



■ MARGO A. BAGLEY

Engineering Solutions to Patent Puzzles

MARGO BAGLEY'S PATH TO THE LAW WAS ANYTHING BUT direct. From the time a woman from the Tennessee Valley Authority visited her ninth grade class in Huntsville, Alabama and talked about careers in engineering, Bagley was sure she wanted to become a chemical engineer. She focused all of her efforts on that goal. She enrolled in summer engineering programs and internships while in high school and college, majored in chemical engineering at the University of Wisconsin-Madison, and eventually took a job as a research and design engineer with Procter and Gamble in Ohio. As Bagley began her work, she fully expected to spend her career solving problems related to consumer products such as Jif® peanut butter, Duncan Hines® cake mixes, and Hawaiian Punch® beverages.

Working with patent attorneys, however, caused her to change her sights. She was intrigued by their work and saw the possibility of a job that would

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build on her years of science and engineering training. Indeed, to be a patent attorney registered to practice before the United States Patent & Trademark Office requires a science or engineering background, which made it seem like a perfect fit. After a brief stint at the Coca-Cola Company as a Senior Research Analyst, Bagley entered Emory University School of Law as a Woodruff Fellow with the goal of becoming a patent attorney.

Bagley loved law school and left as she began: determined to be a patent attorney. Following her graduation in 1996, she practiced patent law with two firms, both in Atlanta. As luck would have it, one of her clients was based in Paris, which not only offered her the chance to travel abroad but piqued her interest in international and comparative patent law and policy. She has continued to pursue this interest as an academic, both in her teaching and in her scholarship. Indeed, one of the first things Bagley did after joining the Emory law school faculty in 1999 was to create a seminar in international and comparative patent law and policy, a course which she has taught fourteen times in the past eight years in various locales in the United States, China, Singapore, and Germany.

Bagley's experience teaching this seminar, as well as other patent classes, has helped shape her scholarly agenda. Patent is a fertile field for research, exploding with provocative and complex issues of global importance. Bagley's classes, which are always well received by students at home and abroad, inevitably touch on issues that she subsequently explores in more depth in her scholarship.

Currently, Bagley has three broad research topics. One takes a comparative approach to exploring the impact of patent law on the development of biotechnology, biodiversity protection, and access to essential medicines. The second, which often intersects with the first, concerns the issues generated by expanding judicial definitions of patent-eligible subject matter. The third involves patent issues associated with university-industry technology transfer and entrepreneurship.

Bagley's first article as an academic, "Internet Business Model Patents: Obvious By Analogy," 7 *Michigan Telecomm. & Tech. L. Rev.* 253

(2001) focused on one aspect of the ongoing controversy created by business method patents. This award-winning paper fit perfectly with Bagley's interest in the expanding scope of patent protection, and in it she showed signs of the pragmatic, careful, and thoughtful analysis that would mark all of her scholarship. While other scholars criticized the fact that business methods could be patented, Bagley's starting assumption was that such patents were here to stay. She therefore explored ways to deal with some of the issues and problems these patents created. In particular, Bagley argued that existing patent law principles, specifically the doctrines of analogous art and of equivalents, could adequately cabin the scope of Internet business model patents without the need for legislative action.

Bagley's second article sprang from questions that arose while teaching courses in domestic, international, and comparative patent law. "In Patently Unconstitutional: Geographical Limitations on Prior Art in a Small World," 87 *Minn. L. Rev.* 679 (2003), Bagley examined the U.S. Patent Act's geographical limitations on prior art. These geographical limitations, which appear in various subsections of section 102 of the Patent Act, preclude evidence of public knowledge and/or use of an invention in a foreign country from being relied upon to disprove the novelty and non-obviousness of that invention in the United States. In other words, they make irrelevant the fact that a proposed invention might already be known or used in a foreign country.

While other scholars had criticized the policy implications of these geographical limitations, Bagley was the first to assess whether those limitations are constitutional. Bagley's analysis led her to conclude that such limitations run afoul of the Intellectual Property Clause. Congress lacks authority under that Clause, Bagley argued, to provide patent protection to inventions that are obvious or not novel. By excluding evidence of foreign knowledge or use of certain inventions, the geographical limitations ensure that patent protection will indeed be granted to inventions that are neither novel nor nonobvious; this is especially true given the relative ease of accessing foreign public knowledge.

Bagley supplemented her constitutional analysis with a fresh, com-

parative perspective on the policy debates, which further supported the constitutional argument that geographical limitations should be eliminated. This well-received article generated a response from Professor Craig Nard, entitled “In Defense of Geographic Disparity,” which was published as a colloquy along with her reply, “Still Patently Unconstitutional: A Reply to Professor Nard,” 88 *Minn. L. Rev.* 239 (2003). While Professor Nard’s response focused on policy reasons for retaining the geographical limitation in the context of pharmaceutical patents, Bagley’s reply refocused the discussion on the constitutional infirmity of the provision and on its negative long-term ramifications for indigenous groups and traditional knowledge holders around the globe.

Bagley has long been interested in the impact of international patent law on access to essential medicines. When asked to participate in a symposium on AIDS and intellectual property at Emory Law School, Bagley used the occasion to explore this interest. The result was a short essay, “Legal Movements in IP: TRIPS, Bilateral Agreements, and Access to Essential Medicines,” 17 *Emory Int’l L. Rev.* 781 (2003). According to conventional wisdom, the key legal document in this arena is the World Trade Organization’s Agreement on Trade Related Aspects of Intellectual Property, otherwise known as the TRIPS Agreement. Many scholars, moreover, have argued that TRIPS contains enough flexibility to allow sovereigns to achieve public policy objectives, especially those related to public health and welfare. “Bagley pointed out, however, that developed nations have increasingly supplemented TRIPS with bilateral agreements that take away some of the supposed flexibility offered by TRIPS. According to Bagley, these bilateral agreements, in tangential and unexpected ways, may very well make it more difficult for developing countries to gain access to essential medicines.

In “Patent First, Ask Questions Later: Morality and Biotechnology in U.S. Patent Law,” 45 *Wm. & Mary L. Rev.* 469 (December 2003), Bagley returned to her general interest in the scope of patent protection. In this piece, she offered a critique of U.S. patent subject matter standards, which allow “anything under the sun made by man” to be patent-eligible.

Moral objections are not relevant under these standards. Bagley contrasts this latitudinarian approach to the “ask questions first, patent later” approaches taken in Europe and Canada.

Most commentators who have considered the question of employing a morality inquiry in biotech patent law have dismissed the notion as unworkable and a distraction from the real question of whether it is proper to pursue certain areas of research and development. (Think cloning.) Bagley acknowledged that there are certainly risks involved with such an inquiry, but she also argued that there is a great deal of room for improvement over the current approach. That approach, Bagley argues, rests on misconceptions and misunderstandings.

For years, courts relied on a judicially crafted “moral utility” doctrine, which they used to screen out morally objectionable patent applications. This doctrine was used both by courts and the United States Patent and Trademark Office (USPTO) to deny patents to morally controversial inventions under the fiction that such inventions were not “useful,” as required by law. The problem is that that doctrine has all but disappeared, but no one has told Congress or the USPTO.

As a result, no one is manning the gate anymore. In reality, patent applicants, rather than Congress, the USPTO, or courts, are deciding which morally questionable inventions are nonetheless worth pursuing. Surely Congress rather than patent applicants, Bagley argues, should be making policy decisions about the patentability of morally objectionable inventions, such as human-animal chimera.

This provocative article has generated a great deal of attention and admiration in the United States and abroad. It has influenced the work of scholars in such diverse places as the Netherlands, Singapore, Brazil, Germany, and Uzbekistan. It has also led to several additional publications by Bagley, including an op-ed, “Patents and Morality: A Role for Congress,” *The National Law Journal*, May 3, 2004; a symposium essay, “Stem Cells, Cloning and Patents: What’s Morality Got to Do With It?,” 39 *New Eng. L. Rev.* 501 (2005); and a book chapter in a multi-volume treatise “A Global Controversy: Biotechnology Patents and Morality,” in *Intellectual Property*

and Information Wealth (Peter Yu, ed., Praeger 2007). It has also generated more than twenty invitations for Bagley to lecture on the topic.

Bagley's third area of research, which focuses on university-industry technology transfer issues, grew out of her involvement in creating a program to study how academic innovations make it to market. TI:GER (Technological Innovation:Generating Economic Results) is an award-winning, government-funded joint venture between the Georgia Institute of Technology and Emory University. TI:GER was the first program of its kind to combine JD, MBA, and PhD science and engineering students in multi-disciplinary teams to learn the process of commercialization innovation from theory and practice. Bagley helped develop the curriculum, recruited students, helped secure funding, and taught in the program.

It was while co-teaching interdisciplinary courses in this program that Bagley came up with the idea for her most recent major article, entitled "Academic Discourse and Proprietary Rights: Putting Patents in Their Proper Place," 47 *B.C.L. Rev.* 217 (2006). This article explored the impact of congressional policies to promote the commercialization of university-generated research on the traditional culture of open discourse in academia.

Twenty-five years ago, Congress passed the Bayh-Dole Act and transformed patent law into an explicit lever for promoting university-industry technology transfer. In a nutshell, the Act allows universities to take title to inventions developed with federal funds and to patent these inventions and license resulting rights to private industry. While controversial, Bayh-Dole is widely considered a success because universities now acquire and license patents, create start-up companies that make new products, and collect significant royalties. However, the Bayh-Dole Act has imposed costs on academia, including a perceived deterioration in the quality and quantity of academic discourse and knowledge dissemination among university researchers.

The commercialization of the academy and the proper role of patent law in our society are topics of increasing interest in many quarters. This article provided a fresh perspective on the Bayh-Dole debate by focusing

on the often overlooked impact of patent novelty rules on academic discourse. The problem is that to secure a patent, the applicant must show that the invention is novel; if an academic shares her research with colleagues for feedback and revision, she runs the risk of being unable to prove later that the proposed invention is novel. Bagley thus argued that the novelty rules in our one-size-fits-all patent system lack sufficient elasticity to accommodate the different norms and practices of academia. These rules essentially force university researchers to choose between engaging in prompt and open discourse and obtaining proprietary rights.

In addition to identifying this dilemma, Bagley went on to propose a solution. She argued for the creation of an opt-in, extended grace period, which would grant academic researchers additional time to publish and present early stage research before having to file a patent application. By coupling the time extension with immediate application publication (as opposed to the eighteen-month publication delay under the current system), Bagley's proposal provides something for everyone: third parties would receive notice of proprietary claims, while researchers would be able to engage in traditional academic discourse while retaining the ability to obtain proprietary rights useful for the commercialization of their inventions.

As Bagley's proposal illustrates, her scholarship, like her teaching, remains focused on developing workable solutions to real problems. She has the legal academic's flair for and facility with theory, to be sure. But to the delight of her students and her readers, she has retained the engineer's desire to solve actual problems. This may explain why, in a short period of time, Bagley has emerged as a highly respected, trusted and valuable contributor to the development and refinement of patent law and policy, both in the United States and abroad. ❧

EXCERPTS

Patent First, Ask Questions Later: Morality and Biotechnology in Patent Law

45 *Wm. & Mary L. Rev.* 469 (2003)

IN *CLONING TREVOR*, JOURNALIST KYLA DUNN CHRONICLES the unsuccessful efforts of a group of scientists at Advanced Cellular Technologies (ACT) to create an embryonic clone of a two-year-old boy afflicted with a rare genetic disorder. Theoretically, the development of such an embryo, made with one of the boy's skin cells and a donated human egg, could yield embryonic stem cells which, when injected back into the boy, might halt and reverse the disorder. This effort is an example of therapeutic cloning—the creation of genetically modified embryos that ultimately will be destroyed in order to produce cures for various human ailments. By contrast, reproductive cloning has as its aim the development, also from a genetically modified embryo, of a fully formed child. Therapeutic cloning is less abhorrent to many than reproductive cloning, but both are morally controversial, and neither type of research is eligible for federal funding. Instead, private sector entities, like the ACT researchers that attempted to clone Trevor, are funding work in these areas.

While federal funding may not be available for cloning research, federal patent protection, which provides an incentive for private funding, is available. For example, a cloning patent was issued to the University of Missouri in April 2001, claiming inventions directed to, among other things, methods for “producing a cloned mammal” and for “producing a cloned mammalian embryo.” Moreover, the patent disclosure states that “the present invention encompasses the living, cloned products produced by each of the methods described herein.” The patent and news reports of other human cloning activity drew critical reaction, commentary, and

calls for legislative action from a variety of sources. However, none of the proposed amendments, either to ban patents on cloning or to ban cloning research, have been enacted to date.

Why is the federal government granting exclusive property rights, which in effect act as indirect research funding, in inventions for which it will not, for public policy reasons, provide direct research funding? Patents can be seen as a type of indirect funding because they provide incentives for parties to undertake expensive and risky research. Patents induce upfront funding of projects with the expectation that monopoly profits can be generated over the long term. This situation, which appears inconsistent, does not necessarily involve active and deliberate congressional authorization of patents on such morally controversial inventions. Rather, Congress simply may not appreciate the ramifications of its inaction in sustaining the current “patent first, ask questions later” U.S. patent regime.

Under a “patent first, ask questions later” approach, a patent issues, and to the extent its claimed subject matter conflicts with norms or values held by a meaningful portion of society, the patent generates, among other things, public expressions of outrage, questions of how it issued in the first place, and often calls for Congress to address the perceived problem legislatively. The U.S. “patent first” approach has the potential in areas to create problems in a variety of technical disciplines and only tangentially related to morality concerns. The problems the approach creates with regard to morally controversial biotech subject matter, however, make a compelling case for why congressional action in this area is necessary and long overdue. For this reason, this Article focuses on issues raised by the lack of any morality-based limits on biotech patent subject matter.

Biotechnology is an area in which many morally questionable inventions are generated. Controversial patented biotech inventions include: isolated genes, sequenced DNA, medical procedures, embryonic stem cells, genetically modified transgenic animals, and methods of cloning mammals. The moral controversies surrounding these and other biotech inventions stem from several concerns including those arising from the

mixing of human and animal species, the denigration of human dignity, the destruction of potential human life, and the ownership of humans. The availability of a government imprimatur granting exclusive rights over morally controversial inventions is especially problematic in the area of bio-technology because no one should “own” and the government should not encourage certain inventions.

The U.S. patent system has not always had this “patent first” approach to moral issues. For many years a judicially created “moral utility” doctrine served as a type of gatekeeper of patent-eligible subject matter. The doctrine allowed both the USPTO and courts to deny patents on morally controversial subject matter under the fiction that such inventions were not “useful.” The gate, however, is currently untended, as a result of judicial decisions that interpreted the scope of the statutory utility and subject matter standards under the Patent Act of 1952 in a way that left no room for a moral utility doctrine. Beginning in 1980 with *Diamond v. Chakrabarty* and continuing to the present, the Supreme Court has expansively and consistently held that Congress intended the definition of subject matter eligible for protection under the 1952 Patent Act to include any type of living or nonliving matter, as long as it is “made by man.” Combining these decisions with the Court’s generous deference to Congress in Intellectual Property Clause matters means that no explicit basis exists for denying patent protection to otherwise patentable, morally controversial subject matter.

Members of Congress may not appreciate fully this change of events because of statements by the USPTO declaring that it would deny patents on certain morally controversial inventions for public policy or, in the case of inventions comprising humans, Thirteenth Amendment reasons. Members of Congress have cited such statements in arguments against specific legislation directed at banning human-cloning patents. The USPTO, however, is claiming power that it does not have. The Supreme Court has already interpreted the patent statute without reference to any limits based on moral considerations and the idea that the Thirteenth Amendment could support the denial of patents, on genetically modified

pre-viable fetuses for example, is doctrinally unsound. The USPTO thus lacks the authority to deny patents on morally controversial inventions, even ones that comprise human genetic subject matter, and has in fact issued patents encompassing human genetic subject matter, despite earlier pronouncements.

Further complicating congressional action to address the patent eligibility of morally controversial biotech subject matter may be misunderstandings of the basic nature of the U.S. patent-grant system. The Patent Act of 1952 entitles a person to patent her invention if it meets the statutory requirements for patentability, which include novelty, utility, and nonobviousness. As most of the morally controversial biotech inventions are new and targeted at curing human disease, if only tangentially, such express statutory requirements have not and likely will not prove too difficult to surmount. In the absence of statutory limits, researchers and their patent attorneys are making patent policy and determining the limits of patent eligibility by the subject matter described in their patent applications. Congress may not be aware that inaction on its part has placed patent applicants in the position of de facto arbiters of patent eligibility, thereby providing private entities with incentives, via granted patents, to develop and exploit morally controversial inventions without engaging in any analysis of the policy implications of such decisions. As a result, Congress may be forced to debate, in the not too distant future, whether patents on human-animal chimera, or genetically modified pre-viability fetuses, developed to be destroyed in the fight against some dreaded disease, should have been granted.

Facially, the U.S. “patent first” approach appears to reflect a normative congressional choice of a system that defaults in favor of patent eligibility while leaving specific subject matter exclusions for subsequent reactive legislation. However, appearances can be deceiving. Congress could certainly have chosen to create a “patent first” system in which advancing technology was the only concern. Alternatively, Congress could acquiesce in the operation of such a system by declining to enact legislation to correct it. A variety of evidence suggests, however, that Congress has not

intentionally created such a system, nor intentionally acquiesced in such a system. Rather, as posited in this Article, Congress believes that there are pre-issuance barriers to patentability in the system, is “unaware” of the complete lack of morality-based limits in the current system, and has yet to speak definitively on this issue.

Without statutory bars to the issuance of morally controversial patents, the public and Congress are continually in a reactive instead of proactive mode in assessing the potential impact of patenting such subject matter. Issues surrounding takings and government interference with property rights and contractual relations complicate and confound Congress’ ability to adequately define patent eligible subject matter after the fact. In addition, a lack of public understanding regarding how the patent system operates likely traps some people in the “is-ought fallacy;” the erroneous assumption that because the law allows some governmental action, such as the issuance of a morally controversial patent, that action must be proper. Finally, as with therapeutic cloning, the ends to be achieved by exploitation of these patents, such as curing serious human ailments, are seductively desirable and politically explosive. These factors combine to make the necessary, but *ex post*, inquiry into whether the morally controversial “means” to achieve these desirable ends are appropriate subjects for patent protection, exceedingly difficult to undertake.

A different order or type of inquiry, such as determining patent subject matter eligibility before a patent issues, could provide a way to improve the current state of affairs. It makes little sense to execute people and then try to ask them questions regarding their guilt or innocence (i.e., whether it was “right” to execute them). Similarly, granting patents on morally controversial biotech subject matter and then asking whether such inventions should be patentable is a problematic policy for the United States and its patent system. Interestingly, other countries have taken “ask questions first, then patent” approaches to morally controversial subject matter that, while imperfect, provide illustrative alternatives to the haphazard course the United States is currently pursuing. The most recent example is the December 2002 decision of the Canadian Supreme Court

excluding higher life forms from patent protection without an express statutory authorization from Parliament.

Admittedly, while a “patent first” approach is problematic, good reasons clearly exist for leaving questions of morality out of patent law. Some commentators point to the patent system being ill-equipped to engage in such inquiries that are better left to regulatory agencies. Others correctly note that denying patents on morally controversial inventions will not stop the underlying research that is the source of public concern. Still others posit that failing to grant patents on promising technology, perhaps because of public misunderstandings of science, may hinder important discoveries and deny life-saving cures to millions. In essence they argue that the system is not broken, and to the extent it is, it would be better not to fix it because the solution—any type of morality-based limitation—could be far worse than the current problem.

This Article analyzes such arguments against morality-based patent legislation in light of the larger themes of institutional competence and federal patent policy. By identifying which actor has the institutional competence to make decisions of high public policy, as well as which actor is actually making such decisions, the Article exposes a key flaw in the current system that requires a remedy. Also, the Article posits that framing the issue of patent eligibility with reference to the policies Congress seeks to effectuate via the patent system further supports the conclusion that legislative action is indeed necessary, though not free from risk. ❧

Academic Discourse and Proprietary Rights: Putting Patents in Their Proper Place

47 *B.C.L. Rev.* 217 (2006)

BY MOST MEASURES, THE NUMBERS ARE PRETTY IMPRESSIVE. In fiscal year 2004 alone, approximately 154 U.S. universities reaped over \$1 billion in net patent licensing income, executed 3928 new licenses, and were issued over 3800 U.S. patents, largely as a result of university-industry technology transfer initiatives. By comparison, in 1991, ninety-eight universities garnered a mere \$123 million in gross licensing income. These funds provide needed revenue to university coffers, stimulate economic growth in surrounding municipalities, and provide beneficial products to consumers here and abroad.

But these achievements have not come without a cost to academia. Historically, universities have existed for the purpose of promoting inquiry and advancing the sum of human knowledge. To further these goals, university researchers would publish and present their scientific findings as soon as possible in accordance with communal norms promoting the prompt and open sharing of data. But today, academic researchers are being encouraged by technology transfer offices (“TTOs”) and industry sponsors to delay publishing and presenting their work until after filing a patent application and sometimes even longer than that. In addition, the growth in patent-related litigation involving universities and the much-hyped “tragedy of the anticommons” in the patenting of basic research tools are both costs attributable, at least in part, to technology transfer initiatives. While not amenable to precise quantification, the stifling of discourse and the erosion in the norms of sharing and colloquy historically associated with the scholarly enterprise are costs that must be balanced against the technology transfer gains.

Both the impressive numbers and the negative side effects are usually traced to the 1980 Bayh-Dole Act, which allows universities to elect

ownership of inventions developed with federal funds, enabling them to offer exclusive licenses to companies interested in commercializing the inventions. The impetus for Bayh-Dole was a belief that the ivory tower was stuffed with useful technologies that could meet societal needs and stimulate economic progress if appropriate incentives—for example, exclusive rights—could be provided for private industry to commercialize them. Although not without critics, Bayh-Dole is widely seen as a success, and many foreign countries are implementing changes to their laws to mirror its policies.

Bayh-Dole and other enabling legislation are evidence of a congressional desire to facilitate technology transfer between universities and industry by using patent policy, with the ultimate goal of benefiting the public. But luring academics into this brave new world of patents and royalties has created some unintended side effects. For example, university research often progresses in stages, and the traditional model of scholarly discourse involves the presentation and publication of research conclusions and insights at those various stages. Yet the rigid patent novelty rules directly conflict with this model by requiring an inventor to file a patent application either before or within twelve months of exposing the invention to the public (depending on the country) to avoid losing the right to obtain a patent. These rules constrain researcher behavior in ways that are not conducive to academic discourse.

The unforgiving nature of patent novelty rules encourages a culture in which the dissemination of even very early-stage research, sometimes no more than a proof of concept, is delayed while a provisional patent application is prepared by the university TTO. As a result, secrecy is on the rise among academic researchers, particularly in the life sciences, with many university scientists choosing to limit or delay disclosures of their work in order to participate in the patent/technology transfer arena. For example, in 1966, 50% of surveyed experimental biologists felt safe in sharing information on current research with others; only 26% felt that way by 1998. In a recent study of geneticists, 35% perceived academic scientists as somewhat or much less willing to share information and data

than a decade ago. Also, 58% reported adverse data withholding effects on their own research, and 56% reported adverse data withholding effects on the education of students and post-doctoral researchers.

While these statistics are troubling, other judicial, legislative, and commercial developments point toward an even bleaker future for academic discourse in the sciences. The recent decision by the Court of Appeals for the Federal Circuit in *In re Klopfenstein* seems sure to result in a further stifling of scholarly discourse prior to the filing of patent applications. There, the court expanded the scope of patent-invalidating prior art by broadly interpreting the phrase “printed publication” to include even ephemeral scientific poster presentations. The decision is significant because previous caselaw had required the distribution of at least some copies or the indexing and cataloguing of at least one physical copy of a reference before such information would be considered patent-defeating prior art. On the legislative front, recently introduced patent reform measures, which include the creation of a “winner takes all” race to the patent office and the elimination of the best mode requirement, promise a further deterioration of the traditional sharing norms of university researchers while offering little if any concomitant benefit to this group of inventors. Moreover, Emory University’s recent announcement of its \$540 million sale of intellectual property, considered to be the largest such sale in the history of American higher education, is likely to fan further the flames of interest in technology transfer initiatives at other institutions hoping to obtain new funds for various endeavors.

Much has been written on the myriad problems associated with the Bayh-Dole Act and the over-zealous patenting, litigation, and licensing practices of some university TTOs, along with the resulting access issues for upstream research tools, increased secrecy among university scientists, and more. To address these perceived problems, several commentators have called for reformation of the Act, as well as other changes to the patent system, such as heightening the subject matter and utility standards and creating a statutory experimental use exception to patent infringement. These proposals could, if implemented, improve some

aspects of the current university patenting regime. Even if enacted, however, such reforms likely would have little, if any, effect on the increase in secrecy among academic researchers because they do not address the underlying causes of that problem.

I contend that a more promising mechanism for addressing the deterioration in disclosure norms in academia would be to build flexibility into the novelty rules of U.S. and foreign patent systems. This would tailor the patent system to accommodate the needs, values, and realities of academic enterprises, and would permit academic researchers more freedom to share publicly their results. Surprisingly little, if any, real attention has been focused on modifying these rules that, along with restrictive terms in industry sponsorship agreements, are at the root of the increased secrecy permeating academia today. Twenty-five years after the passage of the Bayh-Dole Act, patents and technology transfer are firmly entrenched in academia, but instead of being a simple aid to the dispersion and implementation of university discoveries, patent rules too often are dictating the pace, form, and scope of discourse and sometimes even the direction of the research itself. In a society that values the public benefits created both by prompt and open scholarly discourse and by the patenting of commercializable inventions, these developments are particularly troubling. In the interest of the public good, researchers should not have to choose between engaging in early-stage academic discourse and obtaining proprietary rights.

I suggest that to begin reversing the observed deterioration in disclosure norms, flexibility must be built into the patent system so that patents can facilitate, not control, the academic knowledge dissemination enterprise. In particular, I advocate the creation of an opt-in extended grace period that would provide more time for academic researchers to publish and present early-stage research before having to file a patent application. Such an extension, coupled with early application publication, would allow researchers to engage more fully in traditional academic discourse while retaining the ability to obtain the proprietary rights necessary for commercialization of their inventions. Importantly, this kind of extension

also would provide early disclosure of discoveries for other scientists to build upon.

Part I of this Article provides a context for discussing issues relating to academic discourse and proprietary rights by highlighting key changes in the historical relationship between the academy and the public good prompted by the intrusion of proprietary rights. Part II then considers the impact of changes in patent law and policy on scientific discourse in the academy. It looks first at positive benefits created by the changes and then at several of the costs engendered by the patent and technology transfer boom within U.S. universities in the twenty-five years since the enactment of Bayh-Dole. Proposals for putting patents in their proper place are the focus of Part III. This Part proposes the enactment of a statutory amendment designed to ameliorate the effects of patent prior art rules on the dissemination of early-stage university research by allowing university researchers the option of an extended prior art grace period in exchange for immediate application publication. This proposal aims to increase prompt and full academic discourse, while balancing a researcher's ability to obtain patent protection with third-party needs for certainty regarding publicly available information. Part III also addresses controversial aspects of the proposals, including their relation to current patent reform and harmonization efforts under consideration in the United States and abroad. The Article concludes that for norms of scientific scholarly discourse to regain traction in the academy, patents must move out of the limelight and into the supporting role that is their proper place. ❧

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