

***PRESENTATION:***

**THE UNIVERSITY OFFICE  
OF TECHNOLOGY TRANSFER:  
THE ATTORNEY'S PERSPECTIVE**

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I would subtitle my talk, "Transfers of University Research Tool Patents Creating Patent Taxes for Providing Valuable Services." I would like to credit Rebecca Eisenberg for raising this question and drawing serious attention to it. I am not going to be able to give you an answer one way or another to this question. What I will try to do is point out some useful ways to evaluate patent transfers from my perspective as a practicing attorney.

I would first like to discuss the concept of a "research tool" patent. It is very difficult to define exactly what a research tool patent is, and I suspect that many people have different definitions. I will take a stab at it and say that a research tool patent refers to a patent covering a basic technique that may lead to the discovery of useful products. It covers a tool that allows researchers to obtain more information about the objects of their research. A good example of this is the "PCR" patent, which covers polymerase chain reaction, in biotechnology. It is a basic method of amplifying DNA sequences.

Many useful products may result downstream from the use of a research tool patent but there are many steps in between. The phrase "reach-through license" has sometimes been used in discussing licenses of research tool patents. What this refers to is an attempt by the owner of the research tool patent to somehow capture royalties from a far downstream product. However, at the time that the research patent is patented there may be no idea whether or not a useful product will ever result. Concerning this issue, a recent trend with drug products is that a specific drug product that comes

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out of a pharmaceutical company may be based on many research tool patents. This leads to multiple royalty obligations; that is sometimes referred to as "royalty stacking." Recently, a Merck pharmaceutical executive remarked that royalty obligations are stacking up on some of the drug products sold by Merck. That is a reference to this phenomenon of royalty stacking from research tool patents.

However, this phenomenon raises the question of whether drug prices are being driven up by too many patents at the basic stages of research. What I would like to do is give one example of a research tool patent that came out of Yale University. This was patent #5712126, which covered a method of producing information about gene expression. Therefore, it was really a method of producing information or analyzing the information that results from expression of different genes. It illuminated an area of genetic analysis where little information existed up to that point in time. The technology of this method enables large pharmaceutical companies to identify new targets for drug discovery. The patent from Yale University that covered this basic method was licensed exclusively to a start-up company that at the time had no other intellectual property so it was founded based up this one patent. The name of that company is Gene Logic, and the company was able to raise \$9 million in seed capital and turn the patented method into a high-throughput process that was useful on a commercial scale. Gene Logic now employs a 168 people and has pharmaceutical alliances with large drug companies throughout the industry. Gene Logic's agreements with each of these big pharmaceutical companies provide for reach-through royalties based on this method of analyzing gene expression.

The point I wanted to make with this example of Gene Logic is that reach-through royalties are not necessarily patent taxes. Instead, they are a price for services related to drug discovery, because pharmaceutical companies that take advantage of these basic methods are able to discover new drugs faster, and in some cases discover new drugs entirely, or new targets for drug discovery. Big pharmaceutical companies have the option to discover drugs in the traditional way, so it is not as if they are being forced to enter into a license for a research tool patent. In fact, it is possible that drug prices may be lower, even though there are multiple royalties based on these multiple research tool patents, because the pharmaceutical companies, at least to some extent have offset the cost of their traditional R&D. So, in a way, the royalty on a reach-through license, on a research tool patent, may be thought of as the cost of outsourcing R&D to the biotech industry. I have not undertaken a statistical analysis because I do not think that the statistics are yet available; some of these research tool patents are

just coming out and just beginning to be used by companies. However, I think that there should be at least some offsetting of R&D costs of large pharmaceutical companies by these research tool patents.

I would like to further point out that the universities benefit from these licenses because they receive royalties and milestone payments that enable them to discover more research tools. This further accelerates drug discovery and the identification of new drugs. In addition, as in the case of the Yale patent that I mentioned, universities may lack the marketing expertise to successfully come up with ways of applying the technology and converting it to a high-throughput process. While it exists in the university it may be a theoretical approach, but there may not be a practical way of applying it in a commercially valuable setting. So, these transfers of university research tool patents do play an important role, and they are not all going to cause anti-competitive effects in the industry.