

# THIS WEEK

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## Who calls the shots?

*US law-makers need to encourage research on firearms-related violence so that gun laws can be based on facts rather than ideology.*

The shooting spree in a Colorado cinema last month that killed 12 people and injured 58 has provoked many questions and much soul-searching. Some reports have even suggested that because the perpetrator, James Holmes, was until just weeks earlier a graduate student supported by a US National Institutes of Health (NIH) training grant, the biomedical agency is somehow implicated.

The insinuation is ludicrous, but the attention it received speaks volumes about the political reluctance in the United States to address the laws that made it possible for Holmes to obtain his arsenal of firearms. In this climate, discussions of the multiple murders sounded all too often like descriptions of the random and inevitable carnage caused by a tornado or an earthquake.

Natural disasters, truly unavoidable events, can be combated with science. The US Geological Survey, for instance, has some 250 employees dedicated to the assessment of earthquake hazards.

There is no such US government effort for research on firearms — the National Rifle Association has helped see to that. The lobby group that represents gun owners began to squash scientific efforts in 1996, when, using proxies in Congress, it shut down a fledgling, US\$2.6-million gun-violence research effort by the US Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia.

Among other things, that work revealed that people living in homes where there was a gun faced a 2.7-fold greater risk of homicide (A. L. Kellermann *et al.* *N. Engl. J. Med.* **329**, 1084–1091; 1993) and a 4.8-fold greater risk of suicide (A. L. Kellermann *et al.* *N. Engl. J. Med.* **327**, 467–472; 1992). Ever since, Congress has included in annual spending laws the stipulation that none of the CDC's injury-prevention

funds “may be used to advocate or promote gun control”.

The gun lobby's reach grew still wider this year, when the ban was extended to all agencies in the Department of Health and Human Services, including, most prominently, the NIH. The agency, to its credit, has chosen to read the ban narrowly. “The NIH supports research and public health education programs on injury prevention and violence reduction,” it said in a statement. “This effort includes programs related to firearm violence, which is a public health concern.”

Even so, the work that the NIH does support in this arena is limited. A search of the agency's grant database for the word ‘firearm’ returns just five projects, funded at a combined total of \$2.6 million in 2011. One of these looks at the relationship between acute alcohol use and different methods of suicide, including the use of firearms. Another aims to create a training and education resource for families of children with traumatic brain injury.

Like any sound public policy, rational decisions on firearms cannot be born in a scientific vacuum. There is a desperate need for peer-reviewed research to address even basic questions, such as whether there is a way to use the registration and licensing of gun owners to reduce the associated fatalities — which totalled 31,347 in the United States in 2009, the most recent year for which data are available. It is incumbent on scientists and the public to insist to their law-makers that research on such rudimentary questions is not sacrificed on the altar of politics. If the politicians do not hear this message forcefully and regularly, the chilling effect of special interests on research into charged but crucial questions in any number of policy areas will only grow. ■

## Take a look

*Enjoy Curiosity on Mars. We may not see its like again.*

By now, many will have seen the image of Curiosity's descent taken by the Mars Reconnaissance Orbiter (MRO), which captured the rover one minute before its successful landing on Mars' Gale Crater earlier this week. One robot taking a picture of another robot. Above another planet.

Four years ago, the MRO snapped another lander, Phoenix, in a similar situation minutes before it touched down on the red planet. But the two missions are very different. Phoenix got to Mars on a modest US\$420-million budget and lasted only five months. Curiosity, at a cost of \$2.5 billion, has a rugged design and a nuclear power source that should mean its 400 scientists will be gainfully employed for years

to come (see page 137). The rovers' objectives are vastly different, too. Phoenix was stuck scraping for ice in one completely flat spot. Curiosity will climb its 5.5-kilometre-high target — the mountain Aeolis Mons, also known as Mount Sharp — and attempt to unpack the hundreds of millions of years of Martian geological history it contains.

There is something that binds Phoenix, Curiosity and the MRO together besides photography. Since NASA revamped its Mars programme in 2000, it has made a concerted effort to launch regular probes to a Solar System neighbour that is a mere nine-month rocket ride away. Four years before Phoenix, NASA landed the Spirit and Opportunity rovers there. And four years before the 2005 MRO, the agency had launched the Odyssey orbiter. Curiosity and its landing system represent the culmination of technological expertise and lines of scientific enquiry that have been nurtured for more than a decade.

Will the agency get the chance to use these powerful capabilities again? That depends largely on the whims of politicians and the economy, which are both conspiring to dim the future of NASA's Mars programme. It is a good thing that Curiosity could survive for a decade, because it is unlikely that the world will see anything like it for a while. ■