

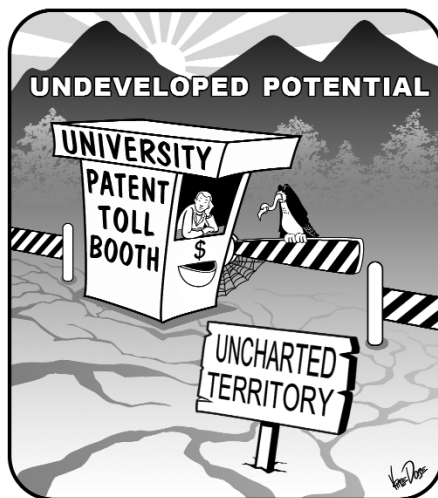
# Patently Crazy

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Twenty years ago, the Bayh–Dole Act mandated that U.S. universities could commercialize patents based on government-funded research and development (R&D). Although the law has been highly successful for the creation of start-up companies, and is being widely copied in Europe and elsewhere, it has produced enormous barriers to partnerships between industry and academia. I argue that universities need to focus on their core mission of knowledge creation and dissemination and we need to adopt patent rules where a failure to commercialize will create march-in rights for anyone to use.

Last year, the university community in the United States made well over a billion dollars in licensing revenue.<sup>1</sup> The top 10 universities are pulling in 60% of the income, while universities outside the top 50 barely cover their legal costs. Only 10% of university patents are ever licensed, and only 1% of these licenses generate more than \$1 million but these top-0.1% generate 80% of revenue. The blockbuster winners include some examples where new products and companies are formed directly from the university activity. However, they increasingly include large settlements of lawsuits filed by universities against companies that already had products on the market. Thus, the line between universities and “patent trolls”<sup>\*</sup> has become blurred. Worse, universities have begun to obtain licensing revenue explicitly through licensing portions of their portfolio to third-party trolls.

If the research enterprise can be compared to the mapping of an unexplored land, then patents constitute the toll-plazas. The rationale for patents, roughly, is that if you build the road in virgin territory you get to put up a toll plaza. This leaves the unlicensed 90% of university patents in a rather odd position. Universities are not-for-profit entities and they do not commercialize anything. So all of these unlicensed patents are toll plazas set up in the middle of an uninhabited valley in the hope that maybe one day



someone will put a road there. These unexploded landmines constitute obstacles, as opposed to enablers, for someone coming along later and trying to develop a new product or technology. In the absence of a successful product, the innovator must explore possible pathways to make a product. Whole areas of potential exploration are blocked by university-controlled patents. The universities' new role as IP<sup>+</sup>-competitors to industrial partners has enormously soured relations with industry. In university–industry collaborations, the largest issue by far is establishing intellectual-property terms. Industrial partners often say that dealing with universities is worse than dealing with a direct competitor.

Universities in the United States are involved in patenting by Act of Congress. The 1980 Bayh–Dole Act empowered universities to retain license to inventions made under federally funded programs. It has been enormously successful by a wide range of metrics: it has led to an enormous increase in university licensing revenues (from \$130 million to \$1.3 billion); it has vastly increased the number of patents

<sup>\*</sup>Intellectual Property

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created out of university research (from 500 to 10,000); it has created a minor industry in university licensing professionals numbering in the thousands. It has led to (or coincided with) an enormous increase in the number of spin-outs from universities (462 in 2004). And about 50% of companies started under Bayh–Dole licenses are still in business.

However, this patent activity does not begin to measure the enormous impact of basic research on the economy. If R&D drives between 50% and 85% of all economic growth,<sup>2</sup> then university R&D plays a central role in about \$280 billion per year of economic growth in the United States (\$6,000 billion over the life of Bayh–Dole). The *big* impact of the R&D enterprise is amorphous: excellent talent, well-educated students, an environment of innovation, a technology infrastructure for new companies, and cross-fertilization of ideas. Stanford University, for example, nets \$50 million in patent revenues, but has played a big role in forming Silicon Valley (about \$500 billion per year). To quote Jim Gibbons, “most of the businesses that Stanford students start are not started from patents that occurred at Stanford.”

Last year, federal and state governments in the United States invested \$70 billion in taxpayer money in university R&D. This investment probably brought the country nearly \$280 billion in economic growth. But the effectiveness of the research collaborations with industry was dramatically reduced in order to allow the universities to retain rights to mostly worthless IP and extract their \$1 billion. The research activity was also distorted and directed so that the universities could maximize their “profits” from publicly funded investments. The tail is wagging the dog.

Members of the university community need to regain their focus on what they do best: the creation and dissemination of knowledge. This will require the academics to assert their primacy over their university's technology licensing office. We also need to control the proliferation of uncommercialized patents. This could be done through an extension of the “abandonment” rule, with patent rights being forfeited for failure to commercialize a technology within an allotted span. Many countries (including France and Germany) already have rules where a compulsory license may be granted if the patent owner does not commercialize. The United States is a co-signatory to the “Paris Convention” that endorses such a view, in principle. Action on this would retain the many beneficial effects of the

<sup>\*</sup>“...patent owner...that enforces patent rights against accused infringers, but does not manufacture products or supply services based on the patents in question,” Wikipedia, [http://en.wikipedia.org/wiki/Patent\\_troll](http://en.wikipedia.org/wiki/Patent_troll) (accessed April 2007).

Bayh–Dole Act (spin-outs, start-ups, and tech-transfers) while eliminating major disadvantages (trolling and minefields).

It seems to me that if you don't build the road, you should lose the rights to the toll-plaza.

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### **References**

1. Association of University Technology Managers, "FY2005 AUTM U.S. Licensing Survey," 2007, [www.autm.net](http://www.autm.net) (accessed March 2007).

2. U.S. National Academies Press, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, 2007; [www.nap.edu](http://www.nap.edu) (accessed March 2007).

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