

# Boosting competition?

A recently passed bill in the US could help raise the profile of the physical sciences.

In the fractious American political system, consensus is rare and cooperation rarer still. With the presidential election looming next year, politicians are deadlocked over key issues such as healthcare, immigration and the ongoing Iraq conflict.

But earlier this summer, the now Democratic congress and the Republican White House of George W. Bush made an unusually collegial show of bipartisanship. In the span of a week, congress passed and the president signed a bill that would promote support for the long-flagging physical sciences. Whether the legislation will translate into real funding gains for the agencies, and the scientists who use them, remains to be seen, but it is nevertheless worth taking a look at.

The bill is named in typical Washington parlance as the America Creating Opportunities To Meaningfully Promote Excellence in Technology, Education, and Science Act, or the America COMPETES Act, for short<sup>1</sup>. It is motivated in large part by a 2005 National Research Council report warning that America's global scientific competitiveness is in decline<sup>2</sup>.

The bill's swift passage came in part because all sides could claim a piece of it. The bill closely resembles a recent presidential initiative by recommending that the US\$4.5 billion National Science Foundation (NSF) and \$3.8 billion energy department science office get on a path to double their budget over seven years, and that the roughly \$400 million National Institute of Standards and Technology core budget do so over a decade<sup>3</sup>. Meanwhile, congressional Democrats inserted a lengthy list of education programmes and technology initiatives designed to improve science education and promote industrial investment.

Industrial and academic lobbyists throughout Washington politely



President Bush and key members of congress pass a law encouraging investment in physics.

applauded the act's passage, but privately many express mild cynicism about what it might actually achieve. It creates a list of programmes and departments that will need to be funded within the agencies whose budgets it seeks to grow. Most controversially, the bill authorizes up to \$300 million for an Advanced Research Projects Administration-Energy (ARPA-E) similar to the Defense Advanced Research Projects Administration (DARPA) that does high-risk research for the Pentagon. The idea is to fund speculative energy research of the sort that, should it work, would rid America's need for foreign oil. But critics point out that, unlike DARPA, the new ARPA-E would need to develop competitive, commercial products — no tall order for a government agency. Adding to the angst is the fact that ARPA-E will be placed outside the authority of the energy department's undersecretary for science, creating a new entity that may compete for funding with the science directorate.

But for the most politically battle-hardened of Washington's science advocates, a more important problem looms. The legislation is "authorising", meaning that it only recommends

funding increases. In 2002, a similar piece of legislation passed for the NSF recommended doubling the agency's budget over five years, but funding never materialized because the separate congressional committee responsible for budgets had other priorities. This year, the situation is still more dispiriting: Congress is fighting Bush to get \$23 billion in additional spending — including money for the aforementioned agencies. The deadlock means that new funding is unlikely to be approved before the New Year, and even then, there's no telling what the agency will end up looking like.

And that raises another unpleasant spectre: If the big increases don't come, how will the agencies fund the new technology and education programmes the bill also mandates? Although it seems likely that congress will do its best to shield the basic research monies from any cuts, it is possible that any boost the agencies receive will end up going to congressionally required projects, such as ARPA-E, rather than basic science.

Still, the act is undoubtedly good news. At a time when the US budget process seems at a standstill, the passage of the bill is an important endorsement of the physical sciences. And the increases, even if they are less than what's authorized, will be welcome, especially when many government agencies are finding their budgets flat or slightly declining. Like any good political solution, the America COMPETES Act has its share of problems but the goodwill it has generated both in Congress and the White House will undoubtedly serve the scientific community well.

## References

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