From Provider to Predator: University of Texas Patent Policy

Gerald Barnett

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I have previously looked at the University of Texas System intellectual property policy ("Texas wants you anyway"; "The most wonderful thing in the world"). I find myself drawn back to it again and again. In its 2012 version, the Texas policy is full of contradictions and inconsistencies, all written up in the finest legalese. Everything is bigger in Texas, including patent policy bombast. Broadly, Section 2 of the policy states a general claim of ownership, except for Section 5, which is about stuff not claimed, but Section 2 does not notice that Section 7, having to do with copyrights, also restricts the claim in Section 2, but is itself subject to Section 12, which allows for contracts to alter policy and so perhaps to override Section 7 and all the other Sections, too. "We compel you to follow policy, but we are not bound to follow the same policy, and if we change our minds, you have to change, too." Follow that?

If a policy is not mutually enforceable, it's not a contract, and so cannot be enforced in court. And if it's not law, then it does not have the backing of the power of the state to prosecute it. It's more like "guidelines." If it is not a contract and not law, then it must operate as a delegation of authorities within an institutional framework, and not as an instrument that can extract private ownership of anything from anyone unless they choose to comply (or, in the abstracted world of administrative politics, are deceived or coerced into complying). A delegation of authority within an organization does not carry with it the power to compel--all it can do is confer standing to act on behalf of the organization (fictional but helpless and conscience-less thing that it is) and offer organizational benefits and sanctions. That is, "if you refuse to assign your personal property to us, we can fire you" but not "we can sue you to obtain ownership of your personal property" (which would appear to require a theory of contract or law somewhere to sustain).

The typical primary benefit in companies for following a policy guideline is continued employment. In a world of academic tenure, however, ignoring guidelines is not necessarily a sufficient cause for termination. Of course, university administrators packing lawyers with nearly unlimited legal budgets can attempt to impose their will on most anyone. A good university patent policy's first aim is to place limits on what administrators--in positions of power but not with comparable status--can demand. But that does not make their policy any more "right" or "effective" even if they "win" (unless one buys into Thrasymachus's pragmatic argument that justice is whatever those in power say it is, or believes in the mandate of heaven, which some think left the world along with the divine right of kingship, but no, apparently, it lives on in the dark recesses of the administrative brain).

A good university patent policy's second aim is to make sure that the power for important decisions, such as institutional ownership claims on inventions, is placed with someone with comparable status within the university. Often, this person is the president or chancellor. While making such decisions may be challenging, and even seem to be a bother, that's the proper level at which such power should be employed, and delegating the decision on ownership, or worse, making the decision an abstraction of policy to operate on its own, as mere bureaucrat-crafted

words, creates the opportunity for low-status people--underlings, henchlings, assistant vice provostlings, bozos--to be petty, mean, stupid, and self-interested. It's not that all assistant vice provostlings are these things--but the potential gets created, the policy makes the odds greater. Give a halfling a ring of power and in the face of administrative terrors, it is an easy move to put it on.

The Board of Regents defines "intellectual property" to be most anything, whether intellectual property or not, whether property or not. The scope of interest for such intellectual property is anything made by anyone employed by the System or who uses System "facilities or resources" or with System facilities or The Board then claims that it owns all such "intellectual property. For these people, the policy claims that the Board owns their "intellectual property" *automatically*. This, of course, is nonsense, or put another way, administrative fantasy, or another way, an unconstitutional taking of private property for public purposes. Anyone with half a wit knows that to own patent rights in an invention, one has have a written instrument signed by the inventors. Same for copyright, where it is other than work made for hire (in which case, one does not need a policy to state what federal law already establishes--but at a university one *might* want a policy to make clear that scholarly work is not within the scope of employment, that the university does not have a right as employer of faculty to control or direct or suppress the disclosure of their scholarly work).

Later, the policy asserts that everyone subject to the policy will "hereby assign" all that "intellectual property" to the Board, forgetting apparently that the policy has already asserted that the Board "automatically" owns their work. Here the policy reads as if it is pretending to be a contract of some sort rather than a statement of policy that authorizes administrators to act in some way (such as, to require a patent agreement with each employee or person using System facilities or resources). The "hereby" gets added in the 2012 version of the Rules and Regulations--presumably following the lousy advice of lawyers who decided that the *Stanford v Roche* decision hinged on Stanford's policy use of "promise to assign" only, while Cetus used "hereby assign."

[Sigh. In case you missed it, I will put this in tiny print. The problem was, of course, that the courts never got to that issue. All we have is a minority opinion musing on whether the words "hereby assign" should make so much difference compared to "promise to assign." But that's an irrelevant musing for the Stanford case, because the promise to assign to Stanford *was not prior* to the assignment to Cetus. First, there was the Cetus assignment. Then the post doc came back from nine months at Cetus, and almost immediately he invented at Stanford in just the area he had worked on while at Cetus--precisely the kind of bad behavior that a startup company with hot new technology guards against. Stanford filed a patent application and only much later got around to asking for an assignment of patent rights. The appeals court found that the assignment to Cetus was valid, and therefore the inventor had no rights to assign to Stanford when Stanford got around to requiring assignment.

A present assignment stuck in a policy statement would not have changed this outcome--Stanford's policy at the time allowed inventors to own their inventions whenever possible, and Stanford had approved the nine-month leave to work at Cetus, and as the court ruled, Stanford knew what the conditions were for having a post-doc work at Cetus, so a present assignment would not have changed things. The invention was out of scope of Stanford's policy claim, and the addition of federal funding later to the development of the invention would not have magically voided the assignment to Cetus, even with Bayh-Dole requirements. So Stanford was reduced to arguing that Bayh-Dole vested ownership of inventions with Stanford, voiding any contracts or assignments to the contrary. The Supreme Court rejected that argument, pointing out that Bayh-Dole only

provides that if a university has got ownership of an invention made with federal support, then it can choose to keep that ownership, provided it behaves.

Further, and this is the kicker, putting "hereby assign" in a patent policy would not have made any difference. A patent policy is not a contract, and there's no signature. It's fantasy, or, an attempt to abuse administrative power. But apparently in Texas, no one writing policy has a clue and so throws in a "hereby assign" because, well, it sounds so good.]

Yet later, the policy excludes "intellectual property" created "outside the course and scope of employment" and "on his/her own time" and "without the support of the U. T. System or any U. T. System institution or use of U. T. System facilities or resources"--leaving open the question of what exactly such mysteriously abstract U. T. System "support" might be, if not use of facilities and resources.

Later still, the policy asserts that the Board's "interest" in "intellectual property" is subject to a process of "determination," started with a disclosure of the "intellectual property owned by the Board of Regents." The Board, according to the policy, might choose not to "assert" its "ownership interest." And if this is the case, then the Board will "release" the "intellectual property" to the "creator," with various caveats. But of course, if the Board already owns "automatically" and by means of the magical "hereby assign" wording (as if "automatically" wasn't already sufficiently magical), then the Board has to do more than "release" the "intellectual property" to "creators"--it has to assign it to the creators. The Board, here, is just plain confused. The policy *already asserts the Board's ownership interest*. The Board can't later in the policy reserve the right to pretend that the Board hasn't decided whether to assert its ownership interest.

Within a few paragraphs, the Texas policy asserts automatic ownership, demands a present assignment, treats the policy as if it is a written instrument signed by the "creator," (and so, a weird form of adhesion contract or a non-legislative enactment of law), and then makes it appear that the Board doesn't actually own, but only has a policy claim to ownership, under which it may decide to "assert" or to "release" its claim to own. The policy takes, then, three different approaches to ownership--(i) automatic, (ii) by way of required assignment, or (iii) after review for interest. Worse, it appears that those drafting the policy don't recognize the differences in these approaches, or the contradictions, or the--for lack of a better word--stupidity of putting out such a strange statement.

There's enough here to argue that the policy is so confused, so conflicted and contradictory, that no reasonable person could possibly know what the Board intends, and therefore the policy here is simply malformed garble and binds no-one to anything regarding ownership. Not that one can say that to a Board who has loaded attorneys pre-paid and ready to fire.

The 1946 Texas Patent Policy

Let's look at some history to see if there's a story for how this situation comes about. A good start is with the 1946 policy, which was in effect largely in the same form until the 1970s. This policy is remarkably simple. Here's the outline:

Except when a contract specifies otherwise, employees own their patentable inventions, but they owe the university 10% of net income over $1,000 [over $10,000 in 2016 dollars] and 20% when net income is over $5,000. Organizations supporting research at the university should expect a FRAND (fair, reasonable, and non-discriminatory non-exclusive) license.

Here's the text in full, reprinted from Archie Palmer's compendium:

(d) In cases where contributions have been, or may hereafter be made to research projects by private persons (such as in the case of the Schoch Electrical Discharge Process) nonexclusive licenses on all inventions or discoveries resulting from such research shall be issued on a reasonable royalty basis without discrimination in favor of or against those making contributions in aid of such research.

In 1960, essentially the same patent policy shows up in the "Personnel" section of The Rules and Regulations of the Board of Regents for the Governance of the University of Texas:

It's worth seeing the table of contents to see just where patent issues fit into the Board of Regent's thinking--until recently, the Board considered patents a part of "General Personnel" matters. Then, for some reason, "Intellectual Property" was given its own section at the end--as if the whole idea of ownership of what people do is no longer about how the university provides an environment for personnel, but in the abstract makes ownership demands on whomever comes within its sphere of power, regardless of who they might be.

The 1946 patent policy makes good sense. Inventors own their inventions, even if they are university employees, unless there's a contract that provides otherwise. That is, the policy restates common law. Contracts that provide otherwise could be ones with an external sponsor of research, or could involve a special deal with "general personnel"--outside of an appointment or employment agreement--under which the university commissions specific work for its own benefit or provides substantial resources with an expectation of reimbursement or a return on investment if the result proves valuable.

If an employee-inventor wants to file a patent application, that's up to the employee-inventor, at the employee-inventor's expense. If the employee-inventor wants to give away licenses, that's

fine, too. The university claims a share of licensing income only when the net income from licensing exceeds a threshold (roughly, the cost of applying for a patent using a patent attorney). Not only is the policy simple to draft but also it is free of many administrative complications: there is no need for the university to own anything, stuff does not have to be disclosed so university administrators can sniff at it, and inventors can continue to use university facilities to develop their work. The condition for working on stuff is not who owns it but whether the work is consistent with the mission of the university--are students getting trained? is something of value for Texas citizens being developed? is good science and engineering being published? Only stuff that an inventor chooses to patent and exploit for profit comes within scope of the policy, and there we find only two conditions: 1) if there's a profit, then the university gets a share; and 2) if there are sponsors, they should expect a non-exclusive license.

The 1946 patent policy is simple, clear, and smart. One can't ask for much more. But the Board, apparently, was not satisfied with simple, clear, and smart, and so has sought to improve on that with convoluted, garbled, and grasping. Only a bozonet could love the changes. And only a determined bozonet could draft such crap, sell it to itself as necessary and advantageous, approve it, and stick it to the people who work at the universities in the Texas System of Higher Education.

The 1977 Texas Patent Policy

In 1977, the Board adopted a new patent policy. It adds a preamble that disclaims inventing as a "primary objective of the System" (leaving aside why the System--abstraction ("system") of abstraction ("university") of abstraction ("college") of abstraction ("faculty")--should have objectives at all, rather than serve as the repository for governance of competing interests). The effect of the disclaimer is to reduce the apparent importance of patents. This denigration will become important in later policy revisions. The policy states two objectives:

1. encourage the development of inventions
2. permit timely disclosure of inventions

Each of these objectives includes a qualification, worth noting. Administrators have a habit of dropping qualifications as if they were merely illustrative rationales and not restrictions on a general case. Thus, "we own everything made in research work assigned by the university"--the claim is limited to the stated condition--transmogrifies into "we own everything, including but not necessarily limited to stuff made in research work assigned by the university"--where now the stated case is read not as a limitation but as an illustration, a member of a set, and becomes a figure, a metonymy, for a class of ownership created by the administrator ("everything" not "everything within the stated, limited case"). If you follow this pattern, then you begin to see what the administrative drafting habit is.

The first policy objective is qualified in this way:

encourage the development of such inventions for the best interest of the public, the inventor, and the sponsor whenever an invention occurs

So it's not merely the development of inventions--meaning, one would think, moving from whatever was first realized to something practical for others to use through testing, prototype variations, applications, and productization. The objective of the System is that the development must somehow be "for the best interest" of three groups--"the public," "the inventor," and "the sponsor." That sponsors show up indicates the sea change that took place after the second world war, as the National Science Foundation ramped up funding for university-hosted research and other federal agencies followed with their own funding programs. That the System itself does not show up in this list is consistent with the idea that the System (and its university components) are trustees in this process (cf. 2 CFR 215.37) and not active, self-interested participants.

The tension in this list conventionally is between the inventor and the public. This tension has been in university patent policy debates from the very outset. On the one hand, the constitutional basis for the federal authority to create patents is progress in the useful arts by creating a personal property right for individual inventors. The inventor, seeking his or her self-interest, uses the patent system as he or she sees fit, and Adam Smith's invisible hand will ensure that there's "progress"--meaning, "to spread" or "diffuse" the invention. The patent system does this spreading in two ways. First, a patent publishes the invention and teaches how to practice the invention so that anyone with "ordinary skill" can do it. Second, the patent gives the inventor the right to exclude others from practicing the invention (making, using, selling, importing) for a limited time. During this limited time, the inventor and those working with the inventor's authorization get to do the making, using, and selling, and importing, and so gets a head start at benefiting from his or her inventiveness.

That's all pretty good, with the usual intellectual fussing that comes about when academics get to talking. But universities had a different take. If an inventor happens to be working in a university, on a university faculty, doesn't the inventor have obligations as well to the faculty, to the mission of the university, to those that oversee that mission? If so, then the university should have some say in how an invention is patented, and if patented, how the patent is used "for public purposes" rather than merely for the self-interest of the inventor. Self-interest, in the context of a university, easily becomes "greed" or "selfishness," and such vices in turn suggest administrative controls to contain that greed and channel it into a thirst for righteousness. It is then another easy step for administrators (and even humanities faculty) to desire a policy that formalizes this position as a formal policy aimed to protect the university and the public from personal patent greed.

One university view of patenting, then--and the dominant view, Lehigh University and MIT notwithstanding--was that the patent was a creature of monopolies, and monopolies were antithetical to the collaborative, public-spirited mission of the university. Patents were cast as a threat to academic research, denied the public broad access to the benefits of university-hosted inventions and discoveries, and in some areas--particularly the practice of medicine--were viewed as fundamentally unethical. No one should be denied a treatment that might improve their health or save their life.

As a result of this tension, things developed along two paths. On one path was laid out by Cottrell, the Research Corporation, the Wisconsin Alumni Research Foundation, and the many other university-affiliated research foundations. Their premise is that it is the faculty inventor's

choice whether to use patenting, and if so, the patenting ought to be done outside the university, and in exchange for providing funding and expertise, the invention management agent would after costs and whatever share the inventor wanted dedicate the remainder to support more research. Whatever the particulars of the deployment of a patent, any net income would go to a good cause.

University administrators responded to this pathway with a policy apparatus based on financial interest. Committees would review circumstances under which an invention was made and further developed. If the university had commissioned the work, or had provided extra resources, then there might be a claim for equitable treatment--its funding should be reimbursed, it should get a share of income, it should be part owner as an outcome of the agreements that had been made and common law. Issues then revolved around how committees were constituted, what was meant by "significant use" of resources, and the precedence of contracting obligations over defaults (inventor ownership, for instance) in policy.

The second path went through university ownership of inventions. Here there were two competing policy claims. One was that a university should own inventions so it could preclude monopoly dealing by corporations. A university would own patents as a trustee, to ensure ready access to the inventions by all, and to prevent abuse of the patenting system by companies aiming to patent improvements and applications that then cut out everyone else. Patents, in this way of thinking, would be licensed non-exclusively and royalty-free to all behaving, qualified applicants. The university's interest was the "progress" of the useful arts--that is, the spread and diffusion of inventions. There was little--at least in policy--of the idea that the public was most benefited when the university sought to license exclusively and to generate a financial "return" on the "public's investment" in the university or the research.

The second competing policy claim was that a university as a publicly spirited organization would do a better job managing patents for income than inventors and their agents might, and money was a valuable thing for a publicly spirited organization to have, so it could have, well, more public spirit. Karl Compton, the president of MIT, reflects this approach, instituting a patent policy at MIT that claimed ownership of inventions in 1932.

As things developed, the idea of a financial return was borrowed from the research foundation pathway--that the university sought royalties from its patents to fund its own research, and it could do better job itself than if inventors were left on their own to decide what to do, if anything. A University of California committee in the early 1960s made this pitch--but without the claim that the university must own all inventions-- back when federal funding for research was still not particularly significant (and still fraught with ethical questions, at least for some of the academics of the time). The idea was that if a university inventor took his invention to a national agent, such as the Research Corporation, then the share of royalties devoted to research would be spread all over the country and only some of the money would come back to the University of California. If the university acquired ownership of patents, then (so the reasoning appears to have gone), then a greater share of licensing income would come back to the university. Essentially, this was an argument based on provincial wants rather than on national opportunities, but to its credit, it was and still is a compelling argument among university administrators and faculty (not that I find it persuasive or even sound).

This emphasis on income shifted, then, the idea of "public benefit" from "progress" (spread, diffusion) to "the university as beneficiary to lighten the burden of public support for the university"--that is, university administrators and faculty shifted the focus from providing a service (progress) to self-service (if we make money for ourselves, then we won't have to ask you for as much money). Later, this argument transmogrified into something less desirable (since you appear to be making so much frickin' money through licensing your patents, we should put our money into areas of society with fewer resources to work with). "Excellence" became a public rhetoric *against* the public funding of universities (other for federal grants, where "excellence" means "successfully demonstrated better potential capabilities than others")--much to the consternation of university administrators who don't appear to know where to take the rhetoric and so keep repeating, black knight style, that despite the cuts in public funding, their universities are still "excellent."

So the reasoning appears to have gone: if a university exists to serve the public, then when it makes money from patent licensing, the public benefits because the university benefits. In some technical, narrow sense, this might even be true. A license might lead to a beneficial product, and more money for the university might be a good thing. But in the larger sense, these are two radically different ideas of benefit. In one, administrators and faculty work for a good beyond the institution. In the other, administrators and faculty work for their own good. The more money they bring in from licensing, the more they have to work with. The university, in this line of reasoning, gets better when it has more money that it makes for itself.

Patent licensing then represents a "new source of revenue" and if a university is to "run more like a business," then administrators would do well to systematize and scale the operation to maximize royalty income. For that, why wait for an invention to be used when one can get substantial fees from licensing patents exclusively, especially into speculative schemes that aim to sell up or go public or litigate? Most such schemes depend for their success not on the practical application of an invention, but rather on the change in perceived value of the patents that cover the invention. One need not do when value also changes dramatically as one appears well positioned to do. One can make better licensing income faster--so the argument goes--by speculating on patent rights with exclusive, monopoly-producing transactions than in promoting the progress (spread, diffusion) of the useful arts.

Whereas in the first pathway, inventors worked out with their invention management agents how they would deploy an invention and its patent rights--that is, by negotiation outside the institution, outside any employment relationship--in the Compton scheme, the university takes ownership of inventions and then decides, administratively, what to do to exploit the patent right as an institutional asset rather than as a personal one. Those universities that adopted the Compton approach also followed MIT's lead in contracting for invention management services with Research Corporation, and later with Battelle Memorial Institute, University Patents, and Competitive Technologies, and with their affiliated research foundations. In a number of cases, university policy directed ownership of inventions to an affiliated foundation, which then contracted with a national invention management agent. The common ground in these variations is that the university administration controls what to patent, who manages the patents, and who gets the money from any licensing of patents.

Returning to the second of the two objectives announced by the 1977 Texas policy--timely disclosure of inventions--the objective is qualified in an interesting way:

permit the timely disclosure of any patentable discoveries, whether by patent, publication or both.

That is, "disclosure" here does not mean "disclosure to the administration" but rather "disclosure to the public." The policy aims to ensure that inventions are made visible to the public. "Submitting ideas" regarding patentable inventions to a patent committee is only one step in the overall process.

There is an additional sentence in the preamble that then sets the objectives into context:

The policy is further intended to protect the respective interests of all concerned by ensuring that the benefits of patents accrue to the public, to the inventor, to the System and to sponsors of specific research in varying degrees of protection, monetary return and recognition, as circumstances justify or require.

To decide among the competing interests--which now includes the System itself--across three areas of concern (in short, ownership, money, and fame), the policy expects to be guided by "circumstances." That is, any claim ought to be justified (or required) by the conditions that present, the circumstances, and not for-ordained by policy. The 1977 policy is committed to an empirical approach to invention management. Review the conditions of invention and development to decide the equities due each party involved. This is the essence of governance--adjudicate competing interests--as distinct from management, which involves dictating behaviors for production efficiency.

The policy then states that it applies to everyone employed, using resources, or in doctoral programs or just completed a doctorate ("post-docs"). This requirement makes sense. It makes sense to require that everyone involved will accept administrative resolution of competing interests based on the circumstances of each case. Casting a broad scope restates a basic principle of governance: accept arbitration where there are competing interests.

Less evident is the location of the "public" and "System" side of the tension involving disposition of patent rights. An inventor is an individual and enjoys the prospect of patent rights by operation of the Constitution, common law, and federal law. The "public" is an abstraction. "The public" neither thinks (no brain) nor has a Constitutional right to inventions. Same for the "System." Individuals acting in the name of the System, or taking on the mantle as a representative of "the public" must be making a case for something other than individual ownership of inventions. That's what the 1977 patent policy has to work out.

The starting point for this effort to deal with the tension between the public and the individual is to translate it into a tension between the System and the individual:

It is the intent of this policy to permit staff members maximum freedom in respect to their findings, consistent with their obligations to the System.

Here, the drafting is of the form, "you inventors have everything but for what you have obligated to the System." It's remarkably like the Stanford University policy that came into dispute in the *Stanford v Roche* case--inventors own everything except what the university is required to own (as a result of, say, law or contract or court order). In such an approach, it is up to the university and its potential inventors to state clearly what it is inventors have promised the System. Anything not obligated, isn't. Timid and uncertain administrators often take a different approach and aim to "shift the burden" by drafting something along the lines of "The System owns everything except what it expressly agrees to release." This latter approach is the way of most American university patent policies these days--no longer called patent policies but rather "intellectual property" policies, with "intellectual property" defined to be both intellectual property and non-intellectual property (stuff that is not patents, copyrights, or trademarks; stuff that is chattels or material property; stuff that is not property and cannot be said to be owned; stuff--information, practices--that is said to be owned only because of promises by others not to use or disclose the stuff).

The 1977 Texas policy then distinguishes between making an invention public and property rights in an invention:

Any person affected by this policy who, as a result of his or her researches makes a discovery, other than on certain government or other sponsored research projects, where individual grant agreements provide otherwise, should retain the ultimate right to decide how it is to be made public--by publication, by patenting, or both.

Other than when a funding agreement dictates publication and ownership terms--and for faculty investigators, they choose those terms and are not assigned to do work on any given grant--the inventors decide whether something should be patented or not. This is important--to decide whether to patent an invention is to decide whether the invention will be owned. If an inventor decides to publish and not patent, there's no further discussion about ownership, since there's nothing to own (other than by redefining invention in strange ways--not beyond the imagination of administrators, if still beyond their skills).

One can see how this approach dramatically reduces the volume of inventions that need to be considered by the institution. If the inventor decides on ownership, only then is there a further review for institutional interest:

Property rights in inventions will be based on the degree of System support, as hereinafter specified.

This is utterly unlike the present approach, dominant in most American universities, in which ownership of inventions (broadly defined--inventions and non-inventions, etc) is claimed outright, and patenting is a decision made by administrators. That is, in present policies (including the current policy at the University of Texas), ownership is a matter of administrative fiat--it is not even a matter of judgment. The only matter for judgment is whether the System will keep the ownership it has claimed.

Because a patent is a publication--that is one of its essential properties in promoting the "progress" (spread, diffusion) of the useful arts--claiming institutional ownership of an invention and claiming the right to file a patent application means that the institution may compel a faculty member to publish and dictate where that publication will take place. That's quite an assertion of administrative power (or, in the case of public universities, state power). Certainly, it is a challenge to--if not a blatant disregard for--the policy commitment to academic freedom found at nearly all universities, that the university (and the state) should not and will not mess with when and how a member of the faculty conducts research or publishes research. Except, when something is an invention, and invention is anything administrators say it is, and ownership is whatever administrators say they own. In which case academic freedom is laughable, like wearing a top hat and tails to work in the university's patent licensing office.

Even if one decides on patenting--that is ownership--and there's an institutional interest arising from the circumstances of institutional support or contracts--there is a further issue of how patent rights should be deployed. One tradition considers non-exclusive licensing, to make technology available; another tradition favors exclusive licensing to enhance financial returns by placing technology into a stream of speculative investment. The 1977 Texas policy opts for the former tradition as the default:

It is a basic policy of the System that patents be developed primarily to serve the public interest. This objective usually will require patent development by non-exclusive licensing but the public interest may best be promoted by the granting of a limited exclusive license or even an exclusive license for the period of the patent.

This is in line with the university's role as trustee rather than self-interested party: non-exclusive first, limited exclusive next, and only in some cases, an exclusive license for the life of the patent. Such a priority stack is in line with the expectations of the NIH's old Institutional Patent Agreements, which expected non-exclusive licensing unless one had a meaningful reasons otherwise, and limited exclusive licenses to three years from the date of first sale or eight years from the date of license, whichever was shorter. At one point Stanford incorporated these limits into its formal statement of policy on licensing.

After discussing the purpose and duties of an Institutional Patent Committee to make determinations of System interest in inventions that inventors have chosen to patent, the policy distinguishes inventions based on circumstances under which "the patentable idea has developed" (I paraphrase and add header tags for readability):

1. Independent: on one's own time, with no direct System support or use of System facilities. No System ownership or financial interest. An inventor can offer an invention to the System, and it's up to the patent committee whether to take it.
2. State support: from research performed on System time, with support by State funds, or using System facilities. Inventor's choice whether to seek a patent. If so, then the patent committee recommends the System's interest, with approvals from the System Patent Officer and System President. If the System asserts an interest, then it will share royalties with the inventor on a sliding scale of more at small amounts of income and less at larger amounts. Otherwise, the inventor is for the most part back to Independent status.

3. Grant support: supported by a grant or contract with a Federal agency, or with a nonprofit foundation, or by a private gift to the System. The value of getting the grant outweighs any exception to the patent policy, so the terms of the grant control.
4. Industry: resulting from research supported by commercial concerns or industry. Industry contracts must be negotiated based on the circumstances, with the most important consideration being "the interests of the State and its citizens who provide basic fiscal support." Any contract here that alters the patent policy requires advance approval from the patent committee, the chief administrative officer, the System President, and the Board.

Yeah, don't mess with changes to policy in industry contracts unless it's a pretty darned important contract.

Income after costs to manage the "System Patent Office" is to be used "for research purposes at the component institutions where the invention originated." This last provision reflects two additional tensions set up by the policy itself. The first is the extent to which the System Patent Office is concerned largely with recovering its own expenses (and growing those expenses to gobble up whatever income there might be) and allocating income for research (in which case, the System Patent Office would be selective in what it takes on and limit its costs to maximize the net available for research). There is nothing in most university patent policies that addresses the size of the patent and licensing operation. They get to eat what they harvest, and they are limited in their eating only by the self-discipline of their administrative leaders.

The other tension is between public benefit writ large--university as trustee, getting stuff out in a form that prevents monopoly control--and public benefit write tiny in the form of more money for research at the university. This is a challenging tension, especially for administrators whose status depends on how much money they bring in. "Socially responsible licensing" only works in places where administrators (and faculty who think they have an inside track to get access to research dollars) respect the public benefit of making stuff available, even without a demand for royalties, or only nominal amounts--FRAND licensing, for instance, to create standards and ensure everyone who is capable has access.

If patent policies and practices are any indication, most American universities are stuffed with administrators who don't give a rat's ass about public benefit writ large--that's idealism, misplaced altruism, and a failure to grasp that survival depends on getting one's due rather than creating opportunities for others. If all universities pursue their own self-interest, then, why, an invisible hand will guide all of them to the most equitable society possible--this, the myth of the provincial administrator. What actually happens is that discoveries get tied up in institutional ownership claims, institutions can't license without stuffing the deal with poisonous terms, and end up licensing mostly to snakes, not all of them poisonous. 99.5% of what universities claim under this approach never sees commercial product. Tell all the stories one wants about the "successes"--the reality is that 199 out of 200 discoveries that a university claims to own sit for two decades or more.

In Part 2, we will look in some detail at how Texas embraced the dark side of policy, starting with its 1988 policy.

In Part 1, we considered the 1946 University of Texas patent policy--clear, simple, smart--and the 1977 revision that grew more complicated but retained a focus on patents and the rights of inventors to decide whether to seek patents or just to publish. Now we consider how Texas turned its policies from providing resources to enable innovation to becoming an institutional predator on creative work of all kinds.

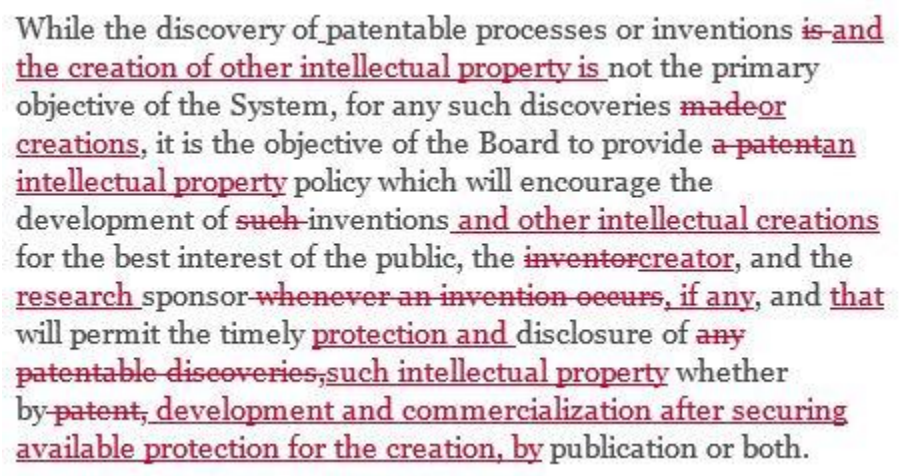
The 1988 Texas Patent Policy

The patent policy undergoes another revision in 1988. The form of the preamble is retained, but the policy is re-titled "Intellectual Property Policy" and "inventor" is replaced with "creator"; "invention" with "creation." Immediately, we are in a different world. Inventor has a well defined usage, and to own an invention means to have rights to secure a patent on it. What one owns is a patent right. In the 1977 policy, this all makes sense: inventors decide whether they want to own (that is, patent) their inventions, and if so, then they work out the deal with the patent committee based on the circumstances. Otherwise, they publish and everyone is done with it.

But in 1988, things are different. The changes make nonsense of the preamble:

> While the discovery of patentable processes or inventions and the creation of other intellectual property is not the primary objective of the System, for any such discoveries or creations, it is the objective of the Board to provide an intellectual property policy which will encourage the development of inventions and other intellectual creations for the best interest of the public, the creator, and the research sponsor, if any, and that will permit the timely protection and disclosure of such intellectual property whether by development and commercialization after securing available protection for the creation, by publication or both.

Take a look at a file compare between the 1977 preamble and its 1988 doppleganger:


While the discovery of patentable processes or inventions ~~is~~ and the creation of other intellectual property is not the primary objective of the System, for any such discoveries ~~made~~or creations, it is the objective of the Board to provide ~~a patent~~an intellectual property policy which will encourage the development of ~~such~~ inventions and other intellectual creations for the best interest of the public, the ~~inventor~~creator, and the research sponsor ~~whenever an invention occurs~~, if any, and that will permit the timely protection and disclosure of ~~any patentable discoveries,~~such intellectual property whether by ~~patent,~~ development and commercialization after securing available protection for the creation, by publication or both.

It's one thing to say that the System does not aim to create patentable inventions, as the 1977 preamble has it. That makes sense. It's entirely another for the System to disclaim creating any "intellectual property," especially when the policy goes off and defines intellectual property:

> This policy shall apply to intellectual property of all types (including any invention, discovery, trade secret, technology, scientific or technological development, or computer software) regardless of whether subject to protection under the patent, trademark or copyright laws.

That's "all types" and not the merely the statutory forms (patent, copyright, and trademark) but the folk forms--whatever people call "intellectual property" when they mean "intangible asset" (if they even knew such terms). The policy definition makes clear that it does not mean statutory intellectual property nor anything that might be owned--"regardless of whether subject to protection under the patent, trademark or copyright laws." That's what "protection" means--ownership of the right to exclude. The preamble uses "intellectual creations"--unable to grasp even conventional wording such as "intangible assets." The preamble here reads, in essence, that it is not the primary objective of the System to create anything intellectual whatsoever. One might ask, what the heck is a primary objective of the System, if not to encourage the work of the mind in all its forms--precisely what the preamble here disclaims, and in doing so denigrates.

The opening move in the 1988 policy, then, is to abstract from something definite and bounded by law--what constitutes a patentable invention--to something bespoke and entirely a creature of policy itself--a specially defined term "intellectual property" which a casual reader might mistake for an otherwise, mostly well behaved standard term. The policy then argues that this general thing, this special form of "intellectual property," which now encompasses most anything meaningful that folks at a university might do, is not a primary objective of the university, and so, apparently, whatever claims the policy might place on such stuff is incidental to the great purposes of the universities involved, whatever those unnamed purposes might be.

The preamble has been shifted in other significant ways beyond the merely nonsensical. Now that "creating" anything intangible regardless of whether there are any laws regarding ownership of such stuff is not a primary objective, the Board takes on itself the responsibility for encouraging the creation of such stuff anyway. Encouraging the development of patentable inventions means, in the 1977 policy, doing those things the get inventions published and used by others, whether or not owned, whether or not patented, whether or not resulting in profits for the university. That is "development" has a specific meaning--not the creation of inventions, but their use beyond the university. But in the 1988 policy, the scope is broadened to all things intangible and development appears to have no meaning at all. Later in the same sentence, we read that the policy will

> encourage the development of ... intellectual creations ... and that will permit the timely protection and disclosure [of these creations]... whether by development and commercialization after securing available protection for the creation, by publication or both.

I've removed intervening words to make the fundamental grammar visible. In short, there isn't any:

> Encourage the development of creations and
>
> permit their timely protection and disclosure
>
> by development and commercialization
>
> after securing available protection
>
> or by publication.

This is, in technical terms, garble. There is no policy need to encourage people to use their minds in the abstract. That is teaching birds to fly, or here, making it appear that they don't generally fly (lazy birds) but for an encouraging policy statement.

"Disclosure" is left hanging and no longer refers to the means of disclosing by patenting or publishing. One does not disclose by development or commercialization. The idea of patent as publication is lost entirely.

Furthermore, one does not "protect" creations by "development and commercialization" or by "publication" (other than in some strange sense of priority, perhaps). The sentence is now nonsensical. One might develop an invention by commercialization (company efforts to make and sell a product) or by other means--say, networked, non-market collaboration, as is often the case with open source software and with industry standards, which often never have a commercial product form. No one buys and sells TCP/IP, for instance. It's a standard. It gets developed (the standard may change). It gets used. It's not "commercialized." It's not "protected"--it's negotiated, it's stable, it's valuable not as a source of rents based on threats of exclusion, but because of its widespread adoption as a foundation for shared opportunity. Grief on grief not to get this and have the urge to revise a patent policy into an intellectual creations policy labeled an intellectual property policy but really a statement of administrative power by people who are clearly clueless in the face of the task.

It is not at all clear why university creations require "protection" as a matter of policy. It is not even clear why inventions do. A patent does not "protect" anything. A patent grants a right to exclude for a limited time in exchange for full, open publication. If anything, a patent makes an invention vulnerable--to work-arounds, to blocking improvements, to legal challenges, to abuse by patent owners. In a company setting, one might use "protect" with an invention as a shorthand for "exclude others"--competitors, specifically, who might sell their own version of the invention without having the luck or spending the money to work it up into a decent product first. Lacking that, one might use "protect" in the sense of "build up a portfolio to impress investors, or to trade with others with desired technology, or to countersue nasty folks and little folks who might mess with us or mess up our plans." But in a university, these uses of "protect" are empty.

The point of development--in the 1977 policy, as "progress" in the U.S. Constitution--is for the public to take up and use and improve the invention--spread, diffusion, development, progress, public benefit. To "protect" an invention (regardless of whether there are laws that give one the right to do so)--and worse, to "protect" any "creation"--in a university is to claim that before anyone might use or improve the creation, it first has to be subjected to a right to exclude, to be kept from everyone else. That, too, is nonsense.

Given that the preamble to the 1988 policy is garble, we might expect the rest is, too. Let's see. The policy defines intellectual property broadly, claims this broad scope as its area of application, and then becomes a tangled mess trying to exclude stuff it ought not to have claimed. From a drafting perspective, this is the work of an uncertain, incompetent hand--claim everything (that which is possible and just to be safe also that which is not possible) and then fumble the exclusions so that any ambiguity can be argued remains within the scope of the general claim. "If we didn't exclude it clearly from the scope, it's not excluded." That's a mindset of folks who don't know how to draft a clear scope for what the university should have some reason to take an interest in. Here's the tangle:

> This policy shall not apply to faculty authored written or visual work, except computer software, produced in the author's professional field, which property shall be owned by the creator; nor shall the policy apply to intellectual property produced as a work for hire in the performance of a contract with the System or as a part of an employee's assigned work responsibilities, which property shall be owned by the Board.

Funny, the policy still applies to faculty-authored musical works, sculptural works (are sculptural works "visual"?), choreographical works, database works, and anything else that's not "written" or "visual." Computer software is not excluded, even though it is often faculty-authored written work and is included in the category of "literary works" by the Copyright Office. As for "intellectual property produced as a work for hire" the policy here means "copyright" and merely restates the effect of federal law--the employer or commissioning party owns a work made for hire. What the policy does not do is explain when, if an "employee" is a member of the faculty, a work is "part of an employee's assigned work responsibilities." Does the policy claim that any work produced within the area of a faculty member's appointment (as, say, a professor of history) is "within the scope of employment" because it is an "assigned work responsibility"? Even if it is not a primary objective of the System that anyone create anything (and so, it's hard to gather how anyone could be much assigned to create anything, except incidentally, or by accident). We don't get an answer on the point that a policy might clarify--such as, "Faculty-authored works are not within the scope of their university employment unless the work is expressly assigned by the university in writing, identified as a work made for hire, the commission is voluntarily accepted by the faculty member, and the work is done in exchange for acceptable consideration beyond the regular pay and benefits attending to the faculty member's appointment." That would be useful in a policy. Mais non.

We will leave little disturbed the drafting irregularity by which a policy both asserts that the policy does not apply to certain works and at the same time declares as a matter of this same

policy that the Board owns those works. It cannot be both, except in the fantasy world of university administrators playing at writing policy.

We now turn to the effects elsewhere in the policy of replacing "invention" with "creation" and "patenting" with "development and commercialization after securing available protection for the creation." Again, "creation" is randomly broad, where "invention" was specific, limited, and stable. "Patenting" pertains to a specific, limited form of publication by which a personal property right is granted. "Development and commercialization" are a class of activities that might operate on a "creation"--but they are not parallel with publication in the same way as patenting is. In the 1977 policy, the pairing has to do with publication without patent ownership or publication with that ownership. In the 1988 policy, the pairing is"development and commercialization" with ownership or publication. What's been lost? The idea that a university might publish with ownership without demanding commercialization. The policy has replaced such options with a mandate to commercialize (and without a definition for what commercialization might mean in a policy given to strange definitions).

By the time we get to the restatement of the System's "basic policy," it is clear that the substitution in terms has wreaked a huge change:

> It is a basic policy of the System that intellectual property be developed primarily to serve the public interest. This objective usually will require development and commercialization ....

In the 1977 policy, this statement applied to *patents*, which were to be developed in the public interest. That is, if an ownership position is to be taken via patents, the public interest must be served--even if whatever the public interest is and whoever it is who has standing to represent that public interest is left unstated. But in the 1988 version, the claim is expanded to "intellectual property" (of all types, whether ownable by law or not, "intellectual creations"--ideas, works, inventions, what-not) and yet the purpose moves from "requiring patent development by non-exclusive licensing" [with the prospect of other forms of licensing as needed] to "development and commercialization by [a list of licensing possibilities]. That is, developing patents by providing broad access (which permits uses of all sorts) has been replaced by a restricted mandate ("development and commercialization" of the intellectual property--meaning the subject matter, not the laws by which the subject matter might be owned. In short: "whatever you make, if the System claims it, will be offered for *commercialization*, not merely for public use."

In this effort, the creators of 1988, even though the claim to their work is broader and more invasive, have less control by policy than the inventors of 1977. In 1977, the policy stipulated that

> any person affected by this policy who...makes a discovery ... should **retain the ultimate right to decide** how it is to be made public--by publication, by patenting, or both.

Here's the 1988 version:

> Any person affected by this policy who ... creates intellectual property ... should **have a major role in the ultimate determination** of how it is to be made public--by publication, by development and commercialization after securing available protection for the creation, or both.

Another sea change. Rather than the academic freedom that the 1977 policy recognized, the 1988 policy, uses deceptively similar wording to change an "ultimate right to decide" into a "major role in an ultimate decision"--meaning that those creating work no longer have the right to decide, just a role. And we are talking here about all "intellectual creation"--not merely patentable inventions. Before: inventors decided whether to patent or not. Now: inventors get to play a role. Before: inventors were "staff"; now they are "academic or non-academic employees."

Now let's look at the circumstances laid out by the 1988 policy to indicate the degree of the System's interest in "intellectual property." Remember the four categories from the 1977 policy--

(1) independent (own time, no System resources);

(2) state support--inventor's choice to patent; if so, review for System interest; if none, independent;

(3) grant support--conditions of award take precedence over policy;

(4) industry support--exceptions to policy require prior approval, including the System president.

Now for the 1988 policy. The four categories are reduced to three, with industry-supported inventions merged with government grants. And rather than tracking the forms of support, the new circumstances track whether work is "related" to one's "employment responsibilities." Clearly, the idea of employment (work for the benefit of an employer) has taken precedence over the idea of appointment (work for the benefit of the public). This, too is a sea change. Here is a paraphrase of the new list of circumstances, with notes on what has changed. IP in the summary means "intellectual property" as defined by the 1988 policy.

1. Unrelated. Adds **IP "unrelated" to the "employment responsibility**" plus independent; adds that unrelated IP is the "exclusive property of the creator"; no System ownership claim or financial interest.
2. Related. IP "related" to "employment responsibility" or on System time, or with State funds, or using System facilities. **Before IP is "disclosed to the public" or "for commercial purposes" or published, creator must "submit" IP to the patent committee for a determination of System interest.** Long statement that component universities can make up their own categories and procedures. **Mandatory for all employees to assign rights to intellectual property and patents to the Board.** Royalties shared 50-50 unless a component establishes a different schedule.
3. Grant support. Adds support from "for profit nongovernmental entities." "Subject to ownership by the Board." Contract terms take precedence over policy. Employees shall "Make such assignment of such creations as is necessary in each case in order that the

System may discharge its obligation, expressed or implied, under the particular agreement."

The first condition establishes a fundamental change from own time/own resources to whether a creation ("intellectual property of all types") is "related" or not to "responsibilities." *Related* is a broad, undefined term. How would anyone know whether something is *related* or not? If something is "within the scope of employment" then there is some document or pattern of dealing that makes clear that scope. But related carries the sense of "associated," and "similar to," and "having its origins in"--all broader than within the scope of employment, within what the employer has directed the employee to do, and the employee has promised to do. To use *unrelated* then means to take the complement of *related*--everything that cannot be so *related*.

The wording puts in doubt what an electrical engineering faculty member can do, even working on her own time and with her own resources. She could start an electrical engineering hobby at home--building circuit boards to control home appliances remotely--and that could be *related* to her "employment responsibilities" because it's electrical engineering. The effect is to dramatically reduce the scope of what one's "own time" is. In 1977, it was whatever one decided to do while not working on university work. It was a personal choice to make the distinction. In 1988, there's no choice within one's area of "responsibility"--which could be as broad as field of expertise, or area of appointment, or departmental domain, or teaching assignments. The policy is silent on just what is meant--which is to say it is ambiguous in introducing the change without explanation.

The second category introduces onerous obligations that run counter to academic freedom and reverse entirely the tradition of policy going back to 1946. In 1977, for state-supported work the inventor had the right to decide whether to seek a patent and when and how to publish. State-supported work included work "on System time" and with "System facilities." This provision was consistent with academic freedom and with the idea that the System existed to make resources available to faculty, a matter of subvention, not employment (or procurement).

Only when an inventor chose to patent was there an obligation to submit the idea for review and determine the System's interest. But eleven years later, no one can disclose or use or publish any intellectual creations made with any form of state support or which are related to "employment responsibilities" without first submitting them for System review. One observation: no one realistically could comply with this policy requirement. It would bring the university to a halt. Every email, every idea, every bit of dance step, every discovery has to be pre-screened, and if the System decides it wants to own that creation, then the creator is required to assign the creation to the Board.

When a policy is drafted so badly it cannot possibly be followed, and its requirements are therefore only selectively enforced, one may well wonder if the policy itself has any authority in areas of doubt or inconsistent practice. If the policy stated something of the form "the System shall own anything it decides to own" it would not be far from the effect created by the 1988 policy language. But putting it in such words would also create questions as to how the System has such authority to compel assignment of what amounts to federally established personal property--in works of authorship and patentable inventions. And that's perhaps the point. By

using obscure, almost impossible to follow language, the policy works to suppress the questions that a plain statement would raise regarding its authority.

Finally, we come to the third category--in the 1988 policy, all creations resulting from grants and contracts and gifts of any kind, from any source, are "subject to the ownership by the Board." A new office of "Asset Management" gets added to the "Intellectual Property Office" (formerly "System Patent Office") to approve efforts to gain "favorable treatment for the creator and the System" in such funding agreements. A third office--the Office of General Counsel also is introduced as being involved in the preparation of model agreements--more bureaucracy layered on each possible thing that might involve creations made in sponsored settings. But no such office is proposed to advocate for favorable treatment of creators with regard to the System. So, as between the Board and the creators, when the System comes to negotiate with research sponsors, one might expect that the System negotiates for itself, because it asserts that it has the right to own whatever creators may happen to create.

The remainder of the 1988 policy is taken up with issues of holding equity in companies taking licenses from the System. It's noteworthy for strange, tangled language of its own. One example: "employees of the System who conceive, create, discover, invent or develop intellectual property may hold an equity interest in a business entity that has an agreement relating to the research, development, licensing or exploitation of that intellectual property." Why is the employee right to hold equity limited to this string of five verbs? What about creators who, um, author or build or improve or collect or solve? Apparently the System forbids such creators from holding equity. And why limit agreements with the System to four nouns? Why not also agreements that, say, lease space or that manage services related to the intellectual property ("creations")? And what about equity in "business entities" that aim to design around the System-owned intellectual property? Are such holdings forbidden by policy? Or not? No one could possibly know.

Having completed a careful reading of the 1988 policy, one might be led to read in a new light the next section of Texas policy, having to do with the use of alcoholic beverages and advocating the overthrow of the government.

Let's review. The 1946 policy focuses on patentable inventions and establishes that any patents are not the System's, but that inventors owe the System a modest share of any net income they make.

The 1977 policy continues to focus on patentable inventions, distinguishes four categories of circumstances for review, and maintains that inventors have the "ultimate right" to decide whether to publish, to patent, or both. Only if inventors choose to patent and they have used state resources, then they must submit their ideas for a determination of System interest. Federal and nonprofit grant work follows the conditions of the awards and may alter policy. Industry work that would alter policy must be pre-approved by the patent officer and the president.

The 1988 policy changes things substantially. Patentable inventions give way to a wildly broad and indefinite definition of intellectual property of all types that expressly disclaims patent and copyright as limitations on the definition. Certain "faculty authored" "written and visual" works (but not if software) are excluded from the policy altogether. Works made for hire are both

excluded from the policy and asserted by the policy to be owned by the System. System interest in this bespoke intellectual property or "intellectual creation" is determined by the "relatedness" of the creation to an employee's "responsibilities" along with any use of facilities or resources or "time." The System asserts the right to own any such creations, presumably under whatever theory of ownership administrators can dream up--apparently not merely ownership of patents and copyrights. Creators of such creations have only a right to a role in "ultimate determinations" regarding publication and commercialization, and for all "related" creations, are forbidden from disclosure or publication prior to submission to the intellectual property office for review of System ownership interest.

One can begin to see how a university IP policy can morph from one that limits university claims to own patentable inventions but expects a modest financial interest in those inventions that are patented to one that aims to preserve academic freedom but provides for university ownership if an inventor chooses to patent and has used university resources. And from there, one can see how administrators might expand a policy's scope from patentable inventions to everything, and claims to own everything except what the policy is allowed to spit back upfront, and everyone doing anything creative at all related to their university work must report their work first to the administration and assign ownership of whatever it is that the administration wants, retaining only the right of a role in whatever the university decides to do, and a share of any royalties. As for royalties, the university's share in 1946 maxed out at 20%. In 1977, the university's share maxed out at 75%, but only for things inventors chose to patent and used System resources and the like. In 1988, the university share fell back to 50%, but the university claimed most anything that someone might create at the university.

In 1946, there were "faculty personnel and other employees." By 1977, these were "staff." By 1988, these were "academic and non-academic employees." Trustee became self-interested. Governance became management. Financial interest became ownership. And ownership expanded the scope of what was owned and who decided what to do with it. One can see the rationalizations that went into the policy change that turned Texas from supporter to suppressor of individual initiative.

One might say that by 1988, Texas had gone to the dark side, but it took the changes in 2002, where the Board simply asserts ownership over everything except for the exceptions, except where there are exceptions to those exceptions. By 2007, creators have only the right "to give reasonable input"--so much for retaining the right to the "ultimate decision" of whether to patent, or even having "a major role" in determinations of patenting. By 2012, the Board had become brazen enough to claim that it "automatically" owns intellectual property and asserts that it, the policy itself, is an assignment instrument that acts (as with power of attorney) to make the assignment outright on behalf of each employee and before any creations have been created. And by 2012, everyone is an employee, whether faculty or staff or visiting scholars. Students are included if they use university resources, which is hard not to do. Lesson for students in Texas universities--don't let any good idea show up in a Texas lab or the Board may want it. Do you feel hunted by administrators now?

In Part 3, we will look again at the preambles to the 1977 and 1988 policies, and compare them with developments in the 2007 version, watching inventor rights slip away and the stated

purpose of the policy change from getting stuff developed and published to helping administrators prop up their failing fixation on the linear model of innovation.

In Part 2 of this series I compared the preambles of the 1977 and 1988 versions of the University of Texas System patent-cum-intellectual property policies. The 1946 policy was so straightforward that it did not need a preamble. It was clear what the policy did--it limited claims that administrators could make in the name of the university for the inventive work of anyone at the university. The university could make a financial claim--up to 20% of income--and the university could encourage non-exclusive licensing of patents for sponsors of research. Done. Makes sense. Smart.

But there always seems to be someone who wants a preamble, just like there's always someone who wants a mission statement--wasting hours and hours to produce something ghastly. So the preamble in 1977 was:

> While the discovery of patentable processes or inventions is not the primary objective of the System, for any such discoveries made, it is the objective of the Board to provide a patent policy which will encourage the development of such inventions for the best interest of the public, the inventor, and the sponsor whenever an invention occurs, and will permit the timely disclosure of any patentable discoveries, whether by patent, publication or both.

The thrust of the 1977 preamble is (a) to encourage development of patentable inventions while (b) addressing the interests of the public, inventors, and research sponsors, and (c) ensuring timely disclosure of patentable inventions to the public.

Implicit in these points are administrative worries. For the first, the worry is that inventions might not be things that universities are any good at "developing"--to adapt an invention to a practical use might involve work that's not basic or applied research. It might involve what's called "development." In biotech, development often includes a series of clinical trials to test for safety, effectiveness, and risk-benefit economics, plus formulation of a delivery means and all the formalities of registering with FDA. In engineering, development might mean advancing an idea through Technology Readiness Levels, where a university might have a central role up through TRL 3, Proof of Concept, but for later levels, people are designing an actual product, at first laid out "breadboard" style and later buttoned up as a prototype product. In software, development might mean getting contributions from many sources to develop a standard or platform with broad acceptance and use. In 1977, software was still unprotected by copyright and there were no open source licenses (because source, when available, was free anyway), so development meant getting things to work the way you wanted them to work.

In all of this, the worry is that things started at the university were unlikely to get finished at the university and might not get taken up and finished by others either. That's a reasonable worry, though the world is stock full of such unfinished stuff and folks might settle down a bit about it. The university, the thinking goes, was set up to do research, not to build products, not to customize stuff for specific private uses. Maybe a university research program would look a lot different if it were tied directly to a product-making operation. Maybe that would be, in some

circumstances, a really, really good thing. But even in industry, the big research labs have a terrible time pushing anything they do into their own companies' products.

This is a problem of "linear model" thinking--that somehow someone starts with a scientific discovery and through a series of steps that can be articulated as an administratively managed process ends up making a beneficial if not lucrative commercial product. Success stories in this area almost always have to include the lucre part or they aren't properly successful. Benefits, while they could be as modest as someone earned a livelihood for a few years selling some new widget, aren't so dramatic that an exemplary story gets told. There has to be hundreds of thousands of something or other for the benefits to justify the investment of millions of dollars in research. All those millions so Dave and Sandy could sell 800 widgets in two years ain't much of a success, despite what Dave and Sandy might think.

This worry about the linear model is one caught up in trying to construct a story about the purpose of a policy. Here is a version of the thinking as best I can map it out:

Why do all this research? Because other people will use it. How will they use it? To make beneficial products. How are beneficial products made? By industry, backed by investment. But it appears this doesn't mostly happen. Industry folks mostly ignore university research, think it is irrelevant. Thus, to make this development happen reliably, or more quickly, or optimally, or even at all, there must be something additional beyond doing the first part of the research--discovery, invention--that instigates, encourages, catalyzes the rest. This is the place of "technology transfer"--to offer results to industry, and if that doesn't work, to step up the leverage and offer patents on results to investors who profit from the "creative destruction" of capitalism by creating disruptive startups (and selling them to the status quo or sometimes selling them to the public via an IPO).

The possible modes in the thinking are these:

- free to all
- non-exclusively licensed to capable companies
- exclusively licensed to one company (preferably an industry leader)
- exclusively licensed to a startup (preferably venture-backed)
- exclusively licensed to a startup (for future investment, such as state seed funds)
- licensed to a patent management organization (to speculate with, to troll).

In practice, university administrators skip the first two. Free means (to the administrators) no income on top of patenting costs, so that sounds foolish. Yet free can build tremendous goodwill and stimulate ready adoption. Just ask the folks at Berkeley behind SPICE, or at MIT behind X-Windows. Goodwill and broad adoption means one is central to a technology ecosystem, and in the flow of many, many opportunities to do more work--research, consulting, organizing, managing, customizing, planning. So administrators often are clueless about where their money comes from and want money stripped of the context in which it often comes, and supply the context of patent rights ("protection," like prudent high school jocks) instead.

When it comes to non-exclusive licensing, administrators think it is more work that it is worth, and make a virtue of exclusive licensing. This is one of the fool-pitches in the Bayh-Dole rhetoric, that the law gives universities the ability to license federally supported inventions exclusively, where the federal agencies, tied in knots by ideological red tape, could only make things available to everyone on common terms. Of course, the law doesn't give anyone the ability to do exclusive licenses. What it does is prevent federal agencies from requiring non-exclusive licenses and makes it next to impossible for federal agencies to represent public interests when university administrators abuse the system (or simply don't know how to work it). Bayh-Dole does this by placing few restrictions on exclusive licenses (substantially manufactured in the US, preference for small companies, all things being equal), making reports on utilization exempt from public disclosure law, and making march-in procedures so difficult to use no-one has successfully used march-in in the 35 years of Bayh-Dole. Clever, if one aims to be a patent troll with federally supported inventions. Nasty, if one thinks that federally supported research should float the boats for everyone, not just for university patent administrators out to make a buck.

The upshot is, most university patent administrators refuse to default to nonexclusive licensing, fight tooth and claw against sharing expectations in NSF cooperative research center awards, aim to narrow the effect of NIH tools dissemination guidelines, try to get around the standard patent rights clauses that forbid a university prime contractor from gaining an interest in the inventions made by subcontractors, and insinuate that folks releasing software open source are breaking policy and gaming the system to set up private consulting practices. Exclusive licensing is the default effort in most university licensing operations, and any non-exclusive license, even to a research sponsor, undermines the prospect of finding an exclusive licensee to develop a given patented invention.

Of course, such prospecting for exclusive licensees is itself fraught with problems, especially outside the world of solitary hamster-like pharma companies each looking for a big upside on a compound they have to develop on their own, at huge expense, which they can't much share with others. In recent years, pharmas have used biotech startups as the front-end for prototyping risk, but even here they prefer to have exclusive strategic partnerships. To have patent pools on compounds, apparently, is unthinkable. This is the lot of the monopolist product designer. A new product is going to be expensive to develop, and there just aren't that many companies at any given time interested in bidding for an exclusive license. In fact, bidding almost never takes place. Mostly, it's begging--by the patent administrators--or blind luck, or a speculator ready to offer the moon (and later renegotiate or reneg or breach or terminate if they can't resell the right for more than they paid).

The hunt for exclusive licensees--in search of administrative convenience and prospects for bigger payouts--greatly reduces the audience of possible business partners, drives up the costs and risks of a deal for these partners, and makes it utterly unlikely that anyone will ever license the offered patent, no matter how sweetly the non-confidential summary is designed in the technologies available for licensing database. It's a dead-before-arrival approach to technology transfer that meme-driven, fully boxed administrators, willing to say anything to advance their careers, could find attractive. Instead of changing their approach, university administrators have instead expanded their budgets for licensing, expanded the scope of what they claim, and have changed their policies to claim as much as they can upfront, automagically, with impunity and

with only the most distant accountability in terms of effort and income--all so they can focus on making this amazing model of exclusive licensing "work." It never will. Every so often, there is a big hit license. Once every ten or fifteen years. The success is ascribed to the model. In reality, the default exclusive license as the key link in the linear model transition from research to development is the single greatest suppressor of technology dissemination from universities. Really good stuff doesn't become successful as a result of this model, but rather in spite of it. That administrators don't know the difference means they are truly clueless. The administrators who do know the difference but choose to talk up the model anyway are hacks.

Since exclusive licensees are next to impossible to find among industry leaders, university administrators have opted for startups. With a startup, the university can demand an equity position in addition to royalties. The expectation is that the company is more likely to be acquired than that the licensed invention will ever become a commercial product. That means that there is no linear model at work. The link is not between research and development, but rather as a link to making a show of development to attract investors that will buy the company and then do what they want--often, raid it for its engineering talent, change its product direction, or try to sell it off to yet other investors, having replaced its management, changed its name, and rewritten its mission statement. When these companies fail, the patent rights may get sold off in bankruptcy--to patent management organizations, the trolls.

Even though university administrators put clauses in exclusive licenses demanding reversion of rights in the event the license terminates or is materially breached, rights rarely come back and when they do, they are almost never relicensed. Why? Well, for one, the licensed rights may come back, but not any of the improvement patents, none of the "developed" technology, and thus anyone else trying to work the same area is going to run into patents and be working an area of already failed technology--but now years behind. Who but the desperate, the foolish, or the crazily lucky would dig into returned patents? Ah, yes, the trolls. Just exploit the patent position and forget trying to do the development. Wait for it, and then demand a share. In such cases--and universities do play the patent troll themselves (talking 'bout you, Caltech)--the patent has nothing to do with development. The patent is a time-bomb that ready to explode to the advantage of the patent owner *if there ever is development*. This is not the linear model. This is playing at the impossible linear model to set up a leverage point for money when development does happen--but through some other line than one in which a university patent licensing office connects research and development.

This, then, is the welter behind administrative worries about whether university research amounts to something. The administrators dearly want a story that justifies the research, so there will be more funding, especially from the federal government. Government funding is like manna from heaven. Every morning there's more. Success stories ensure that the manna continues, and that there is more, so there's enough to survive and then enough to grow fatter.

There are other stories about how research matters, but administrators don't know these stories and when they do often cannot tell them and even when they do want to tell them, they are laughed at and suppressed by the folks who are deeply invested in the linear model, exclusive licensing, and the prospect of having preferred access to university inventions for their speculative money-making fun. Thus, we get patent policy preambles concerned about

"development" of inventions. Administrators want a model that proves a social benefit to research, and the linear model sounds wonderful, is simple to learn and repeat, and does the job, rhetorically. It's just bullshit, having no regard for the truth. But bozonets thrive on bullshit--it's their daily intake and output. Yeah, I'm being rough on 'em. But look what they have done for three decades. When is enough *enough*?

In 1988, someone thought it would be a really good idea to simply replace invention with intellectual property (later given an implicit definition to mean most anything but especially "intellectual creations," if you understand what that means):

While the discovery of patentable processes or inventions and the creation of other intellectual property is not the primary objective of the System, for any such discoveries or creations, it is the objective of the Board to provide an intellectual property policy which will encourage the development of inventions and other intellectual creations for the best interest of the public, the creator, and the research sponsor, if any, and that will permit the timely protection and disclosure of such intellectual property whether by development and commercialization after securing available protection for the creation, by publication or both.

This made nonsense of the objectives of the System, because to operate a university has got to mean to create a place for the production of "intellectual creations"--that's what happens with scholarship and research. To just have "teaching" what is already known--that's *school*. No need for a university and its apparatus for that.

Now here's what is fascinating about the 1977 Texas patent policy. It addresses the problem of "development" of inventions by insisting that inventors should retain the right to decide whether to take an ownership position in the invention (patent it) or simply publish the invention. The policy forbids university administrators from compelling any inventor to patent or publish. Instead, it authorizes administrators to provide resources if inventors want to work with the university instead of working on their own or trying to interest an invention management organization. The 1977 policy is not concerned with "commercialization" but rather with "development" and its point is that inventors in general know better than administrators whether something they have made will benefit from an ownership position or not. That's the insight of the 1977 policy, and it is a good insight. The 1946 policy simply stated that inventors own their patents (meaning: we forbid university administrators or attorneys or humanities faculty from making a claim that just because university facilities were used, university administrators should control all the juicy results--or worse, as at present, any and all the results, juicy or not).

The 1977 policy ensures timely disclosure to the public by leaving the decision regarding publication or patenting (or both) with the inventors. No university committees have to review things before they are published, if that's the direction an inventor wants to go. And if something is patented, the policy puts time limits on the review for institutional interest and allows administrators to waive committee review to facilitate patenting decisions.

What the 1977 policy does not handle particularly well is the matter of dealing with interests of the public, inventors, and sponsors. The administrative worry is that these interests differ--but it's difficult to break down how without falling into easy but mostly untrue caricatures: the public

wants open access, inventors are selfish egotists, and sponsors want everything for themselves. The public is an abstraction. It's hard to say what the public wants--the public rarely agrees and when it agrees, we often regret it. Inventors, especially university inventors, are in my experience anything but selfish or egotists. There are selfish people at universities, and egotists as well, but inventing does not make them this way--and managing one's own inventions may even turn a selfish inventor to recognize the importance of help from others. The prospect of ready money--especially money endorsed by a university licensing office--may do more to turn university inventors paranoid or grasping than anything else. The mere existence of a university program with a mission (stated or implied) to make lots of money from licensing is enough to deform the characters of folks unused to the idea, having chosen an academic career rather than a sales job. But if the university says going for the money is righteous, well then....

Sponsors, too, often argue for things the caricature doesn't account for. Sponsors often don't want an exclusive right--especially industry leaders. They don't want to be saddled by exclusive license with a monopoly interest and then accused of using their market power to prevent or delay the development of whatever they took in, and they surely don't want the poison apparatus that university licensing offices rig up to go along with an exclusive license--demands for best efforts to develop a product, milestones, right to cancel the license if milestones aren't met, right to audit, penalties for under payment or late payment, limitations on sublicensing and right to review sublicensing, demands for venue and governing law... on and on, poison upon poison.

Some sponsors even encourage inventors to patent, even when the sponsor doesn't want a license at all. Other sponsors just want to be left alone. They would be happy if the university said "we will never sue you for infringement of stuff we have patented, because if you are using our stuff, our work is successful--what we want in exchange is acknowledgement, that's all." But no university to my knowledge has done this, thus keeping alive the bitter exchanges. Other sponsors would dearly love it if the university and its inventors wouldn't file at all. Of course, some want all the rights, often when they have proposed the research and supply the problem or technology to work on. Other sponsors don't want anything ever published unless they approve, fearing unfavorable outcomes. Some nonprofit sponsors--such as private foundations trying to find a cure for a disease--want all the rights so they can combine those rights with work at other institutions and make a platform of rights available to anyone willing to work on the problem with them.

The point is: there is no one monolithic sponsor view on patenting. There is no way to represent "sponsor" interests in a simple document. There is no way that a university administrator, having obtained ownership of patent rights, will be any better at making a decision than might an inventor, a principal investigator (who may not be an inventor), an independent arbitration panel, an industry professional association or standards organization, or a judge.

The 1946 Texas patent policy simply stated the guideline that sponsors ought to expect a non-exclusive license, regardless of whether the university had an interest in an invention made by university personnel. Perhaps that is the best anyone can do. The public is no monolith, nor are inventors, nor are sponsors. Furthermore, there are more players. The government--federal, state, and even city. Industry, but not the part doing the sponsoring. The other folks working in a lab, and researchers at other institutions, and those institutions, trying to support their own regional

economies, and the people who are supposed to be benefiting from all that research. And, of course, the elephant--the administrators who think about the System and align their own interests with those of the System.

Dealing with this range of possible competing interests is no more the domain of university patent administrators as is commercial product development. Certainly, adding more categories of what might be owned by the university doesn't do much to address the general case of dealing with these interests. One might better reduce the concerns any of these groups might have by choosing research sponsors thoughtfully and by clearly stating goals for various research projects and sticking to those goals. One might also follow the 1946 policy and get the university mostly out of the patenting business, just as it largely stays out of day-trading, lotto-ticket buying, and selling automobiles. A university provides the logistics and governance so a bunch of people can teach, develop professionally, do research, and consult--mostly as it strikes them. This is the crazy--good--contribution of a university. Tame it, domesticate it, turn it into a manager's paradise, and it's sterile.

At least Texas managed to remove from its policies the requirement that the staff owes the administration "cheerful acquiescence" in obeying policies:

> 8.3 A state university being a public enterprise of maximum social importance, it is the duty of all persons connected with it to be as civic-minde as possible. It is also a duty to cooperate with the Board in carrying out the purposes and policies of the Board which are deliberately considered, usually by both the Board and the several faculties, in accordance with law and designed to attain the best educational results with the resources available. The Regents and all administrative officers are entitled to the cheerful acquiescence of all staffs in carrying out the policies duly adopted. At the same time, administrative officers are expected to listen with an open and appreciative mind to criticisms and suggestions coming to them from members of their staffs.

It may be that tolerating renegade willfulness, with all the risks to administrators and their delicately worded rules, is the one thing that most advances the prospects of innovation arising from university work. Better to have hundreds of self-directed talented folks than a herd of fearful sheep. But to deal in renegade wilfulness requires administrators with a desire for extra work and the use of real-time, not policy-prescribed, innovation-tuned judgment.

I've discussed already how the 1988 policy makes a total mess of the preamble, substitutes a goofy definition of intellectual property for invention, and makes it appear that the university doesn't aspire to produce "intellectual creations" but still desires that each and every one of these creations will be "developed" in the public interest. The 1988 preamble is worried about protection of these intellectual creations, and its solution is to have them all reviewed by administrators before disclosure or publication, with administrators having a general claim to own most all of them, but getting to pick and choose which ones for which they will actually

assert that ownership. I can't imagine a situation much worse for the development of a creative spirit and personal initiative. This is a happily fascist approach--fascist in its pleasant form of "holistic"--"let appointed professionals take care of you." The state, the public, and administrators are one, and administrators best know the needs of the state and the public.

To enable the 1988 policy objectives, the policy eliminates inventor choice whether to patent. That choice shifts to administrators. This move suggests that administrators were bothered that some inventors were merely publishing and not feeding technology for ownership, licensing, and university money-making to the System Patent Office. So, don't let them decide any more. Expanding the scope of what's to be reported and what is owned by the university operate as expansions of administrative power--but without comparable changes in administrator status. That's a recipe for a fight.

By making the internal reporting come ahead of any publication or disclosure, the administrators created a huge, time-pressured bottleneck in deciding what the System should claim to own. By expanding the scope of what to report, the administrators created a huge logistics problem--but no doubt there was a big bump in the number of "intellectual property disclosures" which also no doubt was spun as a sign that there was greater participation in the university's technology transfer programs, reflecting a desired cultural shift in the university from backward, stuffy ivory tower professors to smart, clued-in entrepreneurial faculty and especially their overly gifted graduate students, all of whom cheerfully acquiesce in the requirements of policy. Any bump in disclosures, so the impression goes, could not possibly have been due to an expansion of the definition of what must be disclosed. I have never seen a university technology transfer report that attributed changes in disclosure rates to changes in policy. Never happens.

Now look at the 2007 policy preamble:

> Purpose. To balance the interests of the many contributors to the substantial creation of intellectual property at and by U. T. System, the Board of Regents promulgates these rules on intellectual property with the purpose to (a) provide certainty in research pursuits and technology-based relationships with third parties; (b) create an optimal environment for research, development, and commercialization opportunities with private industry; and (c) encourage the timely and efficient protection and management of intellectual property.

In the earlier versions, development of inventions (or intellectual creations) was the first objective. At least development has some public spiritedness about it, even if the linear model that underlies the desire is itself largely bogus. Administrators aren't expected to have depth--even when they do!

But now, in 2007, the first objective is purely administrative--to "balance" the interests of "the many contributors"--so instead of three that matter (the public, inventors, and sponsors), we have only the indication that there are many. The idea is not so much that these will be named later and dealt with, but that there are so many that no one could possibly sort them out, and so administrators will have to "balance" their interests--which is shorthand for "disregard" or "play

favorites" or "focus at least on what administrators need to survive the wonky approach to licensing that they have publicly committed to."

We get three objectives, then:

(a) certainty in pursuits and relationships
(b) optimal environment for opportunities
(c) protection of intellectual property (still defined expansively and folksy)

The policy apparently addresses these three objectives by demanding institutional ownership over a broad expanse of creative work involving a broad expanse of employees and non-employees over a broad expanse of their activities, all but eliminating the role of inventors to decide on matters of ownership, development, or licensing, and to focus efforts at each point on "commercialization" rather than, say, diffusion or broad access.

The 2007 policy treats as an administrative virtue what the 1946 and 1977 policies forbade. Personnel are furthermore forbidden to use any System facilities and the like for any development or commercialization "outside the course and scope of employment." That is, folks cannot use university stuff except for what they are directed to use it for. To save their jobs, reputations, and careers, they must accept that if they do use any facilities in their work, they have agreed to alter their scope and course of employment to encompass whatever it is that they have done.

The clever administrative idea is to define the course and scope of employment as anything that someone does with facilities and the like. Instead of accepting that the university directs very little of what faculty and students do--that whatever money they receive, most of it is not for employment but for appointment or support of scholarship--the policy trick is to make it appear that whatever people do has been assigned to them by the university in the abstract, on threat of sanctions for unethical use of public resources otherwise. This is predation in its finest, unapologetic administrative form. Instead of supplying a teaching and research environment suited to a wide range of possible uses, exploited by personal initiative, for which the university properly claims no right to ownership and properly forbids administrators from seeking such ownership, the 2007 policy here aims to capture all such activity as if it arose in employment, and that the only justifiable use of university facilities is for employment. All your intellectual creations are belong to us. Why not make that the policy statement? There's no point in elaborating, because the rest of the policy hinges on administrators making up whatever the policy is supposed to mean, since it is so poorly written no one else has the time to figure out its true intent. It's left to a few of us just to document the incompetence and ask why the Regents and faculty tolerate it.

The first sub-objective in the 2007 policy, "certainty," might seem strange, and in a normal world, it would be. But we are talking about the post-bayhdolapolitic world, and at the center of that post-rational rhetoric is a meme about "title certainty."

Here is some history, from the Purdue Research Foundation:

> On a nation-wide basis, the results support the conclusion that the Bayh-Dole Act has promoted a substantial increase in technology transfer from universities to industry, and ultimately to the public. Certainty of title to inventions made under federal funding is perhaps the most important incentive for commercialization.

See for instance this bit from "Bayh-Dole: Undeniably Effective" (2005)

> The provisions of Bayh-Dole enable small businesses, universities and not-for-profit organizations to take title to inventions developed with federal funds. Certainty of title to inventions made under federal funding is a critical incentive that enables laboratories to partner with industry to transform government-derived technologies into products for commercial use.

Here is Arundeep Pradhan, an AUTM officer, repeating the standard script in testimony in 2007 before a House subcommittee on "technology and innovation":

> The passage of the Bayh-Dole Act established certainty of title in and to inventions conveyed to the universities under the Act and alleviated the industry-sponsor's fears, thereby encouraging additional sponsorship, collaborative efforts, and expanded licensing opportunities.

This argument comes from Sen. Bayh himself, along with two of the "Three Amigos" that take credit for drafting and working the Bayh-Dole Act through Congress. In 2009 Sen. Bayh, along with his former staffer Joseph Allen and long-time WARF patent counsel Howard Bremer published a piece in which they stated:

Furthermore, one of the most important contributions of the Bayh-Dole Act was providing assurance to industry developers that there was certainty of title to inventions, which were candidates for development, and that there would be uniform, predictable systems in place to justify their high risk investments. This is a highly significant factor in commercializing universitybased inventions.

They were fighting against a federal circuit decision in the *Stanford v Roche* case that to their minds hinged on "title certainty"--by which they meant that universities should have certainty with regard to ownership of inventions made with federal support. The federal circuit court had tossed this idea, and they were aghast. But strangely, university administrators are attracted to the idea that the Bayh-Dole Act gave them absolute control--through vesting, or a first right of refusal, or a restriction on inventors assigning to anyone but the university (all rationalizing fantasies)--and this "title certainty" was key to establishing a commercializing link between the lab and companies producing products that incorporated the universities inventions.

And here is BethLynn Maxwell, an attorney for the University of Texas, in a news brief titled "Twenty-Five Years After the Bayh-Dole Act" (2005):

> On a nation-wide basis, the Bayh-Dole Act has promoted a substantial increase in technology transfer – moving technology from the laboratory to the market place -

> from universities to industry, and ultimately to the public. Certainty of title to inventions made under federal funding is perhaps the most important incentive for commercialization.

We will come back to Maxwell's arguments, because they provide some insight into the changes Texas made in its 2007 policy. But first it is worth observing that the claimed history around title certainty and Bayh-Dole mostly repeats political rhetoric. The uncertainty in patent title, if there ever was any, before Bayh-Dole lay in university-affiliated research foundations (notably, Purdue Research Foundation) gaining assignment of patent rights to federally supported inventions, and then trying to get the federal agencies involved to release their presumptive claim of a right to require assignment of inventions to the federal government. There would be no title uncertainty but for the aggressive approach of the research foundations to attempt to own what federal agencies in their funding agreements with universities claimed to control. The Supreme Court looked at the claims for "title certainty" and tossed them. Universities can get title to inventions the way anyone does, but putting in place the appropriate patent agreements. Bayh-Dole does not do anything other than limit what federal agencies can require by way of government interest when an invention with federal support is made at a university (or other nonprofit, or a small business).

So when the 2007 policy puts title certainty as a primary objective, it appears to be participating in an effort to make sure that the university owns all inventions made with federal support--except, of course, that the policy expands its claims to title way beyond that of patentable inventions, and by disclaiming laws as the basis for ownership introduces an even greater title uncertainty--what is the certainty in title to forms of intellectual property that cannot be considered property under any statute? Are these new forms of property created by common law? Who could know until a judge decides? Ah, the $200,000 question.

Maxwell, having reaffirmed that the Bayh-Dole Act was a marvelous success, makes the case for university ownership of inventions:

> A university owning the inventions it creates with Federal funding has another significant benefit -- it protects the right of scientists to continue to use and to build on a specific line of inquiry. This is very important to research-focused institutions because of the way research is typically funded -- with multiple funding sources. Title to inventions to the university/institution is the only way to ensure that the institution will be able to accept funding from interested research partners in the future.

We need to work through this argument sentence by sentence. Maxwell asserts that university ownership of inventions "protects the right of scientists to continue to use and to build on a specific line of inquiry." This makes no sense. Ownership of an invention provides no rights to use. Laws and regulations as well as rights held by others may affect a person's right to use an invention. Furthermore, owning an invention is not the same as owning a patent covering the invention. If Maxwell means "patent" when she writes "invention" it still doesn't work. A patent does not grant any right to use the invention--it grants a right *to exclude others* from using the invention. Scientists with a university owning patent rights in their work are not at all "protected"

and their continued "use" of a "specific line of inquiry" (to the extent that makes any sense) has next to nothing to do with what patent rights the university owns in their work and everything to do with the patent rights others hold in anything needed by the scientists to do their research.

At public universities, such as the University of Texas, what protects scientists is sovereign immunity: a state cannot be sued in federal court unless it agrees to be sued, and patent and copyright infringement both are federal subject matter. If that weren't enough, when one sues for patent infringement, one gets actual damages if one wins. Given the cost of patent infringement litigation often exceeds a million dollars per side, one had better have the prospect of lots of actual damages before bringing suit. It happens, but usually from patent trolls, not established companies. The trolls figure they can settle for less than the apparent cost to defend their lawsuit and still be way ahead financially. Texas owning a patent won't protect anyone from such a troll shakedown, because there's nothing even to countersue about.

So it just doesn't work. University ownership of inventions has nothing to do with protecting scientists. It's just wishful thinking. It's made up. It's repeating what everyone says. But it does not evidence any insight into the conditions on the ground. But it does appear to be a motivation to change the Texas patent policy--if people believe this stuff and don't have any way to examine it.

Continuing, Maxwell argues that "this"--meaning, apparently, protecting scientists by taking ownership of their work--"is very important to research-focused institutions because of the way research is typically funded -- with multiple funding sources." The "title certainty" argument at the base of Bayh-Dole had to do, in part, with problems that arose if two federal contracts supported the same invention, and one federal agency allowed the contractor to retain title and the other didn't. How would such a thing resolve? No one talks about making sure that scopes of work don't overlap--so that two agencies aren't induced into funding the same work, twice. Nor do folks talk about being diligent about ascertaining which statement of work actually sets out the "planned and committed" activities in the project that anticipated the invention. No, it's about the problems that competing sponsors might have in inventions.

But here's the thing. A university taking ownership of everything makes the sponsor problem all the worse. First, there's the problem that more stuff is being owned. Without an ownership claim, there's nothing for a sponsor to expect by way of license, because the sponsor has unconstrained access without the need and bother and delay and expense of a license. Stuff being freely available--what a concept! Freely available runs to a strength of a university, its distinctive role in a research infrastructure in which industry research often comes with strings or is not published at all but rather held as trade secrets. Second, there's the problem of background rights. As a university gathers more and more stuff that it owns, any license with any one company easily may implicate all sorts of other property the university has.

Even the common drafting mistake of licensing a "technology" or "invention" rather than a specific patent right (easy to do upfront in a research agreement, too) may implicate any number of rights that pertain to the practice of that technology or invention. If university patent administrators prudently disclaim all background rights, then any licensee smells a snake because it leaves them exposed to repeated demands for licenses from the same university as

they realize they need additional permissions to practice whatever it is they want to do or build, but haven't discovered all the property that the university is sitting on. "Just tell us all the things you own, and license them all at once," they beg. But it doesn't happen--it can't happen. A university that claims to own most everything also doesn't have a clue what it owns. It only knows--because it has made the assertion in policy--that it really does own most everything.

So now the sponsor or licensee is on guard, has to try to figure out what the university might own and how to secure it all. For its part, university administrators are unacquainted with the problem of royalty stacking, and many of those that do understand the concept tend to like it. A royalty stack happens when multiple demands for a royalty are placed on the same product. Patent owner A demands a 3% royalty on sales. Patent owner B demands a 4% royalty. Total royalties now are stacked--7% of sales. In technology environments, a product can have multiple patents involved, sometimes from participation in a standard, sometimes from cross-licensing, sometimes because one has acquired technology under license, sometimes because one has to pay a troll. An ink-jet printer can have 50 patents. An automobile 300 or more. One nanotech company we worked with spent two years trying to obtain licenses to 20 patents from various universities just to build one product. Each university wanted its royalty, and once the stacking problem became evident, each university wanted its patents to rate better or at least no worse than anyone else's, so they would fuss with each other about revising their royalty demands.

Now consider when Patent owner A and Patent owner B are the same university. And that university claims to share royalties with the inventors of A and B, and those are different people. This means that the university has to figure out what royalty payments go to what inventors. How much for A and how much for B? So the university wants to stack the royalties to solve an accounting problem created by a patent policy's royalty-sharing schedule that has imagined that there will always be one invention per license and one invention per product. Nuttiness, but it is much easier to be dumb than to figure out how to get something right. Thus, especially in work funded by multiple sponsors, university ownership of everything is a much higher barrier than the university ownership of very little. Furthermore, if a university offers all sponsors a FRAND license--fair, reasonable, and non-discriminatory--then it doesn't matter whether the university owns or not. What matters is whether whoever does own, if anyone--inventor, university, sponsor--offers everyone else involved in the research the same FRAND deal. We worked this out and called it a make-use commons. Companies saw what we were proposing and had no problems with it. The simplest make-use commons doesn't require the university to own anything--just that those folks working with the university agree not to sue the university or anyone else that is supporting the work for any making and using of what's developed. Selling--beat each other up.

And now the capper from Maxwell: "Title to inventions to the university/institution is the only way to ensure that the institution will be able to accept funding from interested research partners in the future." This does not follow from anything Maxwell has written and doesn't square with reality. For federal funding, Bayh-Dole makes it clear that "title to the university" has nothing to do with federal funding. The government will fund based on the standard patent rights clause, and that clause does not care whether a university obtains title. In fact, if a university or other approved agent does not obtain title, a separate patent rights clause--37 CFR 401.9--kicks in to govern what a federal agency can work out directly with the inventors, treating them as if there

were a small business, but with fewer restrictions than even a small business--and many fewer restrictions than nonprofits and universities have under their standard patent rights clause. From a federal innovation perspective, the most liberal rights are offered to inventors who do not assign their inventions. A federal agency can request assignment to the government, but if it doesn't, the inventors are in the best possible position. A university wanting to promote invention development then would do well to implement a program of only requesting title when a federal agency indicates that if it doesn't, then the government will request title. Otherwise, leave it to the inventors. That covers federal funding--and that was 57% of UT Austin research expenditures in 2014. Only 12% of UT Austin's research expenditures came from industry.

So there are plenty of options. Texas for decades accepted research funding on a policy that provided that inventors owned their inventions unless contractual terms provided otherwise. Sponsors negotiated what they needed. Bayh-Dole took care of federal agencies. Nonprofits typically are not commercialization partners, though they may want to see commercialization happen, too. If specific terms of research agreements, as a matter of policy, trump policy, then there's no need in policy to state a default that the university owns everything, nor to claim that such ownership is the only way the university could possibly receive grant money for projects involving multiple sponsors. What Texas policy expected in 1946 does just fine: sponsors should expect a non-exclusive license, regardless of whether an invention is owned by the inventors, assigned to the university, or assigned to any patent management organization.

But perhaps Maxwell's 2005 arguments reflect the thinking behind the change in Texas policy in 2007 to change the preamble to worry over title certainty rather than development of patentable inventions. It's a policy written by administrators--and their legal advisors--trapped in a mystery box of political rhetoric and lack of practice experience, and commitment to a mythic, difficult linear model of innovation that just doesn't happen all that often.

The 2007 preamble's other two sub-objectives--an optimal environment for dealing with "private industry" and "encouraging" stuff to be "protected" and "managed" in a "timely and efficient" manner--also aren't well reflected in the policy's practices. The main objective--to balance the interests of all contributors, including one would think "private industry"--competes with creating an "optimal" environment for dealing with private industry. No indication is given about what an optimal environment might be in such a predicament. One might think the optimal thing is to negotiate agreements between sponsors and the university with the lead participation by the investigators involved. That's how Wisconsin did it for decades and it seemed to work. If all sponsors want is access or a non-exclusive right--freedom from hassles--it doesn't matter who assures them of this freedom. If a sponsor wants assignment or exclusive license to some specific invention, then it's better to have the inventors do the deal directly with the sponsor--that's title certainty in all caps, and the transaction undoubtedly will be fast, efficient, and mutually acceptable. The only problem is that it may well cut out the university from its thumb in any licensing income. But then the policy does not say that its primary objective, or any objective, is to make money for the university--just to balance the interests.

When the 2007 policy gets around to the role inventors play, it further reduces it. In 1946, inventors owned outright, owed the university a share of any income, and owed sponsors a non-exclusive license. In 1977, inventors retained the "ultimate right" in deciding whether to patent

or publish their work. In 1988, inventors were reduced to having "a major role" in the determination of how something is made public. By 2007, however, inventors have the opportunity "to give reasonable input on commercialization of inventions." That is, the management of inventors' work has become the work of administrators seeking to find companies to make products. Management of inventions is not the inventors' own right and responsibility as scholars to decide when and how to publish their work, to whom and in what forums to teach what they have discovered or made or whatever.

The history of the Texas policy is one of successive predation on scholarship, without much more than superficial handwaving rationales. Taken another way, however, it is the result of administrators failing to grasp the fundamental defects of the myth of a linear sequence of research to development to products to benefits. Adopting the linear model as a convenient way to explain the value of research to the general public and to legislators leads to a make-believe program of patent management, filled with metrics that gauge effort and success stories that aim to confirm the rightness of administrative judgment, but lacking in the data and accounts that would show what was possible if only such a bizarre, anti-academic, inventor-loathing policy was not there at all. Perhaps, then, one role for history is to see what is still possible but since suppressed or forgotten. Maybe Texas will rediscover its 1946 policy, and throw off the repressive, expensive, unworkable, tangled mess that it presently maintains as policy guidance on intellectual property.

In Part 4 of the series, we will look at a University of Texas Office of General Counsel newsletter article from 2005, which provides some insight into why the System reversed a policy of freedom to one of institutional control, expanded its scope and claims, and thought this change must be a very good thing.

In 2005, BethLynn Maxwell, a patent attorney then in the Intellectual Property Section of the Office of General Counsel for the University of Texas System, published a brief article on the Bayh-Dole Act, "Twenty-Five Years After Bayh-Dole" in the Office of General Counsel newsletter. We know more now about Bayh-Dole than this article evidences, since we have *Stanford v Roche* to set matters straight, but it's useful to take a look the article to get a sense of what University of Texas System attorneys were thinking about Bayh-Dole and how such thoughts may have contributed to changes in Texas patent policy.

The general drift of this brief article is that Bayh-Dole has been wildly successful in getting university technology transferred to industry as the basis for commercial products. Bayh-Dole has done this by giving universities outright ownership of inventions made with federal support. The claim is, then, that university ownership and licensing of patents, especially exclusively, is a good thing, endorsed by federal policy and proven by all the reports of success.

The problem with this line of reasoning is that there's little to show that Bayh-Dole has been wildly successful as advertised, and Bayh-Dole does not give universities ownership of inventions. The metrics that are published are indicators of activity and expenditure, but universities do not publish the key metrics indicated by Bayh-Dole, including for each subject invention the licensing status and the date of first commercial use or sale. Universities do not

even report subject inventions separately from other patentable inventions, and do not report the licensing of patentable inventions separately from other things called inventions.

One would think that if Bayh-Dole really was that successful, people would publish the data that supports the claim, not proxy data that shows how large technology transfer offices have become, how much they spend, and how many licenses they have granted and startups they have licensed to--none of which gives any information about whether inventions made with federal support have achieved (1) practical application with (2) public benefits (3) on reasonable terms--what Bayh-Dole expects. One would also think that if a research university was going to reverse a former policy, it would do so with good data and reasoning to show why the reversal was indicated.

Let's work through this article, then, not so much to pick at it--it's over ten years old and written before *Stanford v Roche*, after all--but rather to examine the frame of mind and practice care that administrators and faculty alike might have encountered from an IP attorney at a leading American research university.

Bayh-Dole: What Metrics?

The article begins by repeating the mantra, once just a comment in *The Economist*, that Bayh-Dole is "probably the most inspired piece of legislation to be enacted in America over the past half-century" ("Innovation's Golden Goose," 2002). (Maxwell will note and dismiss out of hand criticisms of Bayh-Dole at the end of her article.) She may not have seen the article three years later in *The Economist* that reports all the problems ("Bayhing for blood or Doling for cash?," 2005) :

> Many scientists, economists and lawyers believe the act distorts the mission of universities, diverting them from the pursuit of basic knowledge, which is freely disseminated, to a focused search for results that have practical and industrial purposes.
>
> ...
>
> Moreover, there is ample evidence that scientific research is being delayed, deterred or abandoned due to the presence of patents and proprietary technologies.
>
> ...
>
> Even industry is starting to complain about a gold-digger mentality among academic administrators.

These quotes from *The Economist* are not so quick off the tongues and pens of advocates for Bayh-Dole.

Continuing her account of the Bayh-Dole Act, Maxwell states as fact that Bayh-Dole has "increased" technology transfer. She provides no evidence for her claim. That's understandable.

Not only is this just a newsletter piece and not a law review article, but also there is no data whatsoever available to support this position--then or now--unless all she means is that there are more "university technology transfer offices with more personnel spending more money" than before. "Technology transfer" generally means the movement of technology from one group to another--from one industry to another industry (computer science to biology, say); from one country to another (as in the developed/developing meme); or from a lab to industry (in the commercialization meme). Such movement may happen any number of ways--direct instruction, publication, transfer of technicians to new companies or cities, open source/hardware/architecture programs, development of standards, exchange of technology (cross-licensing), and reverse engineering (inspect and recreate). As technology moves, it may need to be adapted to new situations, or the social and technical worlds around it may have to change to accommodate what's new--creating other opportunities for change.

Of course, technology transfer can also involve licensing patent rights, followed by instruction. Or, alternatively, one can learn a new technology and then discover that patents cover its use and get sued. In such a case, the technology gets transferred and then there's a question about whether it can continue to be practiced. A number of universities are exploiting this last approach. Thus, when Apple uses (apparently) technology patented by Caltech, the technology has transferred. The question is whether Caltech will confirm the transfer with a license, for which Apple might acknowledge the priority of Caltech research, or whether Caltech will demand payment--it's potentially infringement, after all, and a patent gives one the right to exclude (in general, though it is unclear whether Bayh-Dole gives one the right to exclude what has met the objectives of the Act--practical application with public benefit on reasonable terms. I argue Bayh-Dole exhausts a patent holder's right to sue at that point).

To track the "level" of "technology transfer," then, one would need to establish a baseline of flows of new technical information and prototypes from university labs to industry settings. One would have to see that these flows result in adoption of new practices in industry, not just new products covered by university-owned patents. For all that, technology might flow from a university lab to graduate students, who when they finish their programs leave for industry where they develop something new based on their training, without any trail of university-owned patents.

Technology transfer then may involve new uses for an existing technology, the development of altered or improved technology, and even technology that obsolesces what was brought in. And technology transfer might result in the development of new products, too. But it does not have to--internal use is sufficient. So is the development of common tools or standards--none of which need rise to the level of commercial product offered for sale. To limit technology transfer to a process of "commercialization" damages the idea and creates ambiguity--there may be plenty of technology transfer in the broad sense, and much less in the sense of a patent license that comes before and is the basis for a n new commercial product developed and sold in a market.

There are arguments that universities taking patent ownership positions on faculty research have impeded technology transfer in this broad sense. The argument is that they are now much less effective in moving stuff "from the laboratory to the market place" because stuff cannot get so readily from the lab. The University of Texas intellectual property policy, for instance, forbids

all publication and disclosure of most anything that an administrator could label "an intellectual creation" prior to its review for System ownership and possible "protection." It is not at all clear--we are reasoning here--how such a bottleneck requirement makes it easier to move new information from the lab to industry. But all we have to go on are stories from the field and reasoning because Bayh-Dole makes the data on utilization exempt from public disclosure (see 35 USC 202(c)(5)). And universities suppress their own data.

For all this, nowhere in the objectives for the Act given by Congress (35 USC 200) is there anything about increasing technology transfer. Even if technology transfer takes place, Bayh-Dole is not about how much transfer happens. It is about making available a particular tool that may be used for some such transfers. Commercialization, too, is not a primary objective. Commercialization is given a mention, but only in the same phrase as "public availability" of inventions and all of that is qualified by the primary interest of the clause, that inventions are made in the US, by US companies and workers.

The Objectives of Bayh-Dole

The first stated objective of the Act is

> to use the patent system to promote the utilization of inventions arising from federally supported research or development.

Use patenting to promote use--commercialization by contrast is mentioned as a matter of creating jobs, not a legislated goal for university licensing operations.

I will attempt here a subtle but critical point. The law says, "use the patent system to achieve a desired effect"; it does not say, "use the patent system, and by doing so you will achieve the desired effect." It does not say, "first use the patent system; then try to achieve the desired effect." The Act's first objective is *promoting the use of subject inventions*, those made with federal support. The patent system, says the Act, should be used *when doing so will accomplish this purpose*. The law does not have as an objective that more subject inventions should be patented. Increased patent counts--more ownership claims--is not a stated objective. Higher patent counts has absolutely nothing to do with any "success" of Bayh-Dole, however proud university administrators might be about making more of something.

Thus, a focus on universities owning subject inventions is also not an objective of the Act--though it might be an objective of administrators and their legal counsel for other reasons. Anyone who sets up a university patent policy and licensing program on the premise that Bayh-Dole expects patenting and licensing misses the point. Bayh-Dole expects such things when and only when they promote the practical application of subject inventions. To own first and then as a separate step to fuss with promoting practical application through licensing completely misses the point.

Bayh-Dole does not set out whether inventions made with federal funding should be patented, or whether universities own or do not own, or whether inventors are allowed to retain rights to their

inventions or assign them to federal agencies. Bayh-Dole does not concern itself with whether universities should try to make money from licensing--and that in itself is a defect.

The stated objectives of Congress as set forth in the Act then are (I paraphrase--read them in full at 35 USC 200) promote use with the patent system, involve small businesses in federal research, promote collaboration between nonprofits and industry, promote free competition, use US labor, protect the public from nonuse and unreasonable use, and lower administrative costs.

One might think from the law's statement of objectives that Congress intended universities to be selective in choosing things to patent, respectful of faculty inventors' decisions of whether to pursue public availability or commercialization or allow rights to go to the federal agency, and to focus on free competition rather than on creating monopolies. But we don't find university lawyers much repeating anything like this, even though these things, too, are supported by a reading of the law.

Certainty of Title

The article then turns to "certainty of title" as the great benefit for commercialization:

Certainty of title to inventions made under federal funding is perhaps the most important incentive for commercialization.

This was another of the rhetorical arguments that was pushed to get Bayh-Dole passed, and has been repeated by advocates since. There was nothing particularly uncertain about title to inventions before Bayh-Dole. Federal agencies contracted for research and had policies with regard to whether they allowed contractors to retain title to inventions or required assignment of title to the federal government. What was uncertain was, in any given case, whether an agency that did not allow a contractor to retain title would grant an exception. In those rare cases where two federal agencies with different policies on contractor ownership of inventions both supported the same invention, there was still the uncertainty that one agency might not allow the contractor to retain title.

The uncertainty of title that got the university-affiliated research foundations upset was what happened if they got ownership of an invention they wanted to try to license but could not get the federal agency that provided the funding to agree to allow them to keep title. That situation was indeed uncertain. Somehow this limited case of getting out ahead of the federal agencies on wanting to patent something got turned into the idea that companies just could not accept new inventions unless they were sure about the title to inventions. True, in the sense that it's a rare company that is willing to pay for a license for a patent from someone who does not have proper right to own that patent. But if there weren't a patent in the first place, there would be no title uncertainty, and if the invention was assigned following federal agency policies and approvals, there also is no uncertainty. It's only if one is in a rush and skips steps that one creates uncertainty. That's what the private invention management foundations were doing. They created the problem, and then blamed federal agencies for it, and then got a law passed that created even more problems, but they got what they wanted--the right to resist claims by federal agencies that public aims would be better served by the government owning any patent rights.

Implementation of uniform patenting and licensing procedures, however, combined with the ability of universities to grant exclusive licenses, are also significant ingredients for success.

Bayh-Dole authorized the creation of standard patent rights clauses to be placed in federal funding agreements, and required federal agencies to use these clauses or show good reason for exceptions. Uniform patenting and licensing procedures *at universities* is an entirely different thing. Different industries use patents in different ways, and diverse technologies benefit (or don't) from various patent licensing strategies--and some technologies prosper best when there are no patents--as is the case, often, with open standards and rapidly changing technologies, especially early on when adoption even for research purposes is an iffy thing.

Universities always had the ability to grant exclusive licenses--but most university policies warned against it. Moreover, most universities did not manage patents. Other than a few scattered licensing offices--MIT, University of California, Stanford--licensing was done by research foundations and national patent licensing agents such as Research Corporation. The big change that came after Bayh-Dole was the abandonment of the external agent model and the move for universities to deal directly in patents.

This combination of factors led to a tremendous introduction of new products through university technology transfer activities. The licensing of new technologies has led to the creation of new companies, thousands of jobs and educational opportunities and the development of entirely new industries.

Nothing to support these claims but heresay, spin, and cherry-picked accounts. Many of the new companies claimed were shell companies created by universities to out-compete existing small businesses for the newly created SBIR and STTR funds. The universities don't report when their startups fail. No tombstone marks the grave. No press releases get updated. There's nothing to indicate, further, that there has been a "tremendous introduction of new products" as a result of university patent licensing. There have been some new products, of course, but the University of California estimates only 1 in 200 inventions has ever led to a commercial product--and that's without considering whether those commercial products are profitable, and furthermore without considering which of those commercial products arose from federally supported, university-patented inventions.

I have commented in detail on Maxwell's next paragraph in an earlier article in this series, so I will only quote it here to maintain continuity for what comes next. Nothing about this paragraph of claims makes logical or practice sense. Patents owned by universities do not protect scientists from anything and universities owning inventions is not the only way that a university can bring itself to accept research funding from sponsors. Maxwell, a patent attorney, surely knew this could not be so. Perhaps it's just a lapse, or a moment of carelessness. But when the writer is IP counsel to the University of Texas System, the opinion even if a lapse carries weight:

A university owning the inventions it creates with Federal funding has another significant benefit -- it protects the right of scientists to continue to use and to build on a specific line of inquiry. This is very important to research-focused institutions because of the way research is typically funded -- with multiple funding sources. Title to inventions to the university/institution

is the only way to ensure that the institution will be able to accept funding from interested research partners in the future.

Practical Application, Not Commercialization

Now we get an account of the "Congressional intent of Bayh-Dole":

Increase American innovation
Promote commercialization of inventions
Encourage participation of small businesses

This is a selective list--I laid out the full set of objectives above. But it's also a misleading list. The participation of small business objective has to do with getting federal research funds to small businesses--the SBIR program was started at about the same time as Bayh-Dole. The Congressional objective was not to somehow stimulate university-affiliated startup companies to "commercialize" university inventions.

As for the second objective the article lists, the full statement of the intent is to "promote the commercialization and public availability" of inventions made by US industry and workers. Here "commercialization and public availability" do not represent a time sequence of commercialization first and then public availability of products. Public availability and commercialization are presented in parallel, just as they are in other sections of the law. "Practical application" is given a definition ("commercialization" is not):

The term “practical application” means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

The aim of practical application is to make and use, with the benefits of doing so available to the public "on reasonable terms." There is nothing here that requires commercialization or even for-profit companies to be involved. What matters, as far as the definition is concerned, is that the benefits of use are available--there need not be any products, unless the patent claims a product. For instance, a standard would be just as important as a product, and a class of products produced by artisans would be as welcome as one product sold by a company holding a monopoly position as an inducement to invest.

One can impose on this definition of practical application and on the statement of the Act's objectives that the "secret, true" intent of the law is to encourage universities to file patents and license them exclusively to companies willing to try to make commercial products, but there's nothing in the Act to support such a claim. There's just nothing that expressly excludes such practice--which perhaps is a defect of the law.

Getting Right the Major Provisions of Bayh-Dole

We now reach in the newsletter article a bullet list of the "major provisions" of Bayh-Dole. I'll comment on each item in turn:

> Inventions conceived or reduced to practice using federal funds are owned by the University – not the Federal Government

Incorrect. Patentable inventions are owned by the inventors, as always. Disposition of initial ownersip of subject inventions is not in the law, not in the implementing regulations. No excuse for such a reading, other than someone who has not read the law carefully. But then, this reading is what most everyone in university patent administration was repeating. It would take the Supreme Court in *Stanford v Roche* in 2011 to explain to these folks that they really ought to read the law.

Universities are encouraged to collaborate with commercial concerns to promote the utilization of inventions arising from federal funding

The objective as stated in the Act is simply "to promote collaboration" between industry and nonprofits. There is nothing that restricts that collaboration to the first stated objective, of using the patent system to promote invention use. Oddly, there is nothing obvious in the law that corresponds to anything addressing such collaborations. One might think licensing of patent rights as collaboration--but that's often the source of anti-collaboration. A more interesting comment on such collaboration is given in the implementing regulations, at 37 CFR 401.1--

An example of such related but separate projects would be a government sponsored project having research objectives to expand scientific understanding in a field and a closely related industry sponsored project having as its objectives the application of such new knowledge to develop usable new technology.

If the government funds the basic work, and a company can step in and fund the applied work, then a university can use the federal funding and the prospect of managing inventions from it, in coordinating with companies for related work--but work also outside the scope of Bayh-Dole.

The list continues:

> Universities are expected to file patents on inventions they elect to own

The universities have the right to elect to retain title to inventions they already own. The law gives a university no right to "elect to own" inventions and thereby somehow come to own them. As the Supreme Court put it, how universities come to own inventions is a matter of conventional patent agreements and assignments. The law limits how federal agencies may require assignment of any invention to the federal government. And anyway, one files patent *applications*, not patents.

> Universities are expected to give licensing preference to small businesses

Correct. The decision whether to give preference is "at the discretion of the *contractor*" according to the standard patent rights clause. In the original version of Bayh-Dole, before such things were amended away, the licensing preference to small business included allowing exclusive licenses to run for the full term of the patent, while exclusive licenses to non-small companies were restricted to no more than eight years.

> Manufacturing should be in the United States

Only with regard to exclusive licenses to use or sell.

> The government retains a non-exclusive license to practice the patent throughout the world

No, the government does not "retain" the right. It does not have the right until that right is convey to it following a title chain extending back to the inventors. The Act requires federal agencies to use a standard patent rights clause that requires contractors to take actions to protect the government's interest and to grant licenses to the government if they elect to retain title to inventions assigned to them. And the license is "to practice and have practiced" the patent, and "practice" meant, in past government patent policy, "to make, to use, and to sell." That's a broad right.

Institutional Control of Patents

So, a bit sloppy, and incorrect on the major point regarding ownership. It's understandable that in 2005, with advocates for Bayh-Dole claiming that Bayh-Dole vested ownership with universities. Eventually a set of university front organizations and forty-five universities, led by their legal counsels and including the University of Texas at Austin, signed onto an amicus brief in *Stanford v Roche* claiming that Bayh-Dole was a vesting statute and universities owned inventions outright whenever federal money touched research involving the invention.

Bayh-Dole provides for a "[d]isposition of rights" in federally funded inventions, 35 U.S.C. § 202 (title), and establishes a presumption that ownership is allocated to the university or other nonprofit, 35 U.S.C. § 202(a). Individual researchers are allocated rights of ownership only if both the university and the federal agency providing the funding decline to take title.

It may well be that university administrators presumed they had title, but that presumption was not established by the Act. The Act, whether by politics or lapse, is silent on ownership. This gap was recognized by the federal agency (now the Department of Commerce) that drafted the standard patent rights clauses authorized by Bayh-Dole. There, they included the (f)(2) requirement--that universities were to require research employees to protect the government's interest, including conveying rights to the government. The (f)(2) requirement does not involve inventors assigning title to universities or patent management organizations. University policies and assignment instruments that require assignment to the university do not meet the obligation of (f)(2). Instead, they attempt--often badly--to circumvent the requirement.

The attorneys, having established a faulty premise, felt at liberty to reason from it to consequences:

> By the same reasoning, the federal government's own rights and interests are subject to circumvention at the whim or by the inadvertence of an individual inventor. The court of appeals' refusal to enforce Bayh-Dole places at risk, for instance, the government's right under the statute to reserve title to itself in certain instances, to take title from a nonprofit that violates the Act's provisions, to receive a license to practice the invention, and to require the nonprofit to grant a license to a third party under circumstances specified in the Act.

The regulation that protects the government's interest is not in Bayh-Dole. It is in the standard patent rights clause authorized by Bayh-Dole. Remember: whatever Bayh-Dole requires has to do with federal agencies, not citizens. Anything the agencies must do flows to universities through funding agreements. Anything that flows to inventors is a result of actions taken by the universities.

If university legal counsels had bothered to read the standard funding agreement--the first, most basic rule of contract interpretation--they would have seen that the federal government's interests do require university action, but not what the universities (and their legal advisors) presumed. Universities were to delegate responsibility to potential inventors, not demand assignment from them. Universities could, of course, demand assignment for other reasons--but not on the claim that federal law, or regulations, or funding agreements required assignment. University attorneys didn't bother to work through the difference. That many attorneys ought not be wrong, but they were.

The Choices of Administrators and Their Legal Advisors

Maxwell ends with an account of criticisms of Bayh-Dole, but then blithely dismisses them because, apparently, there's a consensus that the law is successful, so the criticisms must be wrong:

But, the Bayh-Dole Act is not without its critics; many of whom argue that it does little more than give industry carte blanche to acquire intellectual property rights on technologies supported by taxpayers, thereby giving away taxpayer rights to the inventions. They have also argued that the commingling of academia and commercial enterprises has turned the American university into a sort-of-school-corporation entity that stifles innovation in pursuit of licensing revenue -- which could lead to bias in scientific findings and undermine public trust. And, its critics also say that it slows and hampers research because data that would otherwise be openly shared, is now tied up in patent rights that prevent other researchers from making use of it.

In spite of its critics, most would agree the Bayh-Dole Act continues to be a national success story, representing a successful merger between government, universities, and industry.

Here's the bottom line. It's not Bayh-Dole. Bayh-Dole has its problems. It is not a well written law. It may not even be a well conceived law. But the problems we see in universities are a

failure of administration and of legal counsel. The problems involve incompetent drafting of policy, failure to implement the requirements of the standard patent rights clause authorized by Bayh-Dole, an incapacity to explain to university inventors their rights, and an unwavering belief in the idea that a bureaucrat's thumb should be in every innovation pie, as a matter of national research policy. That university attorneys would cater to this belief is a cause for concern.

It may well be that patent management is a complicated thing requiring the skill of experts. Universities, luckily, are not the country's only repository of such experts, and all too often it is obvious that the folks at the IP wheel at universities have little awareness of their trade. Institutional ownership of inventions (and whatever else) can make patent management even more difficult. Just contracting with a university is difficult, not to mention trying to obtain patent rights. Exclusive licenses make things even more difficult, involving background rights, sublicensing, right to sue, and diligence, among other things. Claiming everything makes things more difficult. More and more noise, less and less signal. University policy requirements and administrative management choices make an already complex thing way more difficult than it ought to be. (I've seen IP attorneys at two public universities fighting as a matter of principle over which state's law will govern the license agreement--"our state will not submit to the laws of your state." Can we just stop now?) Changing patent policy statements to assist overwhelmed administrators rather than enable inventors and principal investigators to manage their affairs, including invention rights, actually makes the whole thing even worse.

It may be that patent attorneys see Bayh-Dole as a golden goose, not because it is wildly successful in transferring technology from labs to companies, but because it creates a tremendous amount of new business for patent attorneys. It could be that simple. When one's hand is in the cookie jar, it's hard to talk about health or moderation. I suggest that the predatory aspects of the University of Texas System intellectual property policy may well be primarily an outgrowth of administrators and legal counsel who see career opportunities advance with increased volume, complexity, and liability. As a result, they advocate for policies that demand more volume of work, create more problems, carry more risk, are more difficult to manage, and give them more power and better pay--all for which they then have a basis to request more budget (and often, that budget comes from licensing revenue--so universities should report their full technology transfer expenditures--absolute numbers and as a percentage of their licensing income).

What has happened to university technology transfer after the passage of Bayh-Dole may have much less to do with insight into how innovation happens and much more to do with being blinded by institutional incentives. Folks have made a career from a chronically failed idea about research-involved innovation. It is convenient to hold to this model, if for no other reason than they think their careers depend on it. Anything else is a threat, er, would be *innovation.*