

states that strongly opposed paying the perceived high price for limiting acid rain. Other members, though, had objected to the claim of the coal-producing states that the costs of reducing emissions should be spread to all states in proportion to their use of coal, mostly to generate electricity. Meanwhile, estimates of the total cost of solving the acid rain problem varied from high to very high.

The impasse was broken by an environmental group that proposed a plan for a "cap and trade" system; through that system, the federal government would issue permits to all emitters for the amount they had emitted the previous year. Then, the permitted amounts would be decreased annually until total emissions reached a level adequate to prevent future harm. Moreover, permits could be bought and sold: Emitters with simple means of decreasing emissions could sell their permits to companies that have difficulty making cuts. Thus the marketplace, and not Congress, would decide both who would pay the costs and how much those costs would be. Relieved of the problem, Congress soon passed the legislation, and President George H. W. Bush soon signed it into law.

The plan got Congress off the hook and put most of the reductions in the hands of those who could make them least expensively. So the total cost turned out to be far below earlier estimates, and the reductions occurred faster than anticipated.

The current Bush administration apparently ignored those lessons as it set out to spend lots of taxpayer money to answer climate questions that have been studied for almost 200 years. Certainly there is much to learn as climate research continues worldwide. But it appears that, again, no one asked the right question: What is holding up political progress toward reducing the annual increase in climate change? Instead, policymakers sought to address imagined deficiencies in the basic science.

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'Physics of Whatever' Relevant but Not Always Accurate

Robert L. Dixon's letter (PHYSICS TODAY, October 2003, page 15) de-

scribing the growth of publications and Web sites with the nominal title "physics of ———" aims at the wrong target. His thesis that "[nobody] really cares about this kind of 'physics of' stuff" is belied by the enormous popularity of, for example, *The Physics of Baseball* by Robert Adair (Perennial, 2002) and *The Physics of Golf* by my colleague Ted Jorgensen (Springer and AIP Press, 1999).

The serious problem that Dixon doesn't address is that many of these Web sites contain wrong or at least poorly worded physics. An Internet search for topics related to the physics of football, a topic in which I have a passing interest, yields such useful information as "when the football is thrown and a spin is put on it, centrifugal force keeps the ball aligned during its flight," and "momentum can't be lost; it can only be transferred. If you catch a football, then the football's momentum goes through you and into the earth (or else you fall down)."

Physicists have an obligation to teach others about physics. One good way to do this is to connect physics with things that people actually care about. But it is important to make sure that the science is right.

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When Lord Rayleigh wrote his paper "On the Irregular Flight of a Tennis Ball" (*Messenger of Mathematics*, volume 7, page 14, 1877) and J. J. Thomson wrote "The Dynamics of a Golf Ball" (*Nature*, volume 85, page 2147, 1910), were they trying to make physics relevant so as to increase the attendance in an introductory course they were teaching?

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Ethical Dilemmas of US Antiterrorism Policy

I hope that Charles McQueary does not mean to suggest that the research he mentions is without moral and ethical problems (see the McQueary interview, PHYSICS TODAY, July 2003, page 32). Like many who recruit physicists for national security, he ignores the bigger picture. For instance, McQueary says that he

would use university researchers to develop sociological profiles on terrorists. Should we ignore that this technology could simply be a sophisticated version of racial profiling, which could lead to the arrest of innocent people? Should we ignore the chance that this technology could be used to violate citizens' civil rights?

Of course the defense of innocent people is important, but McQueary should be honest in his assessment of both the exciting challenges and the possible destructive consequences of defense work.

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Another Side to Roots of Terrorism

Martin Ebert's hypothesis (PHYSICS TODAY, September 2003, page 16) that "the precedents of terrorism are . . . inequality, social suffering, intolerance, and lack of understanding" is not supported by the facts. People become terrorists not because of our intolerance, but because of their intolerance; not because of our lack of understanding, but because of their lack of understanding; not because of suffering inflicted on them, but because of their desire to inflict suffering on others.

There is another reason why I find Ebert's remarks offensive. There exist perhaps a billion or more people throughout the world who truly are victims of terrible deprivation—and have not resorted to terrorism. Let's not commit calumny on these long-suffering people by laying the responsibility for creating terrorists on anyone other than the terrorists themselves and the societies that birth them. We need to help others because it is the right thing to do—not because it will relieve us of the terrorists. It won't.

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Private Funding Could Cut Red Tape for Homestake

Recent articles in PHYSICS TODAY (February 2004, page 32; August 2003, page 24) describe the continuing efforts of neutrino physicists to