

have estimated that the case will affect only about 8,000 of the at least 72,000 US patents that mention DNA sequences of one sort or another.

That leaves businesses with the unenviable task of sifting through the remainder to determine which, if any, will affect the commercialization of a given invention. Patent 7,777,022 highlights the growing difficulty in doing so: although it lists millions of sequences, it lays claim to only a few. A firehose of data and limited search tools make it impossible for all but highly trained patent specialists to make sense of the landscape around any technology. Highly trained patent experts do not come cheap: companies invest millions each year to keep track of the shifting intellectual-property landscape. Those that cannot afford the fee take the risk of being unable to patent their discoveries, or of being sued.

On 6 December, a study published in *Nature Biotechnology* took an important step towards rectifying that problem by revealing an open-source database that allows interested parties to map out the patent landscape around a technology without racking up exorbitant legal fees (O. A. Jefferson *et al.* *Nature Biotechnol.* **31**, 1086–1093; 2013).

The database, called the Lens ([www.lens.org/lens](http://www.lens.org/lens)), was created by Cambia, a non-profit organization in Canberra dedicated to facilitating innovation. It pulls together information from more than 90 patent jurisdictions worldwide. The Lens can be used to investigate patents of any ilk. But it has dedicated tools to analyse patents on DNA and protein sequences, and has plans to develop similar tools for other classes of patents, including those for circuits, software and chemicals.

The Lens is a bold effort to bring clarity and parity to the analysis of patents. It is also an innovation in need of support. Powered by eight busy software engineers, and funded by a patchwork of foundations and the Queensland University of Technology in Brisbane, Australia, it is tackling big-data problems that few have dared to take on. It will work best when it has cultivated a wiki-style following of users willing to take the time to annotate content, develop tools and share analyses.

Such a following can be hard to come by when academics and business leaders are already juggling busy schedules and scrambling for funding of their own. Cambia founder and chief executive Richard Jefferson is quick to acknowledge that some previous open-source efforts met with much enthusiasm but little participation from the academic community. It would be worth the effort for funders and institutions to find ways of incentivizing participation in an open-source patent effort.

Technology-transfer offices can help by logging the allocation of licences and changes in ownership in patent-assignment databases, where possible. A recent study led by Arti Rai, a specialist in intellectual-property law at Duke University in Durham, North Carolina, found that many universities fail to comply with basic requirements to acknowledge the contribution of federal funding to inventions in patent databases (A. Rai and B. Sampat *Nature Biotechnol.* **30**, 953–956;

**“Many patent systems do not post their patents in a machine-readable format.”**

2012). Such information is important to track the history of the patent and the impact of federal research funding, as well as to allow the federal government to pursue its rights regarding such patents.

In the United States, the push to boost patent transparency has gained much-needed attention from on high. Revelations that some businesses, sometimes known as ‘patent trolls’, have been amassing large patent estates and using them to threaten other firms with litigation has caught the attention of the US Congress and the administration of President Barack Obama. Lawmakers are now considering legislation to rein in patent trolls, in part by creating reporting requirements that will help to clarify who owns a given patent — information that is currently hard to come by.

But the US patent system, troubled though it is, is not the only system that makes it difficult to track patents. In a survey published along with the Lens analysis, Cambia researchers noted that many patent systems do not routinely post their patents in a machine-readable format, making it difficult to search and analyse them. Where possible, it is time for such systems to address these flaws.

On the first day of many introductory patent-law classes, students are taught about the ‘patent bargain’. This is the foundation upon which the patent system is built: in exchange for protection for an invention, the inventor agrees to publicize their creation so that others may build upon it. The idea behind patenting was thus to put innovation into the public domain — yet the patent system has developed too many nooks and crannies in which information can be hidden away.

It is time to return to the bargain at the root of the patent system, and to use the computational and social-media tools at our disposal to publicize inventions, rather than obscure them. ■

## Gender progress (?)

*Despite some success, the proportions of women in Nature’s pages and as referees are still too low.*

There are many obstacles to diversity in science. In any nation, there will be cultural and societal factors — often intersecting — that prevent the full research potential of one population group or another being fulfilled. One manifestation is discussed on page 211.

We at *Nature* have attempted to put our own house in order, and have produced just a scratch on the surface of one particular challenge — the low proportion of women contributing to our own content. That scratch is there thanks to actions taken since we focused on this issue in an Editorial a little over a year ago (see *Nature* **491**, 495; 2012).

So what have we achieved? In the visibility of women in our pages, progress has indeed been made.

In the News & Views section, the proportion of female authors has increased from 12% in 2011 to 19% in 2013.

The proportion of women appearing in profiles by our journalists has increased from 18% in 2011 to 40% in 2013. That does not include the four profiles in our ‘Women in science’ special issue early this year (see [nature.com/women](http://nature.com/women)).

The number of articles by women in our World View section, which is driven by current topics, has remained low, now running at 12%. By contrast in 2013, 33% of Comment articles had at least one female author (27% of them had a woman as the first author). The combined total of World View and Comment articles with at least one woman author in 2013 is 26% — an improvement on 19% in 2011–12.

In our Editorial a year ago, we highlighted the need for a ‘gender loop’ — a conscious step in which an editor deliberately identifies several female candidates before selecting authors and profile subjects in our magazine sections, and referees for our research papers.

In this last category, the result has been disappointing — the number of women referees has remained all too low. From 14% in 2011, the proportion of women fell to 12% in 2012 and then rose to 13% in 2013. Taking into account uncertainties resulting from ambiguities in some names, these numbers are essentially on a plateau.

Efforts have been made by research editors, when visiting labs and meetings, and when surveying the literature, to increase the number of women invited to act as reviewers. Women already make up only a small proportion of the potential referees, owing to the demographics of the research community. And our efforts have made us all the more aware that a higher proportion of women than men decline our invitations to referee. We have not investigated this with a survey, but informal comments indicate that women tend to be that much more busy.

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The lesson in this tale is: we must try harder. ■