

The University of Pittsburgh's Fake News Summary of Bayh-Dole

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Published at Research Enterprise September 19, 2017

AUTM a few weeks ago pointed favorably [to a description of the Bayh-Dole Act](#) posted by the University of Pittsburgh. Let's have a look, then.

The post is titled "What It Means for Technology Commercialization." While "It" is ominous [in these Steven King days](#), let's say "It" is the clownish Bayh-Dole Act and not something yet more horrible. We will take Pittsburgh's AUTM-endorsed account of Bayh-Dole section by section.

The Bayh-Dole Act is a federal law enacted in 1980. This legislation, cosponsored by Senators Birch Bayh and Robert Dole, enables universities, nonprofit research institutions, and small businesses to own, patent, and commercialize inventions developed under federally funded research programs within their organizations.

So far, pretty good. Bayh-Dole was enacted in 1980--into effect in mid 1981. And Bayh and Dole did co-sponsor the bill in the Senate. And Bayh-Dole does, indirectly, "enable" universities and others to own inventions made with federal research funds. It's an odd use of "enable," however, and one has to know just enough fake history to have the courage to use "enables." The fake history is that prior to Bayh-Dole the federal government in its contracting claimed ownership of all patentable inventions made with federal support FAKE. If a university got assignment of an invention, then the government made the university assign the invention to the government anyway IT HAPPENED A FEW TIMES. The government stockpiled patents and refused to license them to anyone FAKE, ensuring that the public would not benefit from any of the great research universities were otherwise doing FAKE. Bayh-Dole came along and reversed all this FAKE, by "enabling" universities to own inventions made with federal support.

The actual history is that some agencies of the federal government from the 1950s on allowed universities to own inventions made with federal support--but most universities refrained from doing so. When an invention made by faculty was to be owned, all but a handful of universities referred inventors to invention management agencies, especially Research Corporation, often via a university affiliated "research foundation."

Some agencies, such as the Department of Defense, allowed inventions to be owned by contractors; other agencies--the NIH and later the NSF--used a master agreement, an "Institutional Patent Agreement," with selected universities. Thus, many of the universities receiving federal funds for research could own inventions made with federal support--provided they first obtained that ownership from their inventors. Notably, under the IPA program, the NIH reviewed the university's technology transfer program before allowing a university to join the program. Once a university joined, the master agreement required the university to have a patent

agreement with each research employee under which the employee promised to assign to the university each invention made with NIH support that the university had chosen to file a patent application on. Just to be clear--the university could require assignment of the NIH-funded invention only after it had made the decision to spend the money to apply for a patent. Disclose, decide, own; not disclose, own, fuss around deciding; and certainly not the current rage of own; disclose; fuss around deciding. Pillage, then burn. Not burn, then pillage. You get the idea now.

What Bayh-Dole actually does--directly--is to require each federal agency to use a standard patent rights clause in all research funding agreements with universities unless the agency can justify an exception. Bayh-Dole applies to federal agencies and to a certain class of inventions. Bayh-Dole does not apply--directly--to universities or inventors.

The formal name for the act is the “Patent and Trademark Act Amendments of 1980,” and it created a uniform patent policy among the federal agencies that fund research.

The bold is in the original. Giving the formal name for bill in which Bayh-Dole is included is rather arcane. The Patent and Trademark Act makes various changes to federal patent law. Bayh-Dole is just one part of the bill. Why not add PL 96-517? Or 94 Stat. 3015? Or the enabling regulations, which matter way more to universities, 37 CFR 401, and especially the standard patent rights clause at 37 CFR 401.14(a)? It's as if whoever is writing this piece really has no clue about Bayh-Dole--which, as we will see, is the case. This is just the opening warning.

The idea of a "uniform" policy makes it sound like there had been no uniform policy. But there was a uniform policy, first established by President Kennedy in 1963 and continued with only slight modifications by the Nixon and Carter administrations. [Here's the Kennedy statement:](#)

The prudent administration of government research and development calls for a **government-wide policy** on the disposition of inventions made under government contracts **reflecting common principles and objectives**, to the extent consistent with the missions of the respective agencies. The policy must recognize the need for flexibility to accommodate special situations.

Bayh-Dole superseded this uniform policy with a different uniform policy. The Kennedy policy emphasized agency flexibility. Bayh-Dole emphasizes arbitrary requirements, and embeds those requirements in federal patent law, not in executive branch policy. The problem with flexibility is that some federal agencies did not require assignment of inventions to the government; others used a master agreement; others required assignment to the government; and some--including NASA and what's now the Department of Energy--operated with laws that dictated ownership of inventions.

For federal funding, invention ownership was not any different from the range of possibilities one encountered with private funding for university research. We might say that federal agencies matched their invention ownership positions to their public missions. Some agencies did a better job with this matching than others, but the problem was not that there was no "uniform" approach. There was. And the best advice of the day, the Harbridge House report, made clear

that no single approach to inventions would meet the needs of federal agencies or be acceptable to industry, where companies varied across a spectrum with regard to the role of patents--some ignoring patents and others using patents in various ways, and some entirely focused on patents.

What the NIH and university patent brokers wanted, however, was some stamp of approval that permitted inventions in the area of medicinal chemistry to be patented and handed off as monopolies to pharmaceutical companies. Since this practice was not supported by HEW, of which NIH was a part, NIH patent counsel and university patent brokers had to make it appear that institutional patenting and monopoly licensing was not only the right thing to do for important discoveries in pharmaceutical science but also for all federally supported inventions. A special special case (new drugs as a special case of those special cases in which the only way remaining for the public to benefit from an invention is that if private risk capital is attracted by the offer of a limited monopoly) had to be made to appear to be the general case. Thus, "uniform" was created as a political cover to make all federal agency invention management practices adopt the monopoly model that university patent brokers and the NIH were using to circumvent HEW public purposes. "Uniform" in reference to Bayh-Dole means "arbitrary." It also means "make dealing in patent monopolies appear uniformly virtuous."

The consequence of an arbitrary policy is that as situations vary, the policy becomes inequitable. Under the prior IPA program, for instance, a university had to demonstrate that it has a viable technology transfer program before it is allowed to participate. Under Bayh-Dole, a university does not have to demonstrate anything about its program. It can have an awful program and still it has a chance to own inventions. What value is there in a "uniform" policy that turns a blind eye to atrocious university invention management?

Clearly, from the point of view of administrative slumlords running atrocious invention licensing programs, such "uniformity" is highly desirable. We might posit that those universities that make the biggest deal about the importance of Bayh-Dole run the worst licensing operations. If they ran great licensing operations, Bayh-Dole would not figure in their public communications.

There is almost nothing a university has to do to comply with the standard patent rights clause authorized by Bayh-Dole: delegate invention responsibilities to research personnel, educate them on the importance of timely reporting of inventions, report to the government those inventions that are reported to the university, flow down the patent rights clause in subcontracts. Remarkable as it may seem, *none* of these obligations are to be found in Bayh-Dole. They are all local to the standard patent rights clause. Pulled as it were from the posterior cortex of the same person from the NIH who drafted Bayh-Dole and then tried to finish the work in the implementing regulations.

Whatever additional obligations that arise happen only *after* a university has acquired ownership of an invention made with federal support. Then a pile of mostly useless administrative posturing breaks loose--nothing that advances technology commercialization: time lines to file patent applications, and requirements to report on use (except the agency doesn't have to require reports and the reports are government secrets), notice of government funding and rights placed in patent applications, a license to the government, and fussiness about exclusive licensing (which agencies can waive), and about assignments (which agencies can waive), and about licensing to

small businesses (which agencies can waive), requiring licensing (which to do agencies have to march naked through blackberries and so don't), and how to manage royalty and other income. The complications of the standard patent rights clause show up only after a university acquires ownership of an invention made with federal support. And those complications have next to nothing to do with technology commercialization. Why would any sane inventor assign a federally supported invention to a university? And why would any sane university administrator think that university ownership of such inventions is a really good thing for technology commercialization? Well, apparently some university administrators think this arrangement is *really keen*. We might draw some inferences about their state of mind.

While Bayh-Dole establishes "uniform" rules regarding what a federal agency must require in a default patent rights clause, agencies have broad discretion at each point to waive the rules, decline to act, and generally ignore the rules. Thus, there has never been a successful march-in proceeding, despite thousands of university inventions that have never been licensed or used. The U.S. manufacturing requirement can be waived. The small business preference has no consequences. Assignments of inventions can be labeled exclusive licenses and agencies don't care, despite rules. Universities can use royalty income pretty much however they wish, despite the rules on cost recovery and use of the balance after expenses.

Criticisms of the previous policy prompted this change. Congress perceived the need for reliable technology transfer mechanisms and for a uniform set of federal rules to make the process work.

The odd thing in this is the reference to "the process." There is no process identified in Bayh-Dole. The implication here is that Congress endorsed in Bayh-Dole the practices that universities deploy today to own, market, and sometimes license patents. That is, Congress endorsed the practice of institutional ownership of inventions, to be licensed as monopolies exclusively to favored companies, so that the university could participate in the profit from higher prices and reduced competition provided by patent positions. That, in a nutshell, is "the process."

The federal government's inability to effectively commercialize technologies derived from federally funded research resulted in hundreds of valuable patents sitting around unused.

Now comes bogusness concerning the federal government's patents. According to the Harbridge House report in 1968, some federal agencies had a nearly 100% success rate in commercializing inventions--notably the Department of Agriculture. The NIH's own commercialization rate was 23% for biopharma inventions--comparable with the best rates reported by university-affiliated invention management firms and 5x the rate that those firms reported for federally funded inventions under the IPA program. When questioned by Congress on university lack of success in licensing, university officials admitted that they had not done all that well, but (brightening) that there was great potential for them to do much better. At the hearings on the bills that would be merged to become Bayh-Dole, university advocates recited a single report that there were 28,000 government patents that had not been licensed. What those advocates did not include was that most of those patents were defense-related and that the contractors had declined to take

ownership of the inventions, even though Department of Defense contracting policy allowed them to do so.

We need to pause and consider some real history to work out of our imaginations the fake history implied by Pittsburgh's account. The government's position on the use of patents is captured by this Congressional report by the National Patent Commission in 1945:

The Commission recommends that the Government as a general rule continue to pursue the historic policy of not exercising the right to exclude conferred by patents which it owns; of not attempting to exclude its own citizens from engaging in any enterprise; of not seeking to derive revenue from patents, and of not undertaking control by means of patents. Inventions covered by patents owned by the Government should be available for commercial and industrial exploitation by anyone, with, however, the recourse open to the Government to take different action in exceptional cases.

The National Patent Commission then goes on to discuss exceptional cases, such as where general access is not sufficient to attract the investment necessary to move an invention from its initial condition to a form from which the public can benefit. Much of what then becomes a quest for a "uniform" patent policy is one of debating whether the default should be open innovation, with some few things controlled by patent by the government (and its contractors), or whether the default should be monopolies in inventions, with only those things judged absolutely worthless permitted to fall into the public domain. The Kennedy patent policy describes the conditions under which the government should allow contractors to pursue monopoly positions--namely where private risk capital is necessary to bring an invention to the point of practical application, and then for only so long as is reasonable for that contractor to recover that risk capital from the practical application of the invention.

The implied argument around those 28,000 government patents is that the default is wrong, that these inventions are wasting assets because, apparently, speculative investors would have purchased a monopoly interest in these patents (by exclusive license or assignment), allocated risk capital, and created valuable products. Bayh-Dole's "uniform" policy replaces the default and very uniform government policy that government-funded inventions should be open to U.S. citizens and companies, but for exceptional circumstances. In its place we get a uniform policy of allowing universities to speculate on the future value of monopolies on inventions made with federal support. Unlike inventions held by commercial contractors who already have the "competence" and have "an established non-governmental commercial position" (to use the terminology of the Kennedy patent policy), Bayh-Dole focus on university and non-profits who generally will not have either of these qualities--they will lack both technical competence to produce product and will not have an established commercial position from which to reason about development.

In short, Bayh-Dole creates about the worst possible uniform alternative to the uniform policy established by President Kennedy. The Harbridge House report in 1968 demonstrated how poorly the universities were doing with their patent management compared to other contractors. When contractors had experience and ownership, they used inventions made with

federal support about 25% of the time. And a majority of these contractors were using the invention within three years of the date of disclosure--often before any patent ever issued. Here's the key table from the Harbridge House report:

TABLE 8
CORRELATION OF PATENT RIGHTS, PRIOR EXPERIENCE,
YEAR OF PATENT, AND COMMERCIAL UTILIZATION

Characteristics of Invention	Rate of Commercial Utilization (percent ¹)	Observations (No. Utilized/ Total No. Observations)
Year of Patent		
1. 1962 patent, contractor has title and prior experience	22.8	78/341
2. 1957 patent, contractor has title and prior experience	25.6	50/195
Title (both years)		
1. Contractor has title and prior experience	23.8	128/536
2. Contractor has no title, but has prior experience	13.3	8/60
Prior Experience (both years)		
1. Contractor has prior experience, but no title	13.3	8/60
2. Contractor has no prior experience, but has title	6.6	63/948
3. Contractor has no prior experience and no title	2.2	4/176

¹ Computed by dividing the number utilized by the total number of observations.

The worst possible outcomes came from inventions owned by organizations without experience and licensed to other organizations. Here's the key table from the report.

For universities in particular, Harbridge House's sample showed no more than 10% were "utilized" (See Figure IV-1). An invention management firm estimated that less than 5% of its inventions were licensed, and only 0.5% of its inventions were commercially profitable. Universities slot in there at less than half the use rate of commercial contractors. Licensing--

"contractor has no title"--performs at about half the rate of assignment. Think about that. Universities have adopted a licensing approach rather than an assignment approach, and point to Bayh-Dole as the reason, but the evidence indicates that an assignment approach--place ownership of the patent with a commercial concern that has prior experience--is by far the much better way to go.

Far from persuading Congress on the best way to realize technology commercialization, university patent brokers successfully made Congress think that the best way to do things was the worst way. From the university patent broker point of view, things couldn't have gotten much better, and for good reason, since they had made it the law that the worst way to do things was now the default way to do things. It must have felt magical to realize that a law had just enfranchised a livelihood--patent brokering university-supplied inventions--that had no compelling justification in the broader scheme of federal goals for national innovation through the results of basic research. Perhaps the only thing that can be said of Bayh-Dole in its favor is that it did not make compulsory the assignment of inventions from inventors to the universities that hosted their work--and of course this one decent thing in the law is just what university patent brokers in a very big heap attempted to eradicate, only to be stopped by the Supreme Court in *Stanford v Roche*. Not to be deterred, they press on with an assignment clause requirement they hope NIST will adopt, despite the Supreme Court ruling.

The Harbridge House report concluded that a uniform title policy was not indicated: "a balancing of government objectives appears necessary to ensure that the net effect of the patent policy promotes the government's overall goals." *The only way that Bayh-Dole is successful is if the government's overall goal has been to make jobs for university patent brokers.*

At the time, the government was not willing to grant licenses to the private sector.

This is pure bunk. First, with most federally owned patents, there was no need for licenses--the government refused to exercise its right under patent to exclude its own citizens. National Patent Commission, again:

The general policy of the Government in the past has been not to exclude its own citizens from engaging in any commercial or industrial activities; it has not attempted to exercise the right to exclude conferred by the patents which it owns. As a rule such patents have been open to licensing to anyone who applied, without payment of royalty or other charge and mainly on nominal conditions. Indeed, patents owned by the Government have been open to use by anyone, with or without an explicit license.

The lack of an "explicit" license from the Government had nothing to do with whether an invention was being used. Nor would it have been generally true that where there was no use, the reason was that a monopoly had not been first created, or that this monopoly would have been better managed in the public interest by private speculators rather than a government agency. All that is fool's talk.

Under the Kennedy patent policy,

Government-owned patents shall be made available and the technological advances covered thereby brought into being in the shortest time possible through dedication or licensing and shall be listed in official government publications or otherwise.

That is--license or don't license. Do whatever gets stuff "brought into being" or developed "to the point of practical application" as quickly as possible. Not for the most profit. We might remind ourselves of Kennedy's inaugural challenge: "Ask not what your country can do for you--ask what you can do for your country." This challenge is embodied in the Kennedy patent policy. If contractors are to take up ownership for a time of inventions made with federal support, for federal purposes, then the question for those contractors is how they contribute to the country's goals for those inventions. The answer to this challenge was not "to make as much money as possible by excluding all other citizens for the life of the patent." It was, to develop inventions to the point of practical application and enjoy a limited monopoly in non-governmental markets for three years from the issue date of the patent to recover some or all of the risk capital necessary to develop the invention. After that, we again compete based on quality, price, service, and brand. Bayh-Dole destroyed this ethos, for reasons that the folks at the University of Pittsburgh must somehow find virtuous.

There were two areas that the Harbridge House report found where an agency's implementation of the Kennedy patent policy had caused problems--medicinal chemistry and some areas of research supported by the Department of the Interior, such as desalinization technology. In medicinal chemistry, HEW moved in on territory that had been staked out by the growing drug industry. HEW insisted on interpreting the Kennedy patent policy to require non-exclusive licensing of inventions in medicinal chemistry made with HEW support. The drug companies organized a boycott. It was not that the government would not offer licenses--it was that the government would not grant monopoly licenses. NIH launched the IPA program to grant monopoly licenses anyway, by having universities do the deals. When the NIH tried to make the IPA program government wide in an effort legitimize the monopoly business it was supporting with the drug companies via the universities, that effort was blocked. The NIH's second try was Bayh-Dole, put into federal patent law to prevent the executive branch from easily reverting to a more flexible practice.

The only bits of federal research contracting that we might consider for Bayh-Dole treatment, if we follow the Harbridge House report, were those where

- the invention is commercially oriented but requires substantial private development to perfect it,
- applies to a small market, or
- is in a field occupied by patent sensitive firms and its market potential is not alone sufficient to bring about utilization.

Inventions in this category may arise with any agency and may have had only limited government development toward a commercial application.

In other words, what should have been made "uniform" in federal research contracting was a breakout for these inventions. What would be necessary is a rapid determination that an invention is "commercially oriented" but requires "substantial private development" or is in a "small market" that cannot support multiple providers anyway or is in a field of "patent sensitive firms" and lacks sufficient "market potential" to motivate these firms. Those might be difficult determinations to make in a timely fashion. The alternative, however, to treat all inventions as if these conditions are necessarily true by default does a great disservice to the majority of university-hosted inventions made in basic research, which have their first application as research tools or as methods embedded in software or involve compounds, biological materials, and techniques readily adopted with little additional development work.

The problem for HEW's medicinal chemistry program was that it operated in a field of patent-sensitive firms and failed to provide the follow-on screening of candidate compounds that would have reduced the private development requirements, aggregated additional IP rights into a single platform, which then could have been made available to industry to further test and manufacture in competitive formulations. We might say that Bayh-Dole is a bad response to a poorly conceived program of government-supported research--funding "basic" research but failing to be responsible (or even care much) about the findings. The NIH program in medicinal chemistry stales in comparison to the government work done in support of treatments for malaria and leukemia.

Thus, even in this problem area of medicinal chemistry, the problem was not that the government would not offer licenses. The problem was that the government would not offer monopoly licenses--and the reason that monopoly licenses were indicated was that the government was not willing to subsidize even the initial screenings for activity and efficacy. That this problem could be made into a general case applicable to all federally supported inventions is just poor reasoning and self-interest wrapped up into a political turd and made to smell like a pork roast of technological development to maintain a dominant global position.

We are working through the fake history published by the University of Pittsburgh regarding the Bayh-Dole Act and its "key provisions." "Fake" is too light a word for it, but it's trendy and so people get the general idea. Really, what's going on is material misrepresentation of federal law and regulations in a decades-old institutionally self-serving scheme to defraud inventors of the rights to their inventions. All this is put forward as virtuous, endorsed by law, and wildly successful. What better cover for intellectual fraud. No wonder university technology transfer is so complicated--it is built, in most places, on a lie.

The act ultimately has motivated more and more universities to become actively involved in the transfer of technology from the lab to market.

As David Mowrey has demonstrated, universities were active before Bayh-Dole. Many were involved in the IPA program up to its end in 1978. What Bayh-Dole has done is two-fold. First, it has induced (in a misrepresented form) many more university administrations to take patent management in-house. A few universities had done so before Bayh-Dole--notably, University of California, MIT, and Stanford. After Bayh-Dole, however, many more universities did so. Why? For one, Bayh-Dole was misrepresented as requiring university ownership. Second, Bayh-Dole

was used to create the impression that the goal of federal research was commercialization rather than public benefit arising from the use of inventions. Bayh-Dole does not require commercialization, but it is drafted so badly that it is easy to deceive the casual reader. And since most university administrators and faculty don't read the law or the implementing regulations, it's just too easy to fool them.

The ability of universities, including the University of Pittsburgh, to retain title to and actively license these technologies serves as a tremendous incentive.

"Retain title" here is used without critical context. Here's an accurate statement, if long-winded to make things clear what the University of Pittsburgh means by "retain title," despite the muddied anchor of having read Pittsburgh's statement first:

The ability of university administrators to retain title to inventions when they acquire that title and to attempt to license patents based on these inventions serves as a tremendous incentive to operate an invention management office as an internal university program.

I have no doubt that having a blank check from the government to keep any federally funded inventions university administrators acquire has served as a "tremendous incentive." "Actively license" is nonsensical, of course. It's meaningless--does it mean "actively seek to license" or "maintain active licenses" or "license with continuous diligence"? Oh, it doesn't matter. You see, Bayh-Dole's policy is that the patent system is used to promote the use of federally supported inventions. Licensing has nothing directly to do with Bayh-Dole. Use has everything to do with Bayh-Dole. All a license does--if exclusive--is transfer the monopoly. Nowhere is trade in monopolies made the goal of federally supported research, except by university patent brokers, who think their livelihoods depend on trading in monopolies.

Finally, note the shift from patentable inventions to "technologies." Bayh-Dole does not concern "technologies." It concerns inventions. Technology is a more general term, and inflates the concern of Bayh-Dole, to deal with the problem of patents arising in federal research programs, into a mandate to create monopolies on "technologies" and deal, too, in these monopolies. Thus, one will find that university administrators expand the definition of invention to include "non-patentable inventions" and even "non-inventions."

And thus, this sort of bombast in the [University of Pittsburgh policy on "Patent Rights and Technology Transfer"](#):

The University claims ownership and control of the worldwide patent and intellectual property rights which result from activities of its faculty, staff, and students.

Just like that we move from patent to "intellectual property rights" and extend this claim to any "activity" of anyone, without regard for assignment of task, employment, or even use of resources. For some reason "patent" rights are not treated as intellectual property rights. I guess

the folks drafting the policy were just too darned incapable to notice. So "patent" means "non-patent." Just to pound the point home, at the end we find:

Certain discoveries and inventions, including trade secrets and know-how, **may not be patentable** but may have material commercial value or potential as revenue producers. These **accomplishments** are **subject to the same policy as any patentable invention** and will be considered by the Technology Transfer Committee and the Office of Technology Management on an individual basis.

First, the mind-bending equivalence of discovery with trade secret or know how all wrapped in the abstract "accomplishments." But then, without a theory of patent ownership in policy to stand on, these *accomplishments* are also claimed under the patent policy. That is, the university claims to own faculty "know-how," at least if administrators think it has "potential" as a "revenue producer." The university owns your work if administrators think they can make money from it, regardless of whether it is patentable. That's pretty much bombast. We might see why administrators at the University of Pittsburgh might venerate Bayh-Dole if they see in the law a mandate to be what they are.

The description of Bayh-Dole continues with an odd selection of "key provisions":

- The University is entitled to retain ownership of any inventions created as a result of federal funding, unless the funding agency informs the University up front that the agency will retain title to inventions derived from the funded projects because of specifically identified "exceptional circumstances" or other specified conditions.

"entitled to retain" deliberately conflates ownership with regard to federal agency claims with ownership with regard to an inventor's initial ownership of an invention. The university is in no way entitled to obtain ownership of inventions by Bayh-Dole. The Supreme Court in [Stanford v Roche made this crystal clear](#).

Stanford . . . reads "retain" to mean "acquire" and "receive." That is certainly not the common meaning of "retain"

The Bayh-Dole Act does not confer title to federally funded inventions on contractors or authorize contractors to unilaterally take title to those inventions; it simply assures contractors that they may keep title to whatever it is they already have.

Administrators at the University of Pittsburgh apparently find it acceptable to thumb their policy noses at the Supreme Court. Here's what administrators write regarding Bayh-Dole in the "[The Pitt Innovator's Guide to Technology Commercialization](#)":

The federal law **gave universities title** to inventions developed by their faculty and staff using federal funding.

And later:

The federal government supported that goal with the enactment of the Bayh-Dole Act of 1980, **effectively giving universities title** to federally funded university technologies

Pittsburgh administrators apparently refuse to accept the Supreme Court decision and correct their representation of Bayh-Dole. It would appear to be contempt of court for a university to persist in claims about Bayh-Dole after the Supreme Court struck down those claims. Notice in the second passage how "inventions" has changed magically into "technologies" and the adjective "university" has been added, as if these technologies are outright the university's. Rather seems like conversion, or adverse possession, or eminent domain. Take your pick.

"as a result" is overly broad. The scope in Bayh-Dole is "conceived or first actually reduced to practice in the performance of work under a funding agreement." Bayh-Dole's policy statement uses "arising from." The implementing regulations take some effort to make clear that the determining elements are the "planned and committed activities" of a sponsored project--that is, look to the statement of work--or that the inventive work has "diminished or distracted" from those activities--in which case, look to the use of the project's budget or to the failure to complete proposed work.

"The University is entitled to retain ownership of any inventions created as a result of federal funding" shows a fundamental ignorance with regard to the law. Bayh-Dole applies to federal agencies. It requires federal agencies to use a default patent rights clause. That clause may be tailored in various ways. Bayh-Dole does not give a university any general right to inventions. Each funding agreement distributes whatever rights in inventions are available, based on the patent rights clause that is included. Thus, it is each funding agreement--in the form of a federal contract--that controls the disposition of subject inventions.

As for the goofy attempt at qualifying the misrepresented general claim, the account here manages to work in "exceptional circumstances" but fails to recognize that an agency can modify the invention requirements in any number of ways. Only one of those ways is that the agency requires assignment of title. The agency cannot "retain title." It never has title to begin with. All an agency can do in a contract is refuse to allow a university, if the university obtains title, to keep that title. Gosh, clarity would be a good thing. How can people operate with such rot in their heads?

- When a University innovator discloses the creation of an invention derived from federally funded research, the University has two months from that date to disclose that information to the appropriate federal agency. The University also must patent all inventions it elects to own and commercialize.

"derived from" is even broader and wronger. See 37 CFR 401.1 for the discussion of how the scope of subject inventions operates. The conception or actual reduction to practice must be specified ("planned and committed"). Something may be derived from federally funded work and not be at all a subject invention. Applications of discoveries, inventions made using equipment

purchased for a project. These may be "derived" from federally funded research but are not within the scope of Bayh-Dole's definition of subject invention.

"innovator" and "creation" are inappropriately broad. *Inventor* and *invention* are the proper terms here, since we are dealing specifically with Bayh-Dole. Except that at the University of Pittsburgh, apparently the proper term (in its ugly way) is more like *accomplisher*.

"must patent." No. Basic confusion. Instead, try "must file patent applications."

"it elects to own and commercialize." More confusion. The university does not elect to own anything. It elects to retain what it has come to own by other means. Further, what it does with the invention does not come into the decision to retain ownership. Bayh-Dole does not require commercialization--its mandate is use of inventions using the patent system as indicated. I doubt the folks at Pittsburgh can give a coherent account of what they mean by "commercialization" anyway. Likely they mean, in practice, trading in monopoly patent rights to produce revenue for the university while calling the effort virtuous. That is, "commercialization" means, as well, speculation in the future value of anything that can otherwise be held behind an institutional paywall. Commercialization means, in that case, also non-commercialization. But this is just speculation.

Here's a diagram prepared by the University of Pittsburgh to describe the "process" (there's a second diagram, with gears as heuristics, for startups):

PITT'S COMMERCIALIZATION PROCESS



It is worth asking what's missing from this diagram. First, there's no acquisition step under which the university negotiates assignment of an invention. That part is entirely suppressed, and for good reason. It's part of the lie that that step doesn't exist. Second, the "process" ends at "Licensing," but the requirement under Bayh-Dole is "practical application" not "licensing." All licensing does is promise not to exclude practice, in exchange, typically, for money. While licensing may be the last step in the Pittsburgh process of commercialization, it is not the end point for actual real-life commercialization, which would be commercial sales. Finally, there's nothing here to indicate that the licensing is generally exclusive. That is, the "process" creates monopolies and then trades in them. I know, it's not there so perhaps Pittsburgh uses lots of non-exclusive licenses. Perhaps. But I'm betting not.

In the second diagram, one can see that for startups, clearly, an exclusive license is the default:

Pitt Ventures Commercialization Process



Here, getting past the basics of finding "pain points" and planning to exploit them, the core of the university's IP involvement is buried in the third gear as "license." There's not even a step in which the startup sells product based on the university's patent. Thus, here, commercialization is not of any particular university-owned invention. Rather, commercialization is using an invention as an excuse to create a company. The company is the goal, not the means to the goal of practical application--use of a licensed invention with public benefit on reasonable terms.

Thus, taken two ways "commercialization" as diagrammed by the University of Pittsburgh does not involve actual commercialization. Signing a license is the end of it. You can see then what Pittsburgh must mean, despite what a reasonable reader might be led to understand in the next key provision:

- The University must attempt to develop and commercialize the invention. If an attempt is not made, the federal government retains the right to take control of the invention. The government also may take control of the invention for other reasons, such as a need to alleviate health or safety concerns. This provision is referred to in the law as the government's "march-in" rights.

"must attempt to develop and commercialize." No. "Promote the utilization." Enable practical application or use of the invention "under such conditions as to establish that the invention is being utilized and that its benefits are . . . available to the public on reasonable terms." Commercialization might be one way to achieve practical application. But industry use is

another--no product necessary. Or even DIY use, or research use. To stipulate commercialization is to rule out these other uses, or to make efforts to commercialize take precedence. May was well argue that the law says "leave us alone to speculate on patent rights without accounting to any other community that would otherwise use an invention."

"if an attempt is not made." The federal government may require the university to grant one or more licenses. That's not quite "take control of the invention." It's just that in the history of the law, the government never has taken control of an invention. March-in is not a key provision of the law, as it has never operated and was designed by university patent brokers so that it would not operate. March-in serves exactly the purpose used for here--to give the appearance of protections for the public that in practice do not operate. But worse, Bayh-Dole does not require commercialization, so it is simply untrue that an attempt to commercialize "must" be attempted. Again, a misrepresentation to make it appear the law mandates the patent management program Pittsburgh has.

Here's the language from 35 USC 203:

has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application

A proper account of the law would then be "If the university has not taken effective steps to achieve practical application of a given invention, the federal government may require the university to grant one or more licenses under its patent rights--but in practice the federal government never has done this." If Pittsburgh wants to hold itself to this federal standard, it will have to have some such mandate in its own policy, with accountability for failure. But, alas, it doesn't.

How can someone writing for university faculty "innovators" get things so wrong in some many places? That's more of a rhetorical question than a metaphysical one, of course.

- The University must provide the U.S. government with a nontransferable, irrevocable, paid-up, nonexclusive license ("confirmatory license") to use the invention.

The "confirmatory license" is not in Bayh-Dole, and there's a "throughout the world" left out, but no matter. The license required is "to practice and have practiced" not merely to "use" an invention. In the history of federal invention regulations, "practice" means "to make, use, and sell" and "have practiced" means "to have made, have used, and have sold." That's way, way broader than to "use" an invention. The license does not exist until it has been granted. The paper copy may confirm something--but what it confirms is compliance with the patent rights clause, not something that the government already has in the absence of anyone at Pittsburgh getting around to granting the government its license.

- In granting a license to use the invention, the University also generally must give priority to small businesses, while maintaining the fair-market value of the invention.

This is nonsense! There's nothing whatsoever in Bayh-Dole about maintaining the "fair-market value" of an invention. As [Captain Haddock would say](#), "Billions of blistering blue barnacles!" Here's what Bayh-Dole requires to be in the standard patent rights clause:

a requirement that, except where it is determined to be infeasible following a reasonable inquiry, a preference in the licensing of subject inventions shall be given to small business firms

Already the requirement is walked back. But in the original Bayh-Dole Act, the requirement was that nonprofit exclusive licenses to non-small firms were limited to eight years from the sooner of the date of the license or date of first commercial sale. That bit was quickly eliminated. But the actual standard patent rights clause has this addition:

It will make efforts that are reasonable under the circumstances to attract licensees of subject invention that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the contractor determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms

That is, the requirement is to attract small business licensees and give preference to small business licensees. But then all this is walked back. The efforts only have to be "reasonable under the circumstances" and only in the context of competing proposals from non-small firms. Oh, and even all this gets walked back some more, so that the ultimate effect is that a federal agency has the right to sniff at a university's policy on licensing to small businesses and recommend changes--something, again, that to my knowledge has never been done. This is also not a "key provision" of the law, as it was designed in implementation never to operate. It is a non-provision.

"give priority"--the term is "preference." "Priority" suggests time as well as preference. In practice this clause is used by universities to justify sweetheart exclusive licensing deals to their own startups rather than offering licensing opportunities to anyone else. Often those startups are paper companies or research repackaged as a company so it can compete for SBIR funding, and thus universities steal what otherwise would be available to assist actual small businesses.

- When granting an exclusive license, the University must ensure that the invention will be "manufactured substantially" in the United States.

Almost accurate! The exclusive license is in the U.S. and is to "use" or "sell." The verb "ensure" is wrong--the university (or its assignee) must obtain the agreement from an exclusive licensee that product will be substantially manufactured in the U.S. That is, the licensee does not have to manufacture the product in the U.S.--the exclusive license is to "use" or "sell"--so the manufacturing could be licensed non-exclusively in the U.S.--but all those manufacturers would have to be OEMs for whomever had the exclusive rights. I know, complicated in its way if one has never bothered to think in these terms.

And it's not the subject invention that gets manufactured, it's "any products embodying the subject invention or produced through the use of the subject invention." The requirement is, then, much broader with respect to the required manufacturing, but narrower with regard to territory. A contractor can grant any sort of exclusive license it wants outside the U.S. Again, this is more of a bother requirement, since Bayh-Dole gives federal agencies the right to waive the requirement. And if they don't waive the requirement, they are forced to deal with enforcing the requirement by means of march-in procedures, which were happily designed not to operate. Thus, the manufacturing requirement is also designed not to operate, though it sure looks like it should in all its protectionist splendor.

- Excess revenue must support research and education.

Slipping away again. Bayh-Dole stipulates the use of all revenue received by nonprofits from the disposition of subject inventions. Universities advocated for these requirements because these requirements were better (so they thought) than the government seeking to get a share of the revenue to recoup its research expenditures. Here's the language:

a requirement that the balance of **any royalties or income earned** by the contractor **with respect to subject inventions**, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, be utilized for the support of scientific research or education

Any "income earned . . . with respect to subject inventions." I suppose that's "revenue." But "excess" does not capture what an inventor might most want to know--that the university cannot dip into royalty or income earned other than to pay allowable expenses--paying inventors and paying costs "incidental to the administration of subject inventions." Not incidental to the administration of any inventions, not of non-inventions, not, ahem, pf "accomplishments."

If we look at the University of Pittsburgh policy on revenue management, we can see that it does not comply with the standard patent rights clause (which repeats Bayh-Dole's requirement). For instance, after recovery of expenses incidental to the management of the licensed invention, among other things, there's

15% to the Office of Technology Management to cover administrative expenses

If those administrative expenses are entirely devoted to the management of subject inventions, perhaps things are compliant, and

30% to the above "Patent Rights Fund."

Which is called, a few sentences before, a "University Development Fund" and already has recovered any expenditures in support of the invention. This 30% is in addition--not an expense. Again, if the 30% of general income from a subject invention is designated solely for the administration of subject inventions, then things work out. What do you think is the likelihood we will find such accounting at the University of Pittsburgh? Do you think the federal

government cares? If Pittsburgh folks don't care, then do you think they should be listing this bit as a "key provision" of Bayh-Dole? Yeah, that's my thought, too.

- The University must share a portion of the royalties with the inventor(s).

Yes! They got one key provision totally right! Huzzah-hooray!

We might add that Bayh-Dole requires a contract provision under which the university must share royalties with the inventors. Thus, sharing royalties is a legal obligation of the university. The fact of sharing cannot be, then, consideration for the assignment of an invention by the inventors. There has to be some other "valuable consideration" that binds the assignment. See patent law at [35 USC 261](#) for the wording and context. Senator Bayh, in a strange *amicus brief* to the Supreme Court in *Stanford v Roche*, which the Court rebutted in its decision, argued that inventors had a right to negotiate with their universities for a share of royalties, but had no right whatsoever with regard to ownership of their inventions. Bayh was wrong about inventor rights. We might ask, then, whether universities in asserting ownership over inventions (or *accomplishments*) has identified proper consideration for assignment when federal funding is involved. Royalty sharing is required by law to be in each federal contract and the university agrees to the federal contract. What's not in the federal contract is the proportion of the sharing. That, perhaps, is what Senator Bayh thought that a university inventor might negotiate for. That would be interesting.

In a superficial way, a university could meet the requirement to share by sharing \$1 of royalties with inventors. But we might argue such a practice is not equitable, and that it might not meet the requirement of "valuable consideration" in patent law. But more so, if Senator Bayh was right about at least something regarding Bayh-Dole, perhaps what his point means is that the university is not "entitled" to any ownership unless and until it reaches an agreement with the inventor on the share of royalties it will pay. If it cannot reach agreement, then it cannot demand assignment. Again, the obligation to share royalties is the result of federal law mapped through the standard patent rights clause. That requirement takes precedence over any state-enforced contractual agreement--and so takes precedence over university policy statements on royalty sharing and conditions of employment.

In fact, that's also what the (f)(2) written agreement requirement in the standard patent rights clause indicates--universities must delegate to potential inventors key responsibilities as individuals, including the responsibility to establish the government's rights in subject inventions. Inventors cannot do this if they do not have title to their inventions. It would appear that (f)(2) requires universities to give up any prior claim of ownership to federally supported inventions. That sets up the negotiation with inventors over a share of royalties. And that sets up a voluntary assignment based on a mutual agreement that the university is the appropriate organization to manage the invention and the inventor is satisfied that the "valuable consideration" reflects the value of the invention.

This reasoning--something many university administrators hate--sets aside all the bluster of claims put into university patent policies regarding ownership and royalties. Universities routinely in policy establish royalty sharing as a matter of administrative policy. That royalty

sharing and the sharing amount is set by schedule and has nothing to do with being consideration for assignment or even the merit of the invention so assigned. Thus, there is no bargain of the form, "if you assign your invention to us, we will pay you x% of royalties we earn from licensing your invention." Instead, the arrangement proposed is, "as a condition of employment you must assign your invention to us, and as a matter of administrative policy we choose to share x% with you, but tomorrow we could change our policy and share some other % with you." If you don't assign, your alternative is to quit, since assignment is a condition of employment. We might say, then, that continued employment is the consideration for assignment. That's what the University of California argued in *Shaw*. So much for tenure, if all that's needed to force faculty to quit is to change the policy on them. May as well [require them to ride a unicycle wherever they go](#). That should do it.

Even if we allow such outrageousness for the typical invention, what happens with Bayh-Dole? There, the university accepts a federal contract that establishes the terms under which inventions made with federal support are to be managed. The university is required to require inventors to become parties to the federal contract by promising, among other things, to establish the government's rights in their inventions. The university cannot both require this federal contract and at the same time require anything that conflicts with this federal contract. If the university agrees (as required) to permit its research personnel to be responsible to establish the government's rights in inventions, then the university cannot also prevent its research personnel from doing so by demanding that they assign all their rights to the university. The university can't do both.

If a university complies with the federal contract, then it cannot at the same time require the assignment of all inventions made in the performance of a federally supported project. The Supreme Court was adamant that Bayh-Dole does not authorize the taking of inventions from inventors. The (f)(2) agreement states the entire obligation of research personnel with regard to inventions as authorized by Bayh-Dole. Thus, inventors inventing within the scope of a federally supported project own their inventions, and the university, to obtain an invention, cannot invoke policy because it has already agreed to delegate ownership matters to its research personnel for each federal contract. Furthermore, the university has agreed to share royalties with inventors if the university acquires ownership of any such subject invention. What's not determined is what that share should be.

Here's what it comes down to. The university can stipulate that if it owns the invention, the royalty share is set by policy, as x%. The university can even say "take it or leave it" --but the university cannot say "you have to take it" because the federal contract does not give them that authority and the (f)(2) requirement demands that the university delegate to the inventors the responsibility to establish the government's rights in each subject invention. Thus, inventors do have the right to negotiate the share of royalties they receive. And if the university is unwilling to negotiate, the inventors are free to take their subject invention management business elsewhere. This has nothing to do with their employment with the university. It has to do with how federal contracts take precedence over state-enforced contracts.

The same matter is stated expressly in the case of subcontracts:

the contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions

We might restate the (f)(2) written requirement with parallel language:

the university-contractor will not, as part of the consideration for allow its employees to perform work under the funding agreement, obtain rights in the employee's subject inventions

The university cannot obtain those rights because it is required by section (f)(2) of the standard patent rights clause to release any claim on those rights to the inventors pending the fulfillment of their written promise to establish the rights of the government.

The Supreme Court in *Stanford v Roche* noted the lack of protections for inventors and other third parties in Bayh-Dole. This lack only worked if Bayh-Dole dealt only with the relationship between the federal government and a university after the university had acquired ownership of an invention made in a project with federal support.

Thus, buried underneath the clumsy rhetoric produced by the University of Pittsburgh and endorsed by AUTM, there's still the vestige of a protection for inventors--not in Bayh-Dole proper, but in the standard patent rights clause.

We have finished with the University of Pittsburgh summary of Bayh-Dole. We get no real help with what "It" means for "technology commercialization" other than that it provided a "tremendous incentive" for university administrators to seek profits from monopoly patent positions and perhaps to chronically misstate and misrepresent the law. If their description of what they take to be their founding document is so sloppy to a point beyond simple incompetence, what do you expect to find in their licensing practices? Pity the entrepreneur who is compelled to deal with them. Perhaps, that, then is what "It" means for technology commercialization--misrepresented Bayh-Dole law and history means you really do have to deal with university's version of "It"--a sewer-dwelling patent policy and practice that from time to time emerges to haunt the faculty and the general public, creating mayhem when it can.