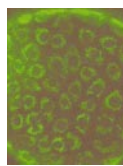




**Hubble trouble**  
NASA contemplates  
the demise of its  
space telescope  
p603



**Matter transfer**  
Could sperm offer  
a cheap route to  
transgenic animals?  
p604



**Paper jam**  
Europe's science  
funding system leaves  
researchers fuming  
p605



**Cash cows**  
Australia secures  
stake in bovine  
genome sequence  
p606

# Terrorist betting leaves defence agency fighting for autonomy

**Geoff Brumfiel, Washington**

Chemical attack or assassination — which would you bet on as most likely to happen?

The question is now academic, following the cancellation of a US defence project to run an online futures market on terrorist acts. But the fallout from the scheme is threatening to cost the Defense Advanced Research Projects Agency (DARPA) its prized independence.

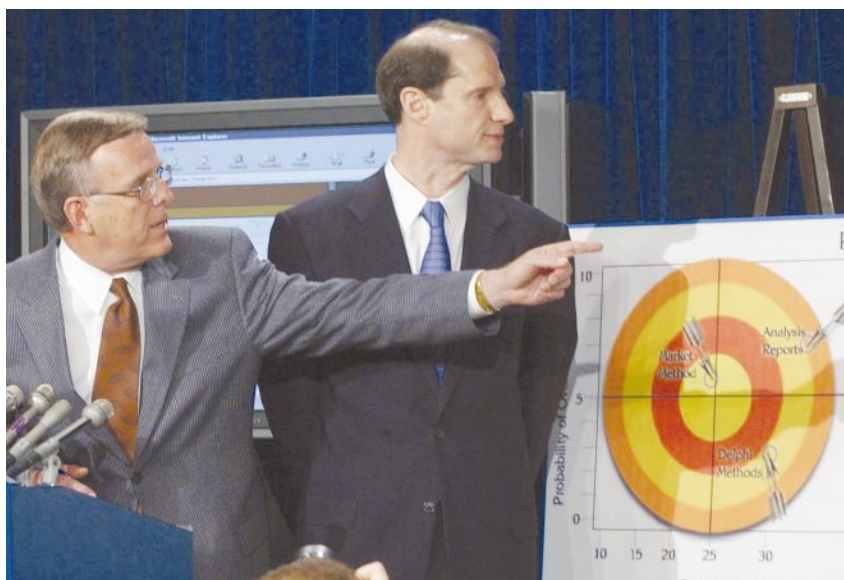
The project, known as FutureMAP (Futures Markets Applied to Prediction), was set up by DARPA to see whether trading on a futures market could help to predict the likelihood of a terrorist act being committed. Investors would have been able to bet on questions such as: "Will terrorists attack Israel with bioweapons next year?"

But the scheme sparked a public outcry and on 29 July, defence secretary Donald Rumsfeld pulled the plug on it. Now lawmakers and the Pentagon's top brass are considering whether DARPA's independent approach to research should be reined in.

DARPA, the research arm of the Department of Defense, spends more than US\$3 billion each year on unconventional research ranging from quantum computing to biomimetics. Historically, it has enjoyed relative freedom from the defence department's bureaucracy, and its innovation is widely acknowledged. Clipping its wings "would be a disaster for the country", warns James Harris, an electrical engineer at Stanford University in California.

Law-makers blasted DARPA for funding FutureMAP — Senators Byron Dorgan (Democrat, North Dakota) and Ron Wyden (Democrat, Oregon) branded the scheme as unethical at a press conference on 28 July. Republicans joined the Democrats' call for a swift end to the research, and within two days the programme was terminated, and the man responsible for it, John Poindexter, had offered his resignation. Poindexter, who is director of DARPA's Information Awareness Office, is no stranger to controversy — he was President Ronald Reagan's national security adviser during the Iran-Contra scandal.

This is not the first time that DARPA has been lambasted for poor taste over one of



**All bets are off:** Byron Dorgan (left) and Ron Wyden lambast DARPA's terrorist futures market.

Poindexter's projects. Last autumn, the Total Information Awareness programme to search for patterns in electronic databases of public and private records was heavily criticized by civil libertarians and the media. The Senate axed funding for that programme earlier last month.

But not all of DARPA's programmes are problematic. Many credit the agency with developing the Internet, and it has long been a favourite among bright researchers with unconventional ideas. "Compared with agencies such as the National Science Foundation, DARPA takes much bigger chances," says Harris, who has DARPA funding to develop a thumbnail-sized fluorometer that can detect chemical and biological agents. DARPA's generous funding and goal-oriented programmes allow researchers to "do more than just incremental science", adds Charles Lieber, a nanotechnology researcher at Harvard University.

At times the agency's free-thinking programmes have pushed technology ahead, despite initial resistance from authorities. In the late 1970s, for example, DARPA researchers began work on unmanned aerial vehicles

against the wishes of the US Air Force. When the first unmanned vehicle was ready for testing in 1998, "the undersecretary of defence forced the Air Force to accept it", recalls Frank Fernandez, an engineer at the Stevens Institute of Technology in Hoboken New Jersey, who headed DARPA from 1998 to 2001.

But the public questions of ethics and civil liberties surrounding the current projects are generating far more controversy than previous debates, comments former DARPA project manager Randy Katz, a computer scientist at the University of California, Berkeley.

Members of Congress are now calling for a closer look at DARPA's programmes. The Senate committee overseeing the agency is pushing for a new external panel, appointed by the defence secretary, to help set DARPA's research agenda. "This latest episode is very damaging," says one senate staff member. DARPA director Tony Tether did not respond to *Nature's* request for an interview.

The fresh scrutiny worries many advocates of the agency's occasionally fringe research programmes. "If they start clamping down on DARPA, they will kill it," warns Fernandez. ■