THIS WEEK

Don't feed the trolls

Patent abuse slows down research and innovation, and must be confronted. Delays to US legislation are not reassuring, but there has been some progress in the courts.

Not long after news of his experiments got out, the trolls came for Rob Carlson. A consultant in Seattle, Washington, Carlson is part of a growing movement of biohackers who tinker with biotechnology in their garages. But when word reached the media several years ago that Carlson intended to commercialize his inventions, he was threatened with lawsuits from people who claimed to hold patents that covered the entire field of proteomics — the study of the proteins that make up cells and organisms. If Carlson did not pay a substantial settlement, the purported patent holders said, they would sue him for infringement.

And so Carlson was introduced to the world of patent trolls, a pejorative term for people or organizations who file or license patents solely to use them to extort money from firms that infringe them. In 2012, patent trolls accounted for 62% of all patent legislation in the United States; in 2011, such cases cost companies US$29 billion. Attempts to rein in patent abusers are mounting. On 2 June, the Supreme Court issued a decision that tightens requirements for patent claims to be clear and unambiguous, potentially limiting the broad claims that foster abuse. US President Barack Obama has made tackling trolls a priority, and last December, the House of Representatives passed a bill proposing an 'Innovation Act', which included measures to counteract the problem.

But on 21 May, Senator Patrick Leahy (Democrat, Vermont), chair of the Senate Judiciary Committee, announced that he was taking the bill off the committee's agenda. He said that nearly a year of hard work had failed to produce legislation that would temper trolls without harming genuine patent holders. With Congress heading into an election in November, it is unlikely that the bill will be resurrected this year.

The legislation's demise highlights how hard it is to design patent policy that satisfies two large technological domains. Trolls mainly target technology firms, in part because patents on software and business methods are often broad. Many technology companies already find patents to be a nuisance — particularly those that make broad claims on business methods or software (see *Nature* **509,** 152–154; 2014).

By contrast, the biotechnology and pharmaceutical industries hold their patents dear: intellectual-property protection can be important during the often lengthy struggle to win regulatory approval for a drug or genetically engineered crop. Trolls have not so far tended to trouble these industries, but that may change. In a study released this year, researchers found dozens of university-held patents that could be deployed against bioscience companies, including some that cover methods to screen for or manufacture new drugs (R. Feldman and W. N. Price *UC Hastings Research Paper No. 93* http://doi.org/s2m; 2014).

Universities also value patents, both to encourage the commercialization of academic inventions and as a source of revenue. Academic technology-transfer offices tend to raise the bulk of their funds from licensing biomedical patents. In April, the Association of University Technology Managers joined groups including the Biotechnology Industry Organization in signing a letter to Leahy, opposing the proposed Innovation Act. The bill would make it difficult and expensive to enforce their patents, they said.

University opposition to the Innovation Act has fuelled claims that some academic institutions have themselves become patent trolls. Industry insiders have made this assertion many times over the years, particularly as universities have become more aggressive in protecting their patent holdings by suing potential infringers. A popular term for a patent troll is a 'non-practising entity': a party that does not intend to market products based on its patents. By this very broad definition, universities — which license their patents instead of marketing products directly — would be patent abusers. But of course they are not, as long as they hold their mission to help society above their drive to bring in cash. Academic institutions need to make their priorities clear: the practice of licensing patents to trolls to raise funds does not help their public image (see *Nature* **501,** 471–472; 2013).

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It is disappointing that Congress will do nothing in the near future to slow the steady march of the patent troll. But luckily, legislation is not the only option. By the end of June, the Supreme Court is expected to rule in a complex patent case that could narrow the scope of software and business-methods patents (see *Nature* **507,** 410–411; 2014). The US Patent and Trademark Office has initiatives to make it easier to determine who owns a patent. And the US Federal Trade Commission is studying troll behaviour. If the target is better defined, it may well become easier to design legislation that hits the mark. ■

Renewed energy

Reforms at the US Department of Energy are recharging research.

When physicist Steven Chu took over as head of the US Department of Energy (DOE) in 2009, he vowed to reform its research culture. Many felt that the department had become much too bureaucratic — too rigid, too unresponsive to new opportunities, too divided into disciplines and too isolated from the needs of the marketplace.

The following year, Chu launched five Energy Innovation Hubs intended to mimic the research style that he remembered from his time working at the AT&T Bell Labs in Murray Hill, New Jersey. Each hub would focus on a well-defined challenge in the area of renewable energy