

Politicize me

Barack Obama is finding that sometimes politics needs to put science in its place, says **Daniel Sarewitz**.

In his inaugural address, US President Barack Obama promised to restore science to its “rightful place”. How is his administration doing so far? It has failed to strengthen protections for endangered species, appointed officials with long records of suppressing politically inconvenient science, ignored new evidence-based recommendations for breast-cancer screening, failed to remove all restrictions from embryonic stem-cell science and ignored decades of research in a politically motivated effort to prevent nuclear waste from being stored at Yucca Mountain, Nevada.

Of course, during the regime of Republican president George W. Bush, opposition Democrats got surprisingly good political mileage from accusations that science and scientists were routinely suppressed, flouted or abused on issues ranging from stem cells to air pollution. But the political resonance of this subject has mostly died down during the Obama administration. Could this be because less than 10% of US scientists are Republicans? In any case, the fact is that Obama, like Bush before him, is not sacrificing his political agenda on the altar of science.

And why should he? When a problem is complex and the stakes are high, the relevant science can never be settled to the satisfaction of all parties — it is always going to be politicized. This is not because all politicians are shameless toadies to special interests, but because science is the wrong tool for solving political disputes.

Fuelling controversy

The saga of high-level nuclear-waste disposal in the United States illustrates this fact with uncomfortable clarity. Starting in the early 1980s, the US Department of Energy (DOE) began evaluating sites for use as a waste repository. In 1987, Congress narrowed the assessment to a single location: Yucca Mountain. Although the scientific case for this site was fairly strong, the political case was stronger. Of the states being considered for repositories, Nevada, with the smallest population and weakest congressional delegation, provided the political path of least resistance. Science would show the way along that path.

And so, over nearly 20 years, the DOE spent more than US\$10 billion assessing the long-term safety of using the site. The state of Nevada led the opposition, mobilizing its own scientific experts to argue that the hydrological



and tectonic setting of Yucca Mountain is too uncertain to guarantee safety over the coming millennia. Nonetheless, the Bush administration decided that almost two decades of government-sponsored research sufficiently demonstrated the site's adequacy. In June 2008, it submitted an 8,600-page application to the Nuclear Regulatory Commission (NRC) for a licence to construct the repository.

In March this year, the Obama administration submitted a motion to the NRC to withdraw the still-pending licence application, thus reversing the Bush policy and contravening the scientific assessments of the DOE. What had changed? Not the science, but the politics. Since 2007, the Senate majority leader has been Democrat Harry Reid of Nevada, who is staunchly opposed to the Yucca Mountain repository. Obama pledged during his election campaign to close down the Yucca Mountain programme — a pledge he must keep if he is to have Reid's continued backing for the administration's ambitious political agenda.

The saga is not over. On 29 June, the NRC's licensing board denied the motion to withdraw the application. Five groups, including several states and localities that store nuclear waste that they'd like to get rid of, are formally opposing the administration's effort to shut the programme down. Now the NRC must decide whether to uphold the board's denial — thus keeping Yucca Mountain alive as a potential repository — or allow the government to abandon the site permanently.

The Swedish message

Can science and politics ever work together to resolve complex problems such as nuclear-waste disposal? Consider the approach pursued in Sweden for the past 30 or so years. As in the United States, multiple sites were selected for technical evaluation. But rather than quickly converging on a single site, the possibilities were

narrowed gradually, while candidate municipalities were closely involved in the selection process — and given veto power. Three towns were chosen as finalists in 2000; one exercised its veto, and the winner was announced in 2009, with the two final towns sharing a \$240 million reward (three-quarters of which is going to the loser).

This imaginative process kept the politics ahead of the science. Candidate municipalities, which valued the economic benefits of hosting the site above the risks that it might present, were self-selecting and had an interest in making the best scientific case for a safe repository. The process was iterative and incremental, with public support sought along the way through inclusive politics rather than by trying to overcome opposition with a mounting body of science.

In Sweden, science that was good enough to support the site selection process emerged relatively smoothly from this political arrangement. In the United States, a failed political approach led, instead, to science that fuelled controversy and gridlock. Successful science — science that can support public goals — is not just a matter of how sophisticated the models are or how well the probabilities are communicated to the public, but of the political context in which knowledge is generated and used. In social-science jargon, the Swedish science was ‘socially robust’; the US science was not. The challenge is not to avoid politicizing science (which is impossible) but to politicize it wisely.

The decade-long brouhaha over the politicization of science in the United States reflects an incorrigible cultural delusion: that if science were left alone to speak truth to power, it would exercise a purifying magic on the miasma of politics. The delusion serves politicians, who are free to hand over difficult choices to scientists, as they did with Yucca Mountain — and later with climate change. It also serves scientists, who get to maintain their position of high cultural authority and do a lot of research in the process.

Who will be courageous enough to step away from this pathological codependence? Perhaps Obama's unapologetic decision to turn his back on \$10 billion of nuclear-waste disposal research is the best thing for both politics and science. Perhaps he is discovering science's ‘rightful place’ after all. ■

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This is Daniel Sarewitz's last regular column. See go.nature.com/ILx8PC for past columns.