

## Free access to British scientific research within two years

Radical shakeup of academic publishing will allow papers to be put online and be accessed by universities, firms and individuals

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Professor Dame Janet Finch's recommendations on open access publishing prompted the government's decision.

The government is to unveil controversial plans to make publicly funded scientific research immediately available for anyone to read for free by 2014, in the most radical shakeup of academic publishing since the invention of the internet.

Under the scheme, research papers that describe work paid for by the British taxpayer will be free online for universities, companies and individuals to use for any purpose, wherever they are in the world.

In an interview with the Guardian before Monday's announcement David Willetts, the universities and science minister, said he expected a full transformation to the open approach over the next two years.

The move reflects a groundswell of support for "open access" publishing among academics who have long protested that journal publishers make large profits by locking research behind online paywalls. "If the taxpayer has paid for this research to happen, that work shouldn't be put behind a paywall before a British citizen can read it," Willetts said.

"This will take time to build up, but within a couple of years we should see this fully feeding through."

He said he thought there would be "massive" economic benefits to making research open to everyone.

Though many academics will welcome the announcement, some scientists contacted by the Guardian were dismayed that the cost of the transition, which could reach £50m a year, must be covered by the existing science budget and that no new money would be found to fund the process. That could lead to less research and fewer valuable papers being published.

British universities now pay around £200m a year in subscription fees to journal publishers, but under the new scheme, authors will pay "article processing charges" (APCs) to have their papers peer reviewed, edited and made freely available online. The typical APC is around £2,000 per article.

Tensions between academics and the larger publishing companies have risen steeply in recent months as researchers have balked at journal subscription charges their libraries were asked to pay.

More than 12,000 academics have boycotted the Dutch publisher Elsevier, in part of a broader campaign against the industry that has been called the "academic spring".

The government's decision is outlined in a formal response to recommendations made in a major report into open access publishing led by Professor Dame Janet Finch, a sociologist at Manchester University. Willetts said the government accepted all the proposals, except for a specific point on VAT that was under consideration at the Treasury.

Further impetus to open access is expected in coming days or weeks when the Higher Education Funding Council for England emphasises the need for research articles to be freely available when they are submitted for the Research Excellence Framework, which is used to determine how much research funding universities receive.

The Finch report strongly recommended so-called "gold" open access, which ensures the financial security of the journal publishers by essentially swapping their revenue from library budgets to science budgets. One alternative favoured by many academics, called "green" open access, allows researchers to make their papers freely available online after they have been accepted by journals. It is likely this would be fatal for publishers and also Britain's learned societies, which survive through selling journal subscriptions.

"There is a genuine value in academic publishing which has to be reflected and we think that is the case for gold open access, which includes APCs," Willetts told the Guardian. "There is a transitional cost to go through, but it's overall of benefit to our research community and there's general acceptance it's the right thing to do.

"We accept that some of this cost will fall on the ring-fenced science budget, which is £4.6bn. In Finch's highest estimation that will be 1% of the science budget going to pay for gold open access, at least before we get to a new steady state, when we hope competition will bring down author charges and universities will make savings as they don't have to pay so much in journal subscriptions," he added.

"The real economic impact is we are throwing open, to academics, researchers, businesses and lay people, all the high quality research that is publicly funded. I think there's a massive net economic benefit here way beyond any £50m from the science budget," Willetts said.

In making such a concerted move towards open access before other countries, Britain will be giving its research away free while still paying for access to articles from other countries.

Willetts said he hoped the EU would soon take the same path when it announced the next tranche of Horizon 2020 grants, which are available for projects that run from 2014. The US already makes research funded by its National Institutes of Health open access, and is expected to make more of its publicly funded research freely available online.

Professor Adam Tickell, pro-vice chancellor of research and knowledge transfer at Birmingham University, and a member of the Finch working group, said he was glad the government had endorsed the recommendations, but warned there was a danger of Britain losing research projects in the uncertain transition to open access publishing.

"If the EU and the US go in for open access in a big way, then we'll move into this open access world with no doubt at all, and I strongly believe that in a decade that's where we'll be. But it's the period of transition that's the worry. The UK publishes only 6% of global research, and the rest will remain behind a paywall, so we'll still have to pay for a subscription," Tickell said.

"I am very concerned that there are not any additional funds to pay for the transition, because the costs will fall disproportionately on the research intensive universities. There isn't the fat in the system that we can easily pay for that." The costs would lead to "a reduction in research grants, or an effective charge on our income" he said.

Another consequence of the shift could be a "rationing" of research papers from universities as competition for funds to publish papers intensifies. This could be harmful, Tickell said. For example, a study that finds no beneficial effect of a drug might be seen as negative results and go unpublished, he said.

Stevan Harnad, professor of electronics and computer science at Southampton University, said the government was facing an expensive bill in supporting gold open access over the green open access model.

He said UK universities and research funders had been leading the world in the movement towards "green" open access that requires researchers to self-archive their journal articles on the web, and make them free for all.

"The Finch committee's recommendations look superficially as if they are supporting open access, but in reality they are strongly biased in favour of the interests of the publishing industry over the interests of UK research," he said.

"Instead of recommending that the UK build on its historic lead in providing cost-free green open access, the committee has recommended spending a great deal of extra money — scarce research money — to pay publishers for "gold open access publishing. If the Finch committee recommendations are heeded, as David Willetts now proposes, the UK will lose both its global lead in open access and a great deal of public money — and worldwide open access will be set back at least a decade," he said.