others running as the Dover Cares slate. (Rehm's election by less than 100 votes has since been challenged and a special runoff election was set for 3 January.) The court decision, which turns in part on whether intelligent design is religiously based, was expected in late December or early January.

The defeat of the intelligent design majority on the board was widely reported in the national media as a victory for evolution. The National Center for Science Education, the California-based organization that defends the teaching of evolution in public schools, issued a statement under the headline, "Dover voters choose good science at polls."

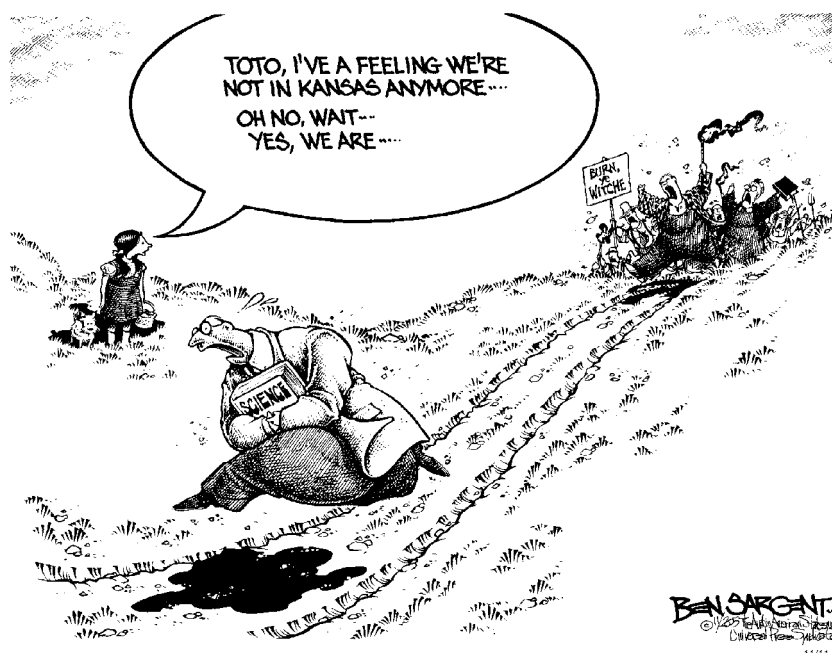
Religious conservatives weren't happy. Pat Robertson, founder of the Christian Broadcasting Network, reacted to the election by telling the "good citizens of Dover" that "if there is a disaster in your area, don't turn to God. You just rejected him from your city."

The new board took office on 5 December with, Reinking said, "the focus of improving the education of our children. We want them to be able to go out and get good jobs with health insurance. Real-world kinds of things."

While things were good for science advocates in Pennsylvania, they were bad in Kansas. There, the Kansas State Board of Education not only approved a revision of the state's science standards to include criticism of Darwinian evolution, but went a step further and redefined science itself.

The old definition termed science the "human activity of seeking natural explanations for what we observe in the world around us." The new definition describes science as "a systematic method of continuing investigation that uses observation, hypothesis testing, measurement, experimentation, logical argument and theory building to lead to more adequate explanations of natural phenomena."

University of Kansas physicist Adrian Melott, a veteran of the long battle between evolution and creationism in Kansas, said the new definition allows for the possibility of a supernatural explanation in science. Melott said he is dismayed by the resurgence of the creationists on the school board, but not surprised.



"We had the same thing happen six years ago," he said, when creationists organized and won the majority of seats on the state board (see *PHYSICS TODAY*, November 1999, page 59). They rewrote the science standards, but before they could go into effect, "people woke up and voted them out. Then they promptly went to sleep again and these people took over the board again in 2004."

University of Kansas cosmologist Hume Feldman said he was particularly troubled by "the idea that science can be redefined by this group, most of whom aren't even educators. Their idea, the way they do this, is that they don't insist that intelligent design be taught in the class, but that it be implied. Their focus is on saying evolution is not a fact."

The board is currently rewriting the science standards to reflect the new definition of science, but that task is being made difficult by the refusal of the National Academy of Sciences (NAS) to allow the use of its copyrighted National Science Education Standards. The American Association for the Advancement of Science

and the National Science Teachers Association have also refused to allow the Kansas board to use their material in writing the new standards.

In an October letter to the Kansas department of education, NAS president Ralph Cicerone wrote, "The revised [Kansas science standard] attempts to portray evolution as a theory in crisis and raises 'controversies' (e.g. the Cambrian explosion) that evolutionary scientists have refuted many times using the available evidence."

Keith Miller, a Kansas State University geologist, said only a couple of the antievolutionist members of the 10-member board have to be defeated in the 2006 election to give the pro-science side a majority, "but it is hard to get people passionate about a school board election." That's made more difficult when creationist advocates equate endorsing science with endorsing atheism, he said. "And we also have to recognize that this is a much longer-term problem. We can't say that if we win the next election, then we don't have to worry any more."

Jim Dawson

Building for Pakistan's Quake Zone

Pervez Hoodbhoy's mission is to erect buildings that can withstand a major earthquake, like the one that killed more than 70 000 people, injured 200 000 more, and made 2.8 million homeless in Afghanistan, Pakistan, and Northern India last October. Working with other physicists from Quaid-e-Azam University in Islamabad, Pakistan, 220 kilome-

ters southwest of the earthquake's epicenter, Hoodbhoy has so far raised \$400 000, largely from US physicists and arms-control analysts. The relief-team physicists are using the money to build private homes, shelters, and schools.

In the urban areas rocked by the 7.6-magnitude quake, 60% of the buildings were made of un-reinforced concrete,



Shelters for earthquake victims are designed and organized by physicists in Pakistan.

Pakistani army is using it for their relief efforts, says Abdul Hameed Nayyar, a retired physicist who is working with Hoodbhoy on the building project.

The biggest problem with these structures is insulation, Nayyar says. "Hay is a fire risk, using

and nearly all of them were destroyed. Costlier brick buildings survived in slightly higher numbers, but even they lacked reinforcements such as concrete bond beams, according to researchers at the earthquake engineering center of the University of Engineering and Technology in Peshawar, Pakistan. Shoddy workmanship and poor materials had made nearly every building in the affected region a death trap, the researchers say.

After the earthquake Hoodbhoy persuaded his university's president to let him use the physics department's trucks to ship supplies to the disaster zone. He and his team deliver materials and plans, and locals build their own homes. "Working through reliable local groups and individuals is fundamental to our efforts," Hoodbhoy says. The team's regular visits to monitor progress, he adds, "are crucial for ensuring that the most deserving get the materials we have obtained for them."

The cost of a sturdy house designed to better survive an earthquake is \$1000, Hoodbhoy says. But demand is making materials scarce and driving prices up, and the onset of winter is causing delays. At sub-zero temperatures, Hoodbhoy says, "cement does not set well, or at all. The urgent thing now is to protect the maximum number of people from snow, rain, and biting cold winds."

"If we build primitive temporary shelters constructed from corrugated metal sheets and nailed into wooden frames, we can reuse the materials in the spring for permanent houses," Hoodbhoy continues. "Each shelter costs \$300, minus the frame wood, and we hope to build several hundred with the money at our disposal." Locals scavenge the wood from collapsed buildings and surrounding forests. More than 132 shelters, each big enough to house six to eight people, have been built already. The shelter design is proving so popular that the

nets and mud has been abandoned as locals think the mud would rust the iron, so they suggest using a layer of wooden planks." This would increase the shelter cost by about 20%, he adds, but would definitely save the people from bitter cold.

"We can't handle any more money for homes," says Hoodbhoy. "The need for spot allocation and inspection requires us to be there physically. Otherwise massive pilferage is certain." Instead, he is contemplating the relief team's next step: rebuilding schools. Nearly 16 000 schools were destroyed in the earthquake and those that have reopened are holding classes outside.

Paul Guinnessy

Democrats Offer Innovation Plan

Democrats in the US House of Representatives unveiled an "innovation agenda" in mid-November intended to maintain US leadership in science and technology through a blend of scholarships, a doubling of federal research funding, universal broadband internet access, and greater steps toward using alternative energy. The agenda, announced at a press conference by House Democratic Leader Nancy Pelosi (CA), closely mirrors the recommendations of a recent National Academy of Sciences report that warned about the waning of federal support for science research and education.

Pelosi said the US blueprint for creating powerful public-private partnerships and investing in "long-term, high-risk ideas" has made "the US the breeding ground for the innovations and inventions that increased our prosperity, enhanced our lives, and protected and advanced our freedoms." But, she said, the US has departed from that blueprint while other countries are copying it by "investing heavily in improving their ed-

ucational systems, and establishing world-class universities especially focused on science and technology." Federal support of basic research peaked in 1987, she said, "and has been flat or falling ever since."

Although the National Academy of Sciences report received bipartisan praise when it was released last October, the Democrats' innovation agenda quickly brought criticism from Republicans. Senator John Ensign (R-NV), chair of the Senate Republican high-tech task force, issued a statement saying, "Republicans have clearly led the way in the pursuit of a tech agenda," and called the Democrats' record on high-tech issues "dismal."

Rep. Rush Holt (D-NJ), one of two physicists in Congress, said the innovation agenda was "in process" well before the National Academies report came out and is a reflection of about a dozen recent reports that warn about the weakening of US science and technology leadership. "This isn't just a list of recommendations," Holt said. "This is a commitment."

The agenda doesn't have cost figures attached to it, but the National Academies report estimated the cost of implementing a similar set of recommendations at between \$500 million and \$5 billion. When asked about the cost of the Democratic proposal, Pelosi would say only, "We must not contribute to the debt. This is a pay-as-you-go plan."

Speaker of the House Dennis Hastert (R-IL) said the Democrats' science and technology plan would lead to "higher taxation, litigation, and regulation." Both Hastert and Ensign said Democratic opposition to "junk lawsuit" reforms shows that they aren't serious about helping high-tech companies. Many Republicans have tied general support of science to legislation on class-action lawsuit reform and other legislative bills they say are needed to free the high-tech industry of government regulations.

Jim Dawson

Physicists Protest US Nuclear Policy

Do not undermine the Nuclear Non-Proliferation Treaty (NPT). That's the message two physics professors at the University of California, San Diego, are trying to spread with a web-based petition they launched last fall.

Kim Griest, an astrophysicist, and Jorge Hirsch, a condensed matter physicist, started the petition after reading newspaper accounts of changes in US nuclear policy. The policy is re-