

# Keeping religion out of science class

President Bush's endorsement of 'intelligent design' has sparked a national debate in which scientists are well positioned to prevail.

Comments made last week by President George W. Bush have encouraged advocates of 'intelligent design', the idea that a hidden hand must lie somewhere behind the evolution of life. But the scientific community has responded energetically and effectively to Bush's statements. If researchers persevere, they can win this argument and keep religion out of the biology classroom.

In an informal 90-minute interview with newspaper reporters from his home state of Texas on 1 August, Bush talked at length about everything from abortion to illegal immigration. When asked about his view of intelligent design, the president was hesitant at first, re-iterating that, as governor of Texas, he had supported the right of local school boards to choose what is taught in the classroom. Prodded further to give an opinion, Bush said: "I'm not suggesting — you're asking me whether or not people ought to be exposed to different ideas, and the answer is yes."

A great deal has been made of the president's off-the-cuff endorsement of intelligent design. But it is worth noting the hesitancy of his comments: he didn't even mention intelligent design by name. Bush is a self-proclaimed evangelical Christian, and religious conservatives are often credited with helping him win last year's election. But he knows perfectly well that the introduction of religious ideas into science class is a potentially explosive issue in US politics — and not necessarily one that works in his favour.

The teaching of creationism in schools has been energetically advocated in parts of the United States for decades, but it has rarely help politicians to win elections, even in the heartland. Take Kansas, whose school board sought in 1999 to restrict the teaching of evolution in public schools. A vocal outcry by scientists, business leaders and others soon led to the electoral defeat of the board members in question and a repeal of the restrictions (see *Nature* 406, 552; 2000).

Those Republicans who anticipate an encounter with the electorate are therefore cautious about the open embrace of intelligent

design. Senator Rick Santorum (Republican, Pennsylvania), for example, is a Catholic and one of the most conservative members of the Senate, who faces a tough re-election battle next year. Just after Bush's remarks, he forthrightly declared: "I'm not comfortable with intelligent design being taught in the science classroom." Perhaps Santorum judges, wisely, that otherwise-conservative voters in the suburbs of Philadelphia and Pittsburgh would draw the line at backing a senator who wants to teach creationism to little Brad and Britney in biology class.

Even hard-line creationists are aware of the political price of appearing to be against science in a nation that puts so much stock in it. Part of the idea of intelligent design, of course, is subterfuge, an attempt to introduce religion under the guise of science. In Kansas, after the last row died down, a more conservative school board was elected once again, and now may approve the inclusion of intelligent design in its school curriculum. The progress of this effort — which scientists have once again made a concerted effort to oppose — will be a bellwether for the rest of the country.

As we report on page 761, scientific leaders have responded effectively to Bush's ill-advised comments. Researchers from a range of disciplines have spoken out vigorously, making it clear that the president's apparent willingness to allow intelligent design into the classroom is at odds with America's pressing need to improve science education. They should continue to speak out in all available forums.

This argument has reverberated in US politics since at least 1925, when John Scopes, a high-school teacher in Dayton, Tennessee, was convicted and fined for teaching evolution. The fight will go on — but science and reason can ultimately win. ■

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## Life in the old doc yet

The need to bring new blood into science shouldn't force out talented older researchers prematurely.

There is a common misperception that genius and exceptional scientific achievement are the preserve of the young. A News Feature on page 772 of this issue shows the limitations of this view: some scientists are performing creative and groundbreaking work into their 70s and beyond. Yet many of them feel frustrated at what they see as unjustified obstacles in their path — including, in some countries, mandatory retirement for university professors.

Mandatory retirement policies were generally introduced, along

with decent pension provisions, to ensure dignity and leisure for the old, while opening up job opportunities for the young. But there is a big difference between being forced to work to avoid penury and doing so because you love what you do. Most scientists' work is far more than just a job — it is a vocation, pursued with a passion that cannot be switched off overnight.

And nor should it be. Carl Friedrich Gauss may have surprised his school-teacher at the age of seven when he worked out the factorial of 100 in his head. But although the German mathematician made many of his important discoveries before he was 20, he continued to make progress in a wide variety of fields into his seventies. Charles Darwin wrote two of his best books, *The Descent of Man* and *The Expression of the Emotions in Man and Animals*, in his sixties.

Science needs the energy and freshness of vision that youth can