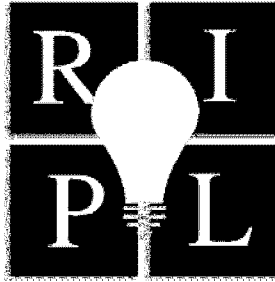


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PATENT REFORM SHOULD NOT LEAVE INNOVATION BEHIND

CARL E. GULBRANDSEN, STEPHANIE ADAMANY, SANDRA HABERNY &
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ABSTRACT

The most recent push for patent reform established competing groups supporting individual agendas. In view of current economic difficulties, however, the focus on innovation should be ever more important. By enacting the Bayh-Dole Act in 1980, the federal government invested in innovation and unlocked American industrial potential through Universities. The current reform has provisions that limit disclosure and facilitate patent challenging which increases costs to inventors and adds responsibilities to an already overloaded patent office. This article addresses a number of the proposed reforms and the effect on University innovation.

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PATENT REFORM SHOULD NOT LEAVE INNOVATION BEHIND

CARL E. GULBRANDSEN, STEPHANIE ADAMANY, SANDRA HABERNY & JASON SHEASBY*

INTRODUCTION

Over the past several years, Congress has dedicated significant time and effort to modify United States patent law.¹ During the 110th Congress (2007–2008), the House of Representatives passed a bill known as the “Patent Reform Act of 2007,”² but the bill died in the Senate.³ In September 2008, a new bill was introduced in the Senate by Honorable Jon Kyl.⁴ The authors of the failed Senate bill and the proponents of patent reform vowed that reform legislation would be re-introduced and enacted in 2009.⁵ In the interim, between the close of the 110th Congress, the transfer of power to a new Congress with increased Democratic majorities and the historic inauguration of a new President, the world has seen a meltdown of the global financial markets unlike anything that has occurred since the Great Depression.⁶ On March 3, 2009, both the House and the Senate introduced strikingly similar patent reform bills, both entitled Patent Reform Act of 2009.⁷ As we write this article, the global financial crisis continues and most experts suggest that the U.S. economy will not begin to recover until at least the third quarter of 2009—if then.⁸ The economic environment is markedly different than that which existed just a few short months ago.⁹ Thus, it is fair to ask whether the urgency of patent reform or the types of reform that were being sought presented in 2008 are suitable for the new challenges

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¹ See Patent Reform Act of 2009, H.R. 1260, 111th Cong. (2009); Patent Reform Act of 2009, S. 515, 111th Cong. (2009); Patent Reform Act of 2008, S. 3600, 110th Cong. (2008) (terminating in the Senate); Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007) (as passed House of Representatives, Sept. 7, 2007); Patent Reform Act of 2007, S. 1145, 110th Cong. (2007) (terminating in the Senate).

² H.R. 1908; see 153 CONG. REC. D1,173 (daily ed. Sept. 7, 2007) (passing H.R. 1908).

³ See S. 1145 (as placed on Senate Legislative Calendar No. 563, January 24, 2008).

⁴ 154 CONG. REC. S9,493 (daily ed. Sept. 25, 2008).

⁵ See, e.g., Rick Merritt, *Congress to Again Take Up Patent Reform*, ELECTRONIC ENGINEERING TIMES, Jan. 26, 2009, at 30, available at <http://www.eetimes.com/showArticle.jhtml?articleID=212902084> (“A spokesman for Senator Patrick Leahy (D-Vt.) confirmed his plans to bring up patent reform in the current session . . .”).

⁶ See, e.g., Stephen Labaton, *Obama Urged to Move Swiftly to Rescue Banks*, N.Y. TIMES, Jan. 18, 2009, at A20 (“The financial meltdown is the most serious to confront a new president since Franklin D. Roosevelt entered the White House in 1933.”).

⁷ See Patent Reform Act of 2009, H.R. 1260, 111th Cong. (2009); Patent Reform Act of 2009, S. 515, 111th Cong. (2009).

⁸ Kelly Evans & Phil Izzo, *Economists’ U.S. Outlook Dims*, WALL ST. J., Feb. 13, 2009, at A4, available at <http://online.wsj.com/article/SB123445757254678091.html>.

⁹ *Id.*

this country now faces.¹⁰ Too little attention has been given to the adverse effect the proposed reforms have on innovation at a time when innovation is critical to economic recovery.¹¹

The current effort to reform patent law saw its genesis in numerous scholarly articles and studies.¹² More recently, the major driver for reform has been a coalition of large information technology and financial service companies acting collectively through the Coalition for Patent Fairness (“CPF”).¹³ The principal complaint of this coalition is that alleged dubious claims of patent infringement are being made which results in rising litigation costs for coalition members.¹⁴ The coalition contends that this circumstance is due to an increasing number of “low quality patents.”¹⁵ More

¹⁰ See *id.*; ROBERT J. SHAPIRO & APARNA MATHUR, THE ECONOMIC IMPLICATIONS OF PATENT REFORM: THE DEFICIENCIES AND COSTS OF PROPOSALS REGARDING THE APPORTIONMENT OF DAMAGES, POST-GRANT OPPOSITION, AND INEQUITABLE CONDUCT 1 (2008), available at http://www.bio.org/reg/media/patent_reform_study.pdf.

¹¹ See IEEE-USA, PATENT REFORM: U.S. INNOVATION, ENTREPRENEURIALISM AND COMPETITIVENESS 3 (2009), <http://www.ieeeusa.org/policy/positions/patentreform.pdf> (last visited Mar. 30, 2009); see also SEED, REPORT FROM DUBAI, at 111 (Feb. 2009) (“Traditionally when the economy goes bad, everyone cuts down on science and R&D ... the message from this forum was this time it should be the other way around, that new knowledge and innovation are the way out of this crisis.”).

¹² See, e.g., COMM. ON INTELLECTUAL PROP. RIGHTS IN GENOMIC AND PROTEIN RESEARCH AND INNOVATION, NAT’L RESEARCH COUNCIL, REAPING THE BENEFITS OF GENOMIC AND PROTEOMIC RESEARCH: INTELLECTUAL PROPERTY RIGHTS, INNOVATION, AND PUBLIC HEALTH (Stephen A. Merrill & Anne-Marie Mazza eds., 2006); COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., NAT’L RESEARCH COUNCIL, A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen A. Merrill et al. eds., 2004); FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003) [hereinafter FTC REPORT], available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>; Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won’t Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943 (2004); Mark A. Lemley & Carl Shapiro, *Frontiers of Intellectual Property: Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); Gerald J. Mossinghoff, *The First-to-Invent Rule in the U.S. Patent System Has Provided No Advantage to Small Entities*, 87 J. PAT. & TRADEMARK OFF. SOC’Y 514 (2005).

¹³ See Katie Kindlean & Matthew Murray, *Patent Push*, ROLL CALL, Feb. 25, 2009, at 9 (reporting that the CPF is urging Congress to enact 2009 patent reform); Patent Fairness Coalition, <http://www.patentfairness.org/learn/about/> (last visited Mar. 30, 2009).

¹⁴ Letter from Coal. for Patent Fairness to Patrick J. Leahy, Chairman, Senate Comm. on the Judiciary, John Conyers, Jr., Chairman, House Comm. on the Judiciary, Arlen Specter, United States Senator, Lamar S. Smith, United States Representative (February 24, 2009), available at http://www.patentfairness.org/pdf/CPF_letter_to_Congress_Feb.pdf; see *Perspectives on Patents: Post-grant Review Procedures and Other Litigation Reforms: Hearing Before the Subcomm. on Intellectual Property, S. Comm. on the Judiciary*, 109th Cong. 40–45 (2006) [hereinafter Chandler Statement] (statement of Mark Chandler, Senior Vice President and General Counsel, Cisco Systems, Inc.).

¹⁵ See Chandler Statement, *supra* note 14, at 40–45. But see Paul R. Michel, Chief Judge, United States Court of Appeals for the Federal Circuit, *Where Are We Now on Patent System Improvements and How Can We Best Make Further Progress* 1–2 (Dec. 5, 2008) [hereinafter Chief Judge Michel Address], available at <http://www.cafc.uscourts.gov/FTCspeech.pdf> (prepared address of Chief Judge Paul R. Michel for delivery at the Federal Trade Commission Hearing on the Evolving IP Marketplace) (contending that there a lack of empirical evidence to support the proposition that so called “low quality patents” are a problem or that litigation is out of control).

and more, according to the coalition, such litigation is being instigated by patent aggregators derisively referred to as “patent trolls.”¹⁶

On the opposite side of the reform push are the Coalition for 21st Century Patent Reform and the Innovation Alliance.¹⁷ The former is comprised of a diverse group of industries but populated in significant part by representatives from the patent law associations and pharmaceutical and medical device industries.¹⁸ The latter is a diverse group including a large mobile phone manufacturer and technology-based companies.¹⁹ Both groups argued that the reforms being urged by the CPF would weaken patents and thereby harm innovation in this country.²⁰

Because of its unique position, the university community has been caught in the middle of the debate. As noted above, the genesis of the patent reform movement, in part, came out of the university community with the publication of articles by scholars in the economic and social science disciplines criticizing the patent system and reacting to an important study from the National Academy of Sciences.²¹ At the same time, universities have increasingly become users of the patent system.²² Almost 4% of the patents issued annually by the United States Patent and Trademark Office (“USPTO”) are owned by universities or patent licensing entities associated with universities, like the Wisconsin Alumni Research Foundation (“WARF”).²³ University generated patents are licensed by existing companies or used as platform technologies to start companies.²⁴ The revenues generated from them are an important source of unrestricted funds for universities struggling to survive in a time when State funding is declining.²⁵ More importantly, beyond financial benefits, patenting and licensing is often the best or only way to ensure that the results of taxpayer-funded research are used to improve lives.²⁶ So, while some

¹⁶ See, e.g., *The Patent Reform Act of 2009: Hearing on S. 515 Before the S. Comm. on the Judiciary*, 111th Cong. (2009), available at www.finnegan.com/files/upload/09-03-10Appletontestimony.pdf (statement of Steven R. Appleton, Chairman and Chief Executive Officer, Micron Technology, Inc.).

¹⁷ See, e.g., *Patent Law Overhaul: Hearing on S. 515 Before the S. Comm. on the Judiciary*, 111th Cong. (2009) (statements of Taraneh Maghame, Vice President, Tessera, Inc. & Philip S. Johnson, Chief Intellectual Property counsel, Johnson & Johnson).

¹⁸ *Id.* (statement of Philip S. Johnson, Chief Intellectual Property counsel, Johnson & Johnson).

¹⁹ *Id.* (statement of Taraneh Maghame, Vice President, Tessera, Inc.).

²⁰ *Id.* (statements of Taraneh Maghame, Vice President, Tessera, Inc. & Philip S. Johnson, Chief Intellectual Property counsel, Johnson & Johnson).

²¹ See *supra* note 12 and accompanying text.

²² PATENT TECH. MONITORING TEAM, U.S. PATENT AND TRADEMARK OFFICE, U.S. COLLEGES AND UNIVERSITIES—UTILITY PATENT GRANTS 1969–2005 (2007), http://www.uspto.gov/web/offices/ac/ido/oeip/taf/univ/doc/doc_info_2005.htm (last visited Mar. 30, 2009).

²³ *Id.* (citing U.S. academic institutions as representing 4.2% of non-governmental U.S. organizations in 2005).

²⁴ See Margo A. Bagley, *Academic Discourse and Proprietary Rights: Putting Patents in Their Proper Place*, 47 B.C. L. REV. 217, 219–220 (2006); Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 611, 614 (2008) (describing university patents licensed to companies as building blocks for new technologies).

²⁵ Lemley, *supra* note 24, at 619–20 (explaining one billion dollars in licensing revenue help fund university research and education).

²⁶ DEPT OF HEALTH AND HUMAN SERVS., NAT’L INSTS. OF HEALTH, A PLAN TO ENSURE TAXPAYERS’ INTERESTS ARE PROTECTED 16 (2001), <http://www.nih.gov/news/070101wyden.htm> (last visited Mar. 30, 2009); Paul J. Riley, Comment, *Patenting Dr. Venter’s Genetic Findings: Is the*

members of the university community have argued in favor of reform, others have been apprehensive that the proposed reforms will adversely affect the ability of universities to license inventions arising from their research for the public good.²⁷

This article will examine: (1) the history and benefits of patenting and licensing the fruits of publicly-funded university research;²⁸ (2) the characteristics of U.S. patent law that complement the university technology transfer environment;²⁹ (3) the risks and benefits of current patent reform proposals on the effective transfer and utilization of university intellectual property;³⁰ and (4) a proposal for positive change.³¹

I. THE NATION HAS BENEFITED FROM THE PATENTING AND LICENSING OF FEDERALLY FUNDED INVENTIONS

Following World War II, the United States government made a deliberate decision to adopt a national science policy, under which the federal government would be a primary source of funds for basic research at our public and private universities.³² This decision was a response to a 1945 report to President Franklin D. Roosevelt written by Vannevar Bush entitled, *Science: The Endless Frontier*.³³ Coming on the heels of the war, Bush made the case that science was a proper concern of government and funding basic research was necessary to protect national security, enhance public health and welfare, and grow the economy.³⁴

In the subsequent 30 years, federal funding became a large proportion of the basic University research budget.³⁵ However, it was not until the enactment of the Bayh-Dole Act in 1980,³⁶ together with its amendments in 1984³⁷ and augmentation in 1986³⁸ (collectively “Bayh-Dole”) that the government funding of research began to

National Institutes of Health Creating Hurdles or Clearing the Path for Biotechnology's Voyage into the Twenty-First Century?, 10 J. CONTEMP. HEALTH L. & POL'Y 309, 321 (1994).

²⁷ See Bagley, *supra* note 24, at 224 (noting that patent rules often force researchers to choose between academic discourse proprietary rights).

²⁸ See *infra* Part I.

²⁹ See *infra* Part II.

³⁰ See *infra* Part III.

³¹ See *infra* Part IV.

³² See 131 CONG. REC. 527 (1985) (statement of Hon. George E. Brown, Jr.); Richard C. Atkinson, President, University of California, Lecture at The United Nations University Tokyo, Japan: The Role of Research in the University of the Future 5 (Nov. 4, 1997), available at http://works.bepress.com/cgi/viewcontent.cgi?article=1062&context=richard_atkinson (last visited Mar. 30, 2009).

³³ Atkinson, *supra* note 32, at 5; VANNEVAR BUSH, OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT, SCIENCE THE ENDLESS FRONTIER: A REPORT TO THE PRESIDENT 8 (1945), available at <http://www.nsf.gov/od/lpa/nsf50/vbush1945.htm>.

³⁴ BUSH, *supra* note 33.

³⁵ See generally Atkinson, *supra* note 32, at 5 (crediting federal funding for placing Universities at the center of research).

³⁶ Bayh-Dole Act, Pub. L. No. 96-517, 94 Stat. 3015, 3019-29 (1980).

³⁷ Trademark Clarification Act of 1984, Pub. L. No. 98-620, sec. 501, 98 Stat. 3335, 3364-68 (1984).

³⁸ See Federal Technology Transfer Act of 1986, Pub. L. No. 99-502, sec. 9, 100 Stat. 1785, 1796 (1986) (codified as amended at 35 U.S.C. §§ 200-212 (2006)).

fulfill the vision of Vannevar Bush. Bayh-Dole provided a right and an implied duty to commercialize the fruits of federally funded research.³⁹ It permitted universities to take title to inventions arising from federally funded research,⁴⁰ used the patent system to promote utilization of federally funded inventions,⁴¹ encouraged collaboration with industry,⁴² required a preference toward licensing to small business and U.S. manufacturers,⁴³ required sharing royalties received from such licensing with inventors,⁴⁴ and provided the velvet hammer of “march-in rights” if the technology was not so utilized.⁴⁵

Bayh-Dole has been an unqualified success. *The Economist* in 2002 referred to Bayh-Dole as “[p]ossibly the most inspired piece of legislation to be enacted in America over the past half-century.”⁴⁶ This is because prior to Bayh-Dole, title to federally funded inventions rested with the federal government and incentives to utilize the technology were limited or even non-existent.⁴⁷ Thus, Bayh-Dole unlocked the technological, industrial and economic potential of America’s national science policy.⁴⁸ *The Economist* went on to say, “More than anything, this single policy measure helped to reverse America’s precipitous slide into industrial irrelevance.”⁴⁹

At the time Bayh-Dole was adopted, only a handful of universities were involved in patenting and licensing university inventions.⁵⁰ Today over 200 universities have technology transfer offices.⁵¹ This increase is a direct consequence of the passage of Bayh-Dole, as the law requires recipients of federal research funding to have a mechanism in place to carry out the requirements of the Act.⁵² The most recent licensing survey of the Association of University Technology Managers (“AUTM”) indicates that in 2007, its member institutions received almost \$50 billion of federal research funding, obtained over 3,600 patents, executed over 5,000 license or option agreements, started over 550 small companies, and had over 680 new products

³⁹ See 35 U.S.C. §§ 200–12; JENNIFER A. HENDERSON & JOHN J. SMITH, ACADEMIA, INDUSTRY, AND THE BAYH-DOLE ACT: AN IMPLIED DUTY TO COMMERCIALIZE 1 (2002), available at http://www.cimit.org/news/regulatory/coi_part3.pdf.

⁴⁰ 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3.

⁴¹ 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3.

⁴² 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3. More recently Congress has passed the CREATE Act which further facilitates collaborations between industry and universities. See Cooperative Research and Technology Enhancement (CREATE) Act of 2004, Pub. L. No. 108-453, 118 Stat. 3596, 3596–97 (amending 35 U.S.C. § 103(c)).

⁴³ 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3.

⁴⁴ 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3.

⁴⁵ 35 U.S.C. § 202; HENDERSON & SMITH, *supra* note 39, at 3.

⁴⁶ *Innovation’s Golden Goose*, ECONOMIST, Dec. 14, 2002, at 3.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ See HENDERSON & SMITH, *supra* note 39, at 2.

⁵¹ See About AUTM, <http://www.betterworldproject.org/about.cfm> (last visited Mar. 30, 2009) (stating that the Association of University Technology Managers has a membership of 3,600 licensing professionals representing more than 350 universities, research institutions, hospitals and government agencies); see also Lita Nelson, *The Rise of Intellectual Property Protection in The American University*, SCIENCE, March 6 1998, at 1460.

⁵² 35 U.S.C. § 207; 37 C.F.R. § 404.5 (2009).

introduced.⁵³ At least 27 universities earned more than \$10 million in 2007 from licensing the rights to vaccines, drugs, medical devices and other technology innovations.⁵⁴ Finally, over 3,800 small companies based on university research continue to operate, employing Americans and developing American technology.⁵⁵

Universities have long been generators for their local economies. But with the increase in federal research funding and the ability to use the patent system to transfer their inventions from the lab to the general public, American universities have become centers of innovation.⁵⁶ Thomas L. Friedman, in his book *The World is Flat*, quotes Bill Gates:

Our university system is the best [I]t is a great engine of innovation in the world, and with federal tax money, with some philanthropy on top of that, [it will continue to flourish]. . . . We will really have to screw things up for our absolute wealth not to increase. If we are smart, we can increase it faster by embracing this stuff.⁵⁷

But it is not simply the funding and the patent system that make American universities innovation engines; it is also the combination of a culture of openness, the availability of capital markets, the willingness of faculty entrepreneurs to take risk, and the strength of patents in the United States.⁵⁸

Universities generally do not have the ability to commercialize technology on their own.⁵⁹ Moreover, the technology they produce is often at an early stage of development.⁶⁰ This creates two realities: (a) Universities must rely on willing commercial partners, be they small start-ups or large established corporations;⁶¹ (b) because of the early stage of the technology, the amount of capital needed to commercialize technology is often very large, and the risk of failure is often very high.⁶²

In the vast majority of cases, the only thing that can justify the extraordinary expenditure of risk capital necessary to support university technology development is the promise of market exclusivity through a strong and robust patent portfolio.⁶³

⁵³ ASSOC. OF UNIV. TECH. MANAGERS, AUTM U.S. LICENSING ACTIVITY SURVEY: FY2007, at 11 (Robert Tieckelmann et al. eds., 2008), available at <http://www.autm.net/Content/NavigationMenu/Surveys/LicensingSurveysAUTM/FY2007LicensingActivitySurvey/AUTMUSLS07FINAL.pdf>.

⁵⁴ See *id.* at 44–48.

⁵⁵ *Id.* at 11.

⁵⁶ See *Innovation's Golden Goose*, *supra* note 46.

⁵⁷ THOMAS L. FRIEDMAN, *THE WORLD IS FLAT: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY 330–331* (Picador 2007) (2005).

⁵⁸ *Id.*

⁵⁹ See, e.g., HENDERSON & SMITH, *supra* note 39, at 5 (exemplifying the unavailability of manufacturing to industry standards at universities).

⁶⁰ See, e.g., Lemley, *supra* note 24, at 614 (describing universities as patenting the building blocks of technology).

⁶¹ See, e.g., HENDERSON & SMITH, *supra* note 39, at 5 (citing large university licensing to new companies and start-ups).

⁶² See, e.g., Richard J. Gilbert, *Dollars For Genes: Revenue Generation by the California Institute for Regenerative Medicine*, 21 BERKELEY TECH. L.J. 1107, 1124–25 (2006) (describing the millions of dollars necessary to develop, test, approve, and market a new drug).

⁶³ See, e.g., *id.* at 1135–36 (explaining how exclusive licenses to a technology can encourage investors to invest in the technology).

Indeed, in the experience of the authors, investors rely in large part on the strength of a start-up's patent portfolio to gauge whether it is worth taking the risk of investing.⁶⁴ These investors look to the promise of market exclusivity arising out of the company's patents to determine whether they will have adequate time to make a reasonable return.⁶⁵

Indeed, the importance of a supportive environment for start-up companies and university technology grows each year. Companies in major industries are curtailing their internal research programs, recognizing that discovery is costly and high-risk.⁶⁶ They have instead shifted this risk to universities and to small start-up companies.⁶⁷ This is a fundamental change, which signals that university innovation, and strong patent protection to move it into the marketplace, are more important today than ever before.⁶⁸

II. CERTAIN CHARACTERISTICS OF UNITED STATES PATENT LAW COMPLEMENT THE UNIVERSITY TECHNOLOGY TRANSFER ENVIRONMENT

There are three important characteristics of United States patent law that complement the University technology transfer environment. The first is a bias in favor of disclosure rather than trade secret.⁶⁹ The second is a unique system in which the first person to invent is accorded patent rights along with a generous one-year grace period for prior publication, use, or sale of the invention by the inventors.⁷⁰ The third is a presumption of validity for issued patents and significant remedies for infringement, which encourage technology users to license intellectual property rather than infringe.⁷¹

⁶⁴ See Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 653 (2002) ("Among venture capitalists, both the quantity and quality of patents have long been factors that are taken into consideration when deciding whether to invest in a company, particularly in its early stages.").

⁶⁵ See *id.*

⁶⁶ See Jules Duga et al., *Slowing Economy Dampens 2008 R&D Spending: The U.S. Research and Development Environment is Being Shaped in 2008 by a Myriad of Economic, Political, and Technical Factors*, R&D MAG., Feb. 2008, at F3, F15, available at http://www.rdmag.com/pdf/RD0802_FundForecast.pdf.

⁶⁷ See Ron A. Bouchard, *Balancing Public and Private Interests in the Commercialization of Publicly Funded Medical Research: Is There A Role for Compulsory Government Royalty Fees?*, 13 B.U. J. SCI. & TECH. L. 120, 132 (2007) (explaining that private firms "[t]ypically do not undertake socially desirable projects due to high transaction costs and the risks and uncertainties associated with them").

⁶⁸ See Kristen Osenga, *Closing in on Open Science: Trends in Intellectual Property & Scientific Research: Rembrandts in the Research Lab: Why Universities Should Take a Lesson From Big Business to Increase Innovation*, 59 ME. L. REV. 407, 410–11 (encouraging universities to view and exploit their intellectual property assets); see also *Out of Dusty Labs*, ECONOMIST, March 3, 2007.

⁶⁹ See *infra* Part II.A.

⁷⁰ See *infra* Part II.B.

⁷¹ See *infra* Part II.C.

A. Bias Favoring Disclosure

Universities are open environments.⁷² A principal goal of any university is to disseminate knowledge, typically through publishing research.⁷³ Indeed, a successful record of publication is generally a requirement for obtaining tenure and funding.⁷⁴ But there is a broader societal purpose in publication: to advance the research enterprise. Disclosure allows others to learn from discoveries and build upon them, thereby advancing the field—a virtuous cycle.⁷⁵

United States patent law is rooted in the U.S. Constitution at Article I, Section 8, clause 8 which grants Congress the power “[t]o promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries”⁷⁶ Thomas Jefferson, to whom this phrase is attributed, believed that the patent grant was necessary to induce inventors to disclose their inventions to the public.⁷⁷ Only through disclosure could the public learn from the inventor and improve on the invention.⁷⁸

⁷² See, e.g., Bagley, *supra* note 24 at 226 (“[P]rofessors are attracted to the chance to pursue similar interests in an academic arena where they are also endowed with freedom to research topics of their choice.”).

⁷³ AM. ASS’N OF UNIV. PROFESSORS, 1940 STATEMENT OF PRINCIPLES ON ACADEMIC FREEDOM AND TENURE WITH 1970 INTERPRETIVE COMMENTS 3 (10th ed. 2006) [hereinafter ACADEMIC FREEDOM], available at <http://www.aaup.org/NR/rdonlyres/EBB1B330-33D3-4A51-B534-CEE0C7A90DAB/0/1940StatementofPrinciplesonAcademicFreedomandTenure.pdf>.

⁷⁴ See Bagley, *supra* note 24, at 226–227.

⁷⁵ See *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418–19 (2007) (stating most inventions “[r]ely upon building blocks long since uncovered”); Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in VI THE WRITINGS OF THOMAS JEFFERSON: BEING HIS AUTOBIOGRAPHY, CORRESPONDENCE, REPORTS, MESSAGES, ADDRESSES AND OTHER WRITINGS, OFFICIAL AND PRIVATE 175, 180 (H.A. Washington ed., 1854) [hereinafter Letter from Thomas Jefferson], available at http://press-pubs.uchicago.edu/founders/documents/a1_8_8s12.html (stating that “[i]deas should freely spread from one to another over the globe, for the moral and mutual instruction of man”).

⁷⁶ U.S. CONST. art. I, § 8, cl. 8.

⁷⁷ *Graham v. John Deere Co.*, 383 U.S. 1, 7–10 (1966); Letter from Thomas Jefferson, *supra* note 75, at 180–81.

⁷⁸ See Letter from Thomas Jefferson, *supra* note 75, at 180–81.

If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it.

Id. at 180. Some commentators suggest that patents are not necessary for innovation and to a limited extent that is true. See, e.g., Samson Vermont, *Taming the Doctrine of Equivalents in Light of Patent Failure*, 16 J. INTELL. PROP. L. 83, 105 (2008) (“[P]atents outside chemistry and pharmaceuticals actually discourage innovation and that most innovators would be better off with no patent system than with the one we have.”). Innovators will innovate whether a patent system exists or not. See, e.g., *id.* The issue, however, is whether and how innovators will disclose their innovations so that others may learn from them. Letter from Thomas Jefferson, *supra* note 75, at 181. In other words an innovator can keep the innovation as a trade secret and use it primarily for private benefit. As a consequence, the public benefit will be more limited and innovation will be compromised. This is because disclosure, which is rewarded by the present patent system, allows the public to learn of and improve on innovation thus promoting the progress of the useful arts. *Id.* at 180.

Thus, the Constitution provides a “tit for tat” exchange. U.S. patent law requires full disclosure of how to make and use the invention,⁷⁹ including the best mode for using it.⁸⁰ In return for this disclosure, the government grants the right to exclude others from making, using, selling and importing the invention during the term of the patent, provided the other requirements of patentability are met.⁸¹

Thus, the choice of disclosure through patenting over trade secret translates into the ability to enforce one’s patent rights against an infringer.⁸² This is true even if an infringer independently discovered the same invention and had been secretly using it before the patent was issued.⁸³ In contrast, an inventor has no recourse under trade secret law against another entity that independently develops the same invention.⁸⁴

Overall, the bias in our Constitution against trade secrets aligns with the spirit of the university environment. One cannot concurrently hold a patent and keep a trade secret covering the same invention.⁸⁵ Universities, generally, do not harbor or benefit from trade secrets.⁸⁶ With students coming and going, collaboration amongst researchers with publication as an expectation, the university environment is not conducive to confidentiality.⁸⁷

Outside of the United States, however, the bias is tipped in favor of trade secrets.⁸⁸ Almost all foreign jurisdictions permit “prior user rights” which allow the continued use of a patented invention by one who had been using it as a trade secret from before the date for which the patent was applied.⁸⁹ The continued use is limited, not transferable and requires a royalty payment⁹⁰, but it does dilute the

⁷⁹ 35 U.S.C. §§ 112, 113 (2006) (requiring an inventor to provide detailed written descriptions and illustrations to facilitate the understanding of the patented idea).

⁸⁰ *Id.* § 112.

⁸¹ *Id.* § 154(a)(1).

⁸² See Andrew Beckerman-Rodau, *The Choice Between Patent Protection and Trade Secret Protection: A Legal and Business Decision*, 84 J. PAT. & TRADEMARK OFF. SOC’Y 371, 376–77 (2002) (explaining a choice must be made between trade secret or patent protection).

⁸³ See 35 U.S.C. § 154(a)(1) (granting the right to exclude all others); *Gillman v. Stern*, 114 F.2d 28, 31 (2d Cir. 1940) (“Just as a secret use is not a ‘public use,’ so a secret inventor is not a ‘first inventor.’”). *But see* 35 U.S.C. § 273(b)(1) (giving prior user rights for business method patents).

⁸⁴ See Beckerman-Rodau, *supra* note 82, at 383–84 (explaining that trade secret protection ends with “independent development by a third party”).

⁸⁵ Compare 35 U.S.C. § 112 (requiring a patent specification to include a written description of the invention to “[e]nable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same”), with UNIF. TRADE SECRETS ACT § 1(4)(ii) (amended 1985), 14 U.L.A. 538 (2005) (requiring that a trade secret “is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.”).

⁸⁶ See generally ACADEMIC FREEDOM, *supra* note 73, at 3 (maintaining publication and freedom of publication as a principle in universities).

⁸⁷ See *id.*

⁸⁸ See, e.g., Lisa M. Brownlee, *Trade Secret Use of Patentable Inventions, Prior User Rights and Patent Law Harmonization: An Analysis and Proposal*, 72 J. PAT. & TRADEMARK OFF. SOC’Y 523, 538 (1990) (“[U]nder certain countries’ prior user rights statutes evidences that hidden, secret prior use entitles the prior user to continued user rights.”).

⁸⁹ See, e.g., *id.* at 526 (“Virtually all countries with patent systems, with the exception of the United States and the Philippines, have FTF systems.”).

⁹⁰ See Sean T. Carnathan, *Patent Priority Disputes—A Proposed Re-Definition of “First-to-Invent,”* 49 ALA. L. REV. 755, 802 (1998).

scope of exclusivity of the patent owner.⁹¹ More importantly it rewards secrecy, which ultimately delays advancement of the “useful arts.”⁹²

Given our country’s long held bias in favor of disclosure, and the extraordinary technological innovation in this country over its history, it is no surprise that efforts to incorporate prior user rights into U.S. patent law have failed, except to a limited extent applied to business method patents.⁹³

Ultimately, the bias against trade secrets encourages collaboration, particularly between universities and the private sector.⁹⁴ Congress has recognized that such collaboration furthers the goals of United States patent law.⁹⁵ To that end, Congress passed the CREATE Act of 2004.⁹⁶ One of the principal benefits of the CREATE Act is that it eliminates the threat that secret prior art of individual collaborators can be used to invalidate the patented inventions coming out of a pre-established, written, joint research agreement.⁹⁷ Consequently, both patent law’s bias against trade secret and the CREATE Act encourage collaborators to be more open with one another, thereby increasing the likelihood that the joint research will bear fruit.⁹⁸

B. First to Invent and the Grace Period

Two provisions that are unique to United States patent law are very important to the open environment of the university. The first is that the United States awards patent rights to the first person to invent, rather than the first person to file a patent application.⁹⁹ The second is the provision of a grace period, whereby an inventor is not barred from obtaining a patent even if he or she has made the invention available to the public through publication, use, or sale during the year prior to filing.¹⁰⁰

⁹¹ See, e.g., Brownlee, *supra* note 88, at 534 (stating that prior user rights “[p]rovide a right for the first inventor to continue use concurrently with the patentee.”).

⁹² See *id.* (“With no public awareness of the invention, there is no contribution to the art on which to build further invention.”).

⁹³ See e.g., Patent Reform Act of 2007, S. 1145, 110th Cong. (2007) (terminating in the Senate). *But see* 35 U.S.C. § 273(b)(1) (2006) (giving prior user rights for business method patents).

⁹⁴ See 35 U.S.C. § 200 (promoting collaboration between universities and commercial entities by using the patent system).

⁹⁵ 150 CONG. REC. S11,775 (daily ed. Nov. 20, 2004); see Cooperative Research and Technology Enhancement (CREATE) Act of 2004, Pub. L. No. 108-453, 118 Stat. 3596, 3596–97.

⁹⁶ See CONG. REC. S11,775 (“The CREATE Act corrects a provision in the Bayh-Dole Act which, when read literally, runs counter to the intent of that legislation.”); CREATE Act sec. 2 (codified as amended at 35 U.S.C. § 103(c)).

⁹⁷ 150 CONG. REC. S11,775 (“[E]nsuring that non-public information is not considered ‘prior art’ when the information is used in a collaborative partnership under the Bayh-Dole Act.”); CREATE Act sec. 2 (codified as amended at 35 U.S.C. § 103(c)) (deeming ownership of prior art to all parties in an effective joint research agreement).

⁹⁸ See 35 U.S.C. § 112 (requiring disclosure of the invention in order to receive patent rights); *Id.* § 103(c) (permitting collaboration on research).

⁹⁹ *Id.* § 102(a).

¹⁰⁰ *Id.* § 102(b).

The first-to-invent and grace period provisions compliment the university culture of publishing swiftly and frequently.¹⁰¹ While publication may bar an inventor from obtaining patent rights under a foreign first-to-file system, in many cases the same inventor can still secure a U.S. patent.¹⁰² Because the U.S. is an enormous market, there remains considerable value in choosing to publish quickly, then obtain a U.S. patent, rather than guard one's discovery in order to secure a foreign patent.¹⁰³

These provisions also facilitate a university's ability to operate effectively on limited resources. University inventions are usually very early-stage technologies.¹⁰⁴ The grace period allows the inventor to better understand the invention and the university to make an informed decision about whether it is worth expending resources to file a patent application.¹⁰⁵ Because university technology transfer offices often have limited support and personnel, the grace period provides much needed time to adequately weigh the costs and benefits of filing.¹⁰⁶

Most importantly, the first-to-invent system prevents a race to the patent office.¹⁰⁷ Unlike foreign first-to-file systems, inventors are not pushed to file hastily in order to obtain United States patent rights.¹⁰⁸ This is important because Universities are frequently on the leading edge of complicated technologies, which may require significant time to evaluate.¹⁰⁹ Yet universities often operate with slow or limited resources as explained above.¹¹⁰ Thus, valuable patent opportunities could be lost if inventors and universities did not act quickly enough, or alternatively, resources could be wasted on unnecessary or unproductive filings.¹¹¹

C. Significant Infringement Remedies and the Presumption of Validity Benefit Universities by Encouraging Licensing and Innovation

U.S. patent law provides a strong incentive to obtain a license and avoid infringement.¹¹² Infringement can be a costly activity.¹¹³ Damages are often uncertain in amount, and can be increased if the infringement is found to be willful.¹¹⁴ Infringers also face the prospect of injunction against the infringing

¹⁰¹ See, e.g., Margo A. Bagley, *The Need for Speed (and Grace): Issues In a First-Inventor-To-File World*, 23 BERKELEY TECH. L.J. 1035, 1058 (2008) (“[A] one-year grace period is beneficial and important for small entity inventors, including academic researchers.”).

¹⁰² See *id.* at 1056, 1058; 35 U.S.C. § 102(b).

¹⁰³ See Bagley, *supra* note 101, at 1051–56.

¹⁰⁴ Lemley, *supra* note 24, at 614.

¹⁰⁵ See Bagley, *supra* note 101, at 1051.

¹⁰⁶ See *id.* at 1046.

¹⁰⁷ F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. REV. 55, 96–97 (2003).

¹⁰⁸ See Kieff, *supra* note 107, at 96–98.

¹⁰⁹ See Bagley, *supra* note 101, at 1046.

¹¹⁰ *Id.*

¹¹¹ *Id.* at 1047.

¹¹² See 35 U.S.C. §§ 273, 284–85 (2006) (stating the grounds for infringement, the availability of treble damages upon a finding of infringement, and the award of attorneys fees for “exceptional cases”).

¹¹³ See *id.* § 284.

¹¹⁴ See *id.*

manufacture, use, sale or importation of the invention.¹¹⁵ Moreover, the presumption of patent validity under U.S. law increases the challenge of defending against a charge of infringement.¹¹⁶ Thus, it is often much more cost-effective and certain to prospectively obtain a license.

This incentive to license is particularly important for a university technology transfer office.¹¹⁷ While universities obtain many patents, they do not themselves typically make products.¹¹⁸ Instead they depend on the ability to license patents to established or start-up companies to commercialize their inventions.¹¹⁹ If patents are weak and the damages for infringing are low, or at least no greater than the cost of licensing, it becomes much less attractive for a company to take a license.¹²⁰

Strong patents and a high cost for infringing also stimulate innovation. If the cost of infringement is high, and a license is not available or that cost is also too high, the alternative is to design-around the patent.¹²¹ Designing around is both legal and desirable to further innovation.¹²² The design-around may result not just in an incremental improvement, but in the creation of disruptive innovative technology that leapfrogs pre-existing technology.¹²³

¹¹⁵ See 35 U.S.C. §§ 273, 283 (stating the grounds for infringement, and allowing injunctive relief for patent infringement “in accordance with the principles of equity”).

¹¹⁶ See 35 U.S.C. § 282 (presuming the validity of patents); *Avia Group Int’l, Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1562 (Fed. Cir. 1988) (placing the burden on a challenger to disprove the validity of a patent with clear and convincing evidence).

¹¹⁷ See ASSOC. OF UNIV. TECH. MANAGERS, *supra* note 53, at 34 (stating that licensing is the primary responsibility of technology transfer offices and “[i]s the process that provides the institution the guarantee that a given technology will be used to further the public good and, perhaps, generate revenue for the institution.”).

¹¹⁸ See Diana Marrero, *Drug-Makers, High-Tech Companies Clash Over Patents: Debate on Reform Plan Before Congress has Big Implications For State Investors*, MILWAUKEE J. SENTINEL, May 27, 2008, at A1 (citing statistics of the numbers of patents granted to and licensing agreements entered into by WARF).

¹¹⁹ See generally OFFICE OF TECH. COMMERCIALIZATION, PURDUE RESEARCH FOUND., 2007 ANNUAL REPORT 18–19 (2007), available at <http://www.prf.org/pdf/2007%20Annual%20Report.pdf> (exemplifying start-up and licensing statistics).

¹²⁰ See Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?*, 4 J. COMPETITION L. & ECON. 535, 538 (2008) (“For weak patents, [the odds the patent will be found valid and infringed] is so low that, pending patent litigation, [a downstream monopolist] would without a license make more expected profits by selling the product without redesigning it, because the odds are sufficiently low that the patent holder will win . . .”).

¹²¹ See Dana W. Hayter, *When a License is Worse Than a Refusal: A Comparative Competitive Effects Standard to Judge Restrictions in Intellectual Property Licenses*, 11 BERKELEY TECH. L.J. 281, 284 (1996) (noting that a patent holder’s refusal to license create more incentive in others to invent around the invention).

¹²² *Westvaco Corp. v. Int’l Paper Co.*, 991 F.2d 735, 745 (Fed. Cir. 1993) (“Designing or inventing around patents to make new inventions is encouraged.” (quoting *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991))).

¹²³ See *id.* (“[D]esigning new and possibly better or cheaper functional equivalents is the stuff of which competition is made and is supposed to benefit the consumer.” (quoting *State Indus., Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1235–36 (Fed. Cir. 1985))).

III. RISKS AND BENEFITS TO UNIVERSITY TECHNOLOGY TRANSFER UNDER THE PROPOSED PATENT REFORM

As stated above, the present patent system fosters the university technology transfer environment in three ways: 1) it promotes disclosure and is biased against trade secret;¹²⁴ 2) it is a first-to-invent, rather than a first-to-file system that provides a one year grace period to the inventor;¹²⁵ and 3) it provides significant infringement remedies and a presumption of validity for issued U.S. patents.¹²⁶ The most recent patent reform proposals would retain the bias against trade secret by continuing to exclude prior user rights; however, they would create significant uncertainty for universities by converting the United States to a first-to-file system and diminishing infringement remedies.

The remainder of this paper will analyze selected provisions of the 111th Congress patent reform proposals, and discuss their potential impact on university interests. As mentioned above, the Patent Reform Act of 2007 (“H.R. 1908”) passed in the House of Representatives¹²⁷, but stalled in the Senate (“S. 1145”).¹²⁸ The Patent Reform Act of 2008¹²⁹ (“S. 3600”) was introduced in September 2008 and referred to Committee during the 110th Congressional Session, but never passed into law.¹³⁰ The 111th Congressional Session House and Senate Patent Reform Acts of 2009, are very similar to each other and to the Patent Reform Act of 2007 passed by the House.¹³¹ The Patent Reform Act of 2007, which was passed by the House, created a tremendous amount of commentary from representatives of a variety of industries including universities.¹³² A number of provisions in S. 3600 were included

¹²⁴ See *supra* Part II.A.

¹²⁵ See *supra* Part II.B.

¹²⁶ See *supra* Part II.C.

¹²⁷ 153 CONG. REC. D1,173 (daily ed. Sept. 7, 2007).

¹²⁸ See S. 1145 (as placed on Senate Legislative Calendar No. 563, January 24, 2008).

¹²⁹ Patent Reform Act of 2008, S. 3600, 110th Cong. (2008).

¹³⁰ See Patent Reform Act of 2008, S. 3600, 110th Cong. (2008) (as introduced in the Senate on September 25, 2008 without any further action).

¹³¹ Compare Patent Reform Act of 2009, H.R. 1260, 111th Cong. (2009) (proposing amendments to Title 35 of the United States Code) and Patent Reform Act of 2009, S. 515, 111th Cong. (2009) (same), with Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007) (same).

¹³² See Letter from the Presidents of the Big Ten Universities to Patrick Leahy, Chairman, S. Judiciary Comm. & Arlen Specter, Ranking Member, S. Judiciary Comm. (June 21, 2007) [hereinafter Big Ten Letter] (on file with author) (urging “[c]areful and thoughtful approach to the committee’s consideration of patent reform legislations.”); Letter from Charles E. Phelps, Provost, Univ. of Rochester, to John Conyers, Chairman, House Comm. on the Judiciary (June 18, 2007) [hereinafter Rochester Letter] (on file with author) (expressing University of Rochester’s concerns with the H.R. 1908 that “[m]ay significantly undermine the commercialization of university research.”); Letter from F. James Sensenbrenner, Jr., Member of Cong., to John Conyers, Chairman, House Comm. on the Judiciary (June 5, 2007) (on file with author) (expressing the view that all relevant issues concerning H.R. 1908 have not been considered); Letter from Michael R. Orme, General Counsel, Brigham Young Univ., to Orrin G. Hatch, United States Senator, at 2 (May 1, 2007) [hereinafter BYU Letter] (on file with author) (identifying and inviting consideration of “[a] few proposals in the Patent Reform Act of 2007, which, if passed, appear to create new challenges and disadvantages for universities and other patent holders similarly situated.”); Letter from Fred H. Reinhart, Assoc. Vice President for Research, Wayne State Univ., to John Conyers Jr., United States Representative (Apr. 25, 2007) [hereinafter WSU Letter] (on file with author) (addressing Wayne State University’s concerns about the proposed modifications to U.S. patent law); Sarah M.

to address the concerns expressed over the 2007 bill and it is expected that a Senate bill substantially similar to the 2007 bill will be introduced in the 111th Congressional Session to address the Senate Patent Reform Act bill of 2009.¹³³ Table 1 contains a point-by-point comparison of selected provisions in H.R. 1145, and S. 3600.¹³⁴

A. The Costs and Benefits of a First-to-File System Are Uncertain for Universities

One of the main goals of the 110th Congress patent reform proposals has been to convert to a first-to-file system in order to abolish the United States' status as the only country practicing a first-to-invent system.¹³⁵ Several university organizations supported switching to the first-to-file system.¹³⁶ However, this support was conditioned on the inclusion of three provisions: an effective grace period for filing that allows scientists to maintain their culture of collegial discussion and preserve the peer review process, a strong inventor's oath or declaration requirement, a continuation of provisional applications and elimination of prior user rights.¹³⁷

Though S. 3600 (as introduced by Senator Kyl) incorporates these provisions, it still presents potential problems for universities. To begin, the Bill would abolish interference proceedings, which are currently used to determine priority of inventorship.¹³⁸ Instead, the USPTO would conduct "derivation" proceedings to determine if an applicant derived an invention from the petitioner.¹³⁹ Challengers would have only one year from the date the application is published in which to petition for the derivation proceeding.¹⁴⁰ Given that universities often do not have sufficient staff or budget to monitor third-party filings, this one-year window could create a substantial hardship.¹⁴¹ Also, if universities do not file first or petition for a

King, *Clearing the Patent Thicket: The Supreme Court and Congress Undertake Patent Reform*, INTELL. PROP. & TECH. L.J., September 2007, at 13, 16 (noting divisive opinions regarding the Patent Reform Act of 2007 based on industry).

¹³³ Matthew M. Peters, Legislative Update, *The Equitable Inequitable: Adding Proportionality and Predictability to Inequitable Conduct in the Patent Reform Act of 2008*, 19 DEPAUL J. ART. TECH. & INTELL. PROP. L. 77, 78 (2008).

¹³⁴ See *infra* TABLE I.

¹³⁵ See H.R. 1908 § 3 (establishing and defining the right of the first inventor to file); S. 3600 § 2 (same).

¹³⁶ See, e.g., ASSOC. OF AMERICAN UNIVS. ET AL., COMMENTS ON H.R. 1908 AND S. 1145, THE PATENT REFORM ACT OF 2007, at 1–2 (2007), available at http://www.patentsmatter.com/media/issue/resources/20070501_UnivColl.pdf (stating that the Association of American Universities, American Council on Education, National Association of State Universities and Land-Grant Colleges, Association of American Medical Colleges, and Council on Governmental Relations "[d]o not oppose the U.S. patent system moving from a first-to-invent to a first-inventor-to-file system.>").

¹³⁷ See *id.*

¹³⁸ Patent Reform Act of 2008, S. 3600, 110th Cong. § 2 (h)–(j) (2008) (replacing interference proceedings with derivation proceedings); see 35 U.S.C. § 135 (2006) (authorizing interference proceedings).

¹³⁹ S. 3600 § 2(i).

¹⁴⁰ *Id.* (proposing amendment to 35 U.S.C. § 135(a)(1)).

¹⁴¹ Cf. ASSOC. OF UNIV. TECH. MANAGERS, *supra* note 53 at 17–8 (stating that U.S. University technology transfer programs depend on the staff and resources available to the program and indicates that most offices have between seven to fourteen staff members); Bagley, *supra* note 101 at 1046 (stating that Technology Transfer Offices have limited funds).

derivation proceeding, experimental university research could be stifled by assertions of infringement given the very limited protection provided by the experimental use defense after the Federal Circuit's decision in *Madey v. Duke*.¹⁴²

The proposed patent reforms do favor early disclosure, however, by exempting prior art that arises during a one-year grace period after the applicant publishes the invention regardless of whether the prior art was derived from the applicant.¹⁴³ To that extent, the bills compliment the university technology transfer environment and furthers the Constitutional purpose of U.S. patent law.¹⁴⁴

B. The Proposed Reforms Diminish Infringement Remedies and Patent Strength

1. Apportionment of Damages

The two principal patent reform bills from the 111th Congress contained sections aimed to curb damage awards in infringement cases.¹⁴⁵ University organizations generally agreed that the bills introduced an inflexible methodology for the calculation of damages.¹⁴⁶ They feared that inappropriately low damage awards would result, thus reducing the deterrent effect that comes from a judgment of infringement.¹⁴⁷ Some even contended that the bills would make a finding of infringement no more costly than negotiating a license *ex ante*, or worse, that it would equate to the grant of a compulsory license.¹⁴⁸ Universities feared that the provision would reduce the incentive to license and invest effort and resources in commercializing university-developed inventions.¹⁴⁹ Instead, universities maintained that courts should continue to have discretion in determining which economic principles should apply to damages calculations based on the facts of each case.¹⁵⁰

¹⁴² See *Madey v. Duke Univ.*, 307 F.3d 1351, 1361 (Fed. Cir. 2002) (concluding that the experimental use defense is very narrow); see also ASSOC. OF AMERICAN UNIVS. ET AL., *supra* note 136, at 5 (“We believe that the Committee should give careful consideration . . . to inclusion of an experimental research exemption in any patent reform legislation that is enacted.”).

¹⁴³ See Patent Reform Act of 2009, S. 515, 111th Cong. § 2 (2009) (proposing amendment to 35 U.S.C. § 102); S. 3600 at § 2 (same).

¹⁴⁴ Compare S. 515 § 2 (eliminating a statutory bar due to publication under 35 U.S.C. § 102(a) and granting a one year grace period), and S. 3600 at § 2 (same), with U.S. CONST. art. I, § 8, cl. 8 (granting a limited monopoly for disclosure “[t]o promote the progress of science and useful arts.”), and ACADEMIC FREEDOM, *supra* note 73, at 3 (maintaining publication and freedom of publication in the university setting).

¹⁴⁵ Patent Reform Act of 2009, H.R. 1260, 111th Cong. § 5 (2009) (proposing amendment to 35 U.S.C. § 284); S. 515 § 4 (same).

¹⁴⁶ See ASSOC. OF AMERICAN UNIVS. ET AL., UNIVERSITY VIEWS ON S. 1145, THE PATENT REFORM ACT OF 2007, at 1–2 (2008) [hereinafter UNIVERSITY VIEWS], available at www.aau.edu/WorkArea/showcontent.aspx?id=2538 (discussing opposition to apportionment of damages in the Patent Reform Act of 2007 that is similar to the same section of the Patent Reform Act of 2009).

¹⁴⁷ *Id.*

¹⁴⁸ See, e.g., WSU Letter, *supra* note 132, at 2.

¹⁴⁹ See, e.g., *id.*

¹⁵⁰ See Big Ten Letter, *supra* note 132, at 1; ASSOC. OF AMERICAN UNIVS. ET AL., *supra* note 136, at 4.

The damages provisions of S. 3600, the Patent Reform Act of 2008, introduced in the waning days of the 110th Congress by the Honorable Jon Kyl are an improvement but still contain rigid and unfavorable limitations. For example, there are severe limits on when a finder of fact can consider “a standard or average ratio or division of profits, an industry average rate for royalties, or other method that are not based on the particular benefits or advantages of the use of the invention” or a “comparison to royalties paid for patents other than the patent in suit.”¹⁵¹ Marketplace negotiations for patent licenses normally rely on industry standards and exemplary transactions.¹⁵² The parties consider this information, and then make adjustments up or down based on the unique features of the deal.¹⁵³ This includes not just the nature of the patents at issue, but also the nature of the licensee, the industry, and the product or service.¹⁵⁴ Under the criteria set out in the S. 3600, it would be difficult for patentees to present evidence of industry standards and comparable deals. For example, one of the triggers to apply a standardized measure is that “the use of the invention is the primary reason for the infringing product or process.”¹⁵⁵ This is rarely the case for universities, which perform basic research that is often used to enable the creation of a product.¹⁵⁶ As another example, to rely on a rate from a “comparable patent[],” S. 3600 requires that the patent is “found to be economically comparable to the patent in suit.”¹⁵⁷ There will likely be arguments over what patents are “economically comparable” and, even if two patents are not of comparable value, knowing the market price for the first can help a finder of fact determine the market price for the second.¹⁵⁸ For example, if the industry charges a royalty rate of 10% for a patent of only limited value, this information is powerful evidence that the price of a much more important patent in the industry should be greater than 10%.¹⁵⁹ The applicability of such data seems to be prohibited under S. 3600.¹⁶⁰ The complex set of criteria for applying industry standards and comparable rates, even if they do not bar outright the use of these metrics, will likely proliferate the number of challenges to a reasonable royalty analysis and potentially increase appeals regarding damages.

S. 3600 also implements a procedural change unfavorable to patent holders: either party to litigation can force bifurcation of the liability and damages phases of the trial.¹⁶¹ Bifurcation usually increases the costs of litigation by extending the

¹⁵¹ Patent Reform Act of 2008, S. 3600, 110th Cong. § 4 (2008) (proposing amendment to 35 U.S.C. § 284(d) and (e)).

¹⁵² See, e.g., Ted Hagelin, *Valuation of Patent Licenses*, 12 TEX. INTELL. PROP. L.J. 423, 424 (2004).

¹⁵³ See, e.g., *id.* at 424–25.

¹⁵⁴ See, e.g., *id.*

¹⁵⁵ S. 3600 § 4 (proposing amendment to 35 U.S.C. § 284(d)(1)).

¹⁵⁶ See, e.g., Marrero, *supra* note 118 at A1 (citing statistics of the numbers of patents granted to and licensing agreements entered into by the Wisconsin Alumni Research Foundation).

¹⁵⁷ S. 3600 § 4(e) (proposing amendment to 35 U.S.C. § 284(e)(1)).

¹⁵⁸ See Hagelin, *supra* note 152, at 424–25.

¹⁵⁹ See *id.*

¹⁶⁰ See S. 3600 § 4(d)–(e) (stating that “[a] reasonable royalty shall not be determined by the use of an average ratio for the division of profits, an industry average rate for royalties” or “[b]y comparison to royalties paid for patents other than the patent ins suit” unless the party asserting the claim demonstrates certain requirements).

¹⁶¹ See *id.* at § 4(g) (proposing amendment to 35 U.S.C. § 284(g)).

length of trials.¹⁶² Because Universities are often resource-limited, increasing the complexity and length of litigation does not favor the university community.¹⁶³

2. Post-Grant Review

Another feature of the 110th Congress patent reform bills is the increased opportunity for post-grant review of issued patents.¹⁶⁴ Proponents of post-grant review generally argue that such review, in the form of an administrative procedure at the USPTO, would be a cheaper alternative to litigation.¹⁶⁵ University groups generally supported a revised post-grant review procedure in the H.R. 1908 and S. 1145 for this reason.¹⁶⁶ More specifically, universities supported the “first-window” provision therein, which allowed a challenge to patents within the first 12 months of issuance through an administrative procedure.¹⁶⁷ However, universities had serious concerns about the open-ended “second window,” which permitted a broad range of challenges to patents over their lifetimes.¹⁶⁸ Specifically, some university groups contended that this second window introduced a high degree of uncertainty into patent licensing by precluding any element of finality in the patenting process, thereby negatively affecting the presumption of validity.¹⁶⁹ In addition, the second window created yet another venue in which Universities would be forced to defend themselves against larger corporate entities looking for strategic leverage once involved in district court patent litigation.¹⁷⁰ The groups recommended that at a minimum, Congress should limit the second window to consideration of

¹⁶² See, e.g., *Kos Pharms., Inc. v. Barr Labs., Inc.*, 218 F.R.D. 387, 389 (S.D.N.Y. 2003) (discussing the debate between plaintiffs and defendants over bifurcating patent trials).

¹⁶³ See BYU Letter, *supra* note 132, at 4 (indicating that universities have limited resources are “[m]ore likely to fold in the face of suffocating legal fees.”); see also Rochester Letter, *supra* note 132, at 2 (“Educational institutions such as ours have limited budgets with which to protect our intellectual property . . .”).

¹⁶⁴ S. 3600 § 5; Patent Reform Act of 2007, H.R. 1908, 110th Cong. § 6 (2007).

¹⁶⁵ Robert Fieseler, *Patent Reform Act: Cut Post-Grant Review*, NAT’L L.J., Feb. 9, 2009, at 23.

¹⁶⁶ See UNIVERSITY VIEWS, *supra* note 146, at 3 (supporting only the post grant review “first window”); see also Letter from Nathaniel F. Wienecke, Assistant Sec’y for Legislative and Intergovernmental Affairs for U.S. Dep’t. of Commerce, to Patrick J. Leahy, Chairman, Senate Comm. on the Judiciary, at 4 (Feb. 4, 2008) (supporting establishment of post-grant patent review procedures) [hereinafter DoC Letter]; WSU Letter, *supra* note 132, at 2 (opposing “second window” post grant review, but stating “Wayne State University, like many universities, sees few benefits for itself in allowing oppositions to patents, but believes improved patent quality and certainty and time and cost savings resulting from a reduction in the number of patent challenges after issuance are valuable to the system and could adjust”).

¹⁶⁷ See, e.g., UNIVERSITY VIEWS, *supra* note 146, at 3.

¹⁶⁸ See *id.* at 3; see also Big Ten Letter, *supra* note 132, at 1 (“Legislation should not allow any ‘second window’ for reconsideration of patents.”); Rochester Letter, *supra* note 132, at 2 (“[A]llowing an indefinite ‘second window’ for administrative oppositions creates an incentive for the infringer to repeatedly challenge the patent they are infringing.”); WSU Letter, *supra* note 132, at 2 (“We are, however, adamantly opposed to any ‘second window’ right.”).

¹⁶⁹ See BYU Letter, *supra* note 132, at 3 (stating that the “second window” will “[m]ake patents less certain and more difficult to rely upon after issuance.”); WSU Letter, *supra* note 132, at 3 (“[S]econd window opportunity is a disincentive to innovate and introduces a high degree of uncertainty into patent licensing . . .”).

¹⁷⁰ See e.g., BYU Letter, *supra* note 132, at 4.

published prior art, insert an estoppel effect to prevent serial challenges, and include a presumption of validity for all issued patents.¹⁷¹ Multiple windows, coupled with an ongoing potential for litigation, poses a potentially costly and lengthy process for universities whose main goal is to simply license their technology.¹⁷²

S. 3600 retains a first window during which the USPTO can consider all requirements of patentability. This provision includes a presumption of patent validity and seems to be an improvement over H.R. 1908 and S. 1145.¹⁷³ There are, however, still areas of concern in the design of the first window. The USPTO can consider questions of enablement and written description in the first window, but broadening amendments are prohibited.¹⁷⁴ Unlike prior art rejections, a patentee may not be able to overcome these 35 U.S.C. § 112 validity rejections by simply narrowing the claims.¹⁷⁵ For example, in certain instances a written description rejection can only be overcome by removing a limitation, potentially rendering the claim broader.¹⁷⁶ Constraining the types of amendments available in the post-grant review may inhibit a patentee's ability to protect the full scope of its invention. In contrast, in a reissue application a patentee can broaden claims as long as the proceeding commences within 2 years of the issuance of the patent.¹⁷⁷

The design of the second window in the S. 3600 is more favorable to patentees than that of H.R. 1908 and S. 1145.¹⁷⁸ Unlike the open-ended second window in H.R. 1908 and S. 1145, S. 3600 limits second window challenges to novelty and obviousness in light of published prior art and sets a deadline for initiation of second window challenges.¹⁷⁹ However, questions remain about whether multiple opportunities for review plus the potential for litigation ultimately benefits infringers more than patent holders, particularly those infringers for whom increased time and expense are not deterrents.¹⁸⁰

¹⁷¹ See ASSOC. OF AMERICAN UNIVS. ET AL., *supra* note 136, at 3 (recommending estoppel); UNIVERSITY VIEWS, *supra* note 146, at 3 (recommending limiting the scope of the "second window" to prior art); Rochester Letter, *supra* note 132, at 2 (recommending the presumption of validity be upheld for patents under review).

¹⁷² See, e.g., UNIVERSITY VIEWS, *supra* note 146, at 2–3.

¹⁷³ Patent Reform Act of 2008, S. 3600, 110th Cong. §§ 321(a), 321(b)(1), 331(a) (2008); see also 35 U.S.C. § 282 (2006) (regarding presumption of validity and defenses).

¹⁷⁴ See S. 3600 § 5 (proposing amendment to 35 U.S.C. 332(c)).

¹⁷⁵ See *id.* (prohibiting the enlargement of the scope of claims).

¹⁷⁶ See U.S. PAT. & TRADEMARK OFFICE, U.S. DEPT' OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2163.05 (6th rev. 2007) [hereinafter MPEP]; *In re Peters*, 723 F.2d 891, 893–94 (Fed. Cir. 1983) (reversing the USPTO Board of Appeals' rejection of claims in a reissue application that were broadened by removing an unnecessary limitation because this did not violate the written description requirement).

¹⁷⁷ See 35 U.S.C. § 251 (regarding reissue of defective patents); *Peters*, 723 F.2d at 893–94; MPEP, *supra* note 176, § 2163.05.

¹⁷⁸ Compare S. 3600 § 5 (proposing amendments to 35 U.S.C. § 322 (a), (c)), with Patent Reform Act of 2007, S. 1145, 110th Cong. § 6 (2007) (proposing amendment to 35 U.S.C. § 322), and Patent Reform Act of 2007, H. 1908, 110th Cong. § 6 (2007) (proposing amendment to 35 U.S.C. § 322).

¹⁷⁹ S. 3600 § 4 (proposing amendments to 35 U.S.C. § 322 (a), (c)).

¹⁸⁰ See JOHN R. THOMAS & WENDY H. SCHACHT, CONG. RESEARCH SERV., PATENT REFORM IN THE 110TH CONGRESS: INNOVATION ISSUES 11, 29 (2007) ("[C]oncerns have arisen over oppositions because they too may be costly, complex, and prone to abuse as a means for harassing patent owners.").

The post grant review proposals do contain estoppel provisions, which could limit subsequent claims against previously raised issues. The estoppel provisions in all three bills apply to the first and second windows of post-grant review.¹⁸¹ The S. 3600 estoppel provision is broader, however, in that it applies to petitioners, real parties in interest, and their privies, while the provisions in H.R. 1908 and S. 1145 applied only to petitioners.¹⁸² In addition, the S. 3600 provision prevents subsequent challenges based on any issue that the petitioner actually raised in the first or second window, or could have raised in the second window,¹⁸³ whereas H.R. 1908 and S. 1145 barred only issues that were actually raised in either window.¹⁸⁴ Still, the S. 3600's estoppel provisions are more lenient than the current standard for *inter partes* reexamination proceedings.¹⁸⁵ First window estoppel in S. 3600 applies only to issues that were actually raised, while *inter partes* reexamination estoppel applies to issues that were or could have been raised at any point in the reexamination proceeding.¹⁸⁶ Given that universities are likely to be patent holders rather than infringers, it is questionable whether post grant review offers them any significant benefit over the present system.¹⁸⁷

Another serious problem with the proposed post-grant review in all three bills is that it increases the workload of an already overworked USPTO.¹⁸⁸ One of the purported reasons for patent reform was to increase patent quality.¹⁸⁹ That is also the stated reason for the enhanced post-grant review provisions.¹⁹⁰ Reduced patent quality, however, is symptomatic of an overworked USPTO.¹⁹¹ Even stronger evidence of the USPTO's problems is the serious backlog of patent applications which continues to grow in spite of the Office's attempts to add staff.¹⁹² This suggests that rather than enhance patent quality, the post-grant review provisions may simply exacerbate the difficulties faced by the USPTO in addressing a growing backlog.¹⁹³

¹⁸¹ S. 3600 § 5 (proposing amendment to 35 U.S.C. § 322(d)); S. 1145 § 6 (proposing amendments to 35 U.S.C. § 334); H.R. 1908 § 6 (same).

¹⁸² S. 3600 § 5 (proposing amendment to 35 U.S.C. § 322(d)); S. 1145 § 6 (proposing amendments to 35 U.S.C. § 334); H.R. 1908 § 6 (same).

¹⁸³ S. 3600 § 5 (proposing amendment to 35 U.S.C. § 322(d)).

¹⁸⁴ S. 1145 § 6 (proposing amendments to 35 U.S.C. §§ 334); H.R. 1908 § 6 (same).

¹⁸⁵ Compare S. 3600 § 5 (proposing amendment to 35 U.S.C. § 322(d)), with 37 C.F.R. § 1.907(b)–(c) (prohibiting subsequent *inter partes* reexamination once a final decision has been entered), and MPEP, *supra* note 176, § 2601 (discussing statutory estoppel upon subsequent review of an *inter partes* reexamination).

¹⁸⁶ See 37 C.F.R. § 1.907(b)–(c); MPEP, *supra* note 176 § 2601.

¹⁸⁷ See, e.g., UNIVERSITY VIEWS, *supra* note 146, at 3 (noting their concern with the post grant second window).

¹⁸⁸ See S. 3600 (proposing amendments such that the USPTO will conduct post-grant review); S. 1145 (same); H.R. 1908 (same); Chris J. Katopis, *Perfect Happiness?: Game Theory as a Tool for Enhancing Patent Quality*, 10 YALE J.L. & TECH. 360, 367 (2007) (discussing the PTO's "enormous workload").

¹⁸⁹ 155 CONG. REC. S2,706 (daily ed. Mar. 3, 2009) (statement of Sen. Leahy).

¹⁹⁰ See *id.*

¹⁹¹ See *id.* at S2,707.

¹⁹² Katopis, *supra* note 188, at 367.

¹⁹³ See Chief Judge Michel Address, *supra* note 15, at 2–4. (discussing that deferred examination by the USPTO which "[i]s already overwhelmed by ex parte examinations with average pendencies of over three years" as a means of "[w]eeding out bad patents is unconvincing.").

Post-grant review increases the opportunity for multiple challenges to the validity of a patent in addition to litigation.¹⁹⁴ This decreases the strength of U.S. Patents, which may have the effect of deterring the contribution of risk capital to start-up companies whose sole or primary asset is intellectual property.¹⁹⁵

IV. PROPOSAL FOR POSITIVE CHANGE

As mentioned earlier, support for individual issues included in the Patent Reform Acts largely reflect the concerns of specific industries, which are affected differently by different aspects of U.S. patent laws.¹⁹⁶ Additionally, many of the purported reasons for such reform are not supported by actual data and the “remedies” presented may ultimately benefit only a few contingents at the expense patent holders generally.¹⁹⁷ For example, claims that too many “low quality patents” issue in the United States rarely are accompanied by any objective parameters about what constitutes a low quality patent, or metrics demonstrating an increase in the issuance of low quality patents.¹⁹⁸ Patent reform’s solution to the perception of low quality patents is additional opportunity for post-grant review, which may ultimately decrease the initial value of all issued patents.¹⁹⁹ Thus, this “solution” to a problem that is not well defined seems ill targeted, overly broad and detrimental to the value that strong patents create for universities and their licensees.

Other issues cited in support of patent reform are the increasing costs of enforcement, escalating and unreasonable damage awards and lack of harmonization.²⁰⁰ Increasing costs of enforcement are a concern to universities but there is little in the proposed reform that appears to address this. In fact the reform would add numerous proceedings to challenge a patent and the various proceedings cumulatively could in fact significantly increase the cost of patent ownership and enforcement. As far as the argument that reform is needed in order to harmonize the patent law, there is little in the reform patent that leads to harmonization. Even the first inventor to file has a derivation proceeding that would be unique to U.S. law and hardly accomplishes harmonization.²⁰¹

In the last few years several decisions from Federal Courts have worked fundamental changes in the patent system that have, to a good extent, also

¹⁹⁴ SHAPIRO & MATHUR, *supra* note 10, at 7–8.

¹⁹⁵ See James C. Greenwood, *The U.S. Patent System Works: Bad Reform Would Stifle Innovation, Especially Regarding Biotechnology*, PITTSBURGH POST-GAZETTE, Aug. 16, 2007, at B-7 (noting the importance of strong patent protections to small businesses).

¹⁹⁶ See discussion *supra* INTRODUCTION.

¹⁹⁷ SHAPIRO & MATHUR, *supra* note 10, at 4–5; see also Chief Judge Michel Address, *supra* note 15, at 1–2 (pronouncing lack of evidence to support so called “low quality patents”).

¹⁹⁸ Chief Judge Michel Address, *supra* note 15, at 1–2.

¹⁹⁹ SHAPIRO & MATHUR, *supra* note 10, at 5, 14.

²⁰⁰ See Kevin R. Davidson, *Retooling Patents: Current Problems, Proposed Solutions, and Economic Implications for Patent Reform*, 8 Hous. Bus. & Tax L.J. 425, 442–43, 448–49 (2008) (citing low quality patents, litigation costs, and high damages as reasons for reform); Bagley, *supra* note 101, at 1037–47 (discussing patent reform and global patent harmonization); Raymond J. Keating, *Patent Reform and Entrepreneurs*, WASH. TIMES, Mar. 20, 2008, at A16 (citing low patent quality, litigation costs, and global inconsistency as reasons necessitating patent law reform).

²⁰¹ Bagley, *supra* note 101, at 1040.

addressed many of the issues of which advocates of patent reform were complaining. The following precedential court decisions will have effects on the examination process within the U.S. Patent and Trademark Office, which will become more evident in time.

In *eBay Inc. v. MercExchange L.L.C.*,²⁰² the Supreme Court of the United States confirmed that the traditional four-factor test for awarding permanent injunctive relief applies to patent disputes.²⁰³ The Court rejected the Federal Circuit's general rule "that a permanent injunction will issue once infringement and validity have been adjudged" and that an injunction "should be denied only in the 'unusual' case, under 'exceptional circumstances' and 'in rare instances . . . to protect the public interest.'"²⁰⁴ This ruling has made it more difficult to obtain injunctions against infringers, and to stop infringers from making or selling unlicensed products.²⁰⁵

In *In re Seagate Technology, LLC*,²⁰⁶ the Federal Circuit established a new standard for willful patent infringement.²⁰⁷ The court overruled its previous standard, which required merely a failure to exercise "due care" to avoid infringement, and instead implemented a requirement of clear and convincing evidence of "objective recklessness."²⁰⁸ Only upon this showing does an infringer's subjective beliefs become relevant.²⁰⁹ This ruling has decreased findings of willfulness in district courts.²¹⁰

In *KSR International Co. v. Teleflex Inc.*,²¹¹ the Supreme Court rejected the Federal Circuit's strict teaching-suggestion-motivation ("TSM") test for obviousness under 35 U.S.C. § 103.²¹² The Federal Circuit's test required a suggestion to combine references in the actual references themselves.²¹³ Instead, the Supreme Court instructed courts to apply a more flexible TSM test based on the inquiry set forth in *Graham v. John Deere, Co.*²¹⁴ The ruling inspired the USPTO to introduce strict new rules for obviousness, making it more difficult to obtain patents.²¹⁵ It has also increased findings of obviousness in district court proceedings.²¹⁶

²⁰² 547 U.S. 388 (2006).

²⁰³ *Id.* at 394.

²⁰⁴ *Id.* at 393–94.

²⁰⁵ *Id.* at 394 (requiring application of four-factor test in lieu of guaranteed injunction).

²⁰⁶ 497 F.3d 1360 (Fed. Cir. 2007), *cert. denied sub nom.* *Convolve, Inc. v. Seagate Tech., LLC*, 128 S. Ct. 1445.

²⁰⁷ *Id.* at 1371.

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ Carl G. Anderson et al., *Willful Patent Infringement: The First Year of the Post-Seagate Era*, INTELL. PROP. & TECH. L.J., September 2008, at 11, 13.

²¹¹ 550 U.S. 398 (2007).

²¹² *Id.* at 419.

²¹³ *Id.* at 407, 418.

²¹⁴ *Id.* at 419 (*citing* *Graham v. John Deere, Co.*, 383 U.S. 1 (1966)).

²¹⁵ See PATENT AND TRADEMARK OFFICE, DEP'T OF COMMERCE, EXAMINATION GUIDELINES FOR DETERMINING OBVIOUSNESS UNDER 35 U.S.C. 103 IN VIEW OF THE SUPREME COURT DECISION IN *KSR INTERNATIONAL CO. V. TELEFLEX INC.*, 72 Fed. Reg. 57526–35 (Oct. 10, 2007); MPEP, *supra* note 176, § 2141 (8th ed., 7th rev. 2008).

²¹⁶ Nicholas G. Papastavros & Maria H. Harris, *Do Predictions Come True? KSR, eBay, and The Real Impact on Patent License Negotiations*, INTELL. PROP. TODAY, July 2008, at 8.

In *MedImmune, Inc. v. Genentech, Inc.*²¹⁷ the Supreme Court ruled that a patent licensee is not required to terminate its license in order to seek a declaratory judgment that the patent is invalid, unenforceable, or not infringed.²¹⁸ The ruling also forced the Federal Circuit to abandon its “reasonable apprehension of suit” requirement for obtaining standing to bring a declaratory judgment action.²¹⁹ This ruling makes it much easier for parties, particularly licensees, to challenge the validity of patents.²²⁰

In *In re Bilski*,²²¹ the Federal Circuit stiffened the requirements for patenting business methods under 35 U.S.C. § 101, which defines patentable subject matter.²²² The court ruled that the only applicable standard for determining patentability under § 101 is the “machine-or-transformation” test, whereby a method or process is only patentable if it is tied to a particular machine or apparatus or transforms an article into a different state or thing.²²³ Applying this as the sole test under § 101 will make it much more difficult to obtain patents on business methods and processes.²²⁴

In summary, the above decisions have: (1) made it easier for the USPTO and the Federal Courts to invalidate or refuse to issue patents;²²⁵ (2) made it easier for aggrieved parties to challenge patents in court;²²⁶ (3) made the risks of a finding of an infringement significantly lower.²²⁷ In light of these fundamental changes, perhaps a more prudent course of action at this point is to see how the patent system will function on a going forward basis.

Indeed, if there is more work to be done on improving patents, perhaps the solution is to increase the resources of the USPTO so that it can effectively apply the rigorous standards for validity and patentability by *KSR* and *Bilski*. The USPTO has a backlog of 750,000 applications that is growing at a rate of 200,000 applications each year.²²⁸ As a consequence of the backlog, pendency for patent applications is alarmingly high; the average pendency for reexamination proceedings in the USPTO

²¹⁷ 549 U.S. 118 (2007).

²¹⁸ *Id.* at 137.

²¹⁹ *Id.* at 132–34.

²²⁰ *Id.* at 134–35.

²²¹ 545 F.3d 943 (Fed. Cir. 2008).

²²² *Id.* at 961, 966.

²²³ *Id.* at 961 (citing *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972)).

²²⁴ See Janine Robben, *Patently Obvious: Patent Lawyers Look at What is—And Isn’t—Patentable*, 69 OR. ST. B. BULL. 18, 23–24 (2009) (recognizing the limitation 35 U.S.C. § 101 now places on computer and software patents).

²²⁵ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007); *Bilski*, 545 F.3d at 943.

²²⁶ *Medimmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 137 (2007).

²²⁷ *eBay Inc. v. MercExchange L.L.C.*, 547 U.S. 388 (2006); *In re Seagate Technology, LLC*, 497 F.3d 1360 (Fed. Cir. 2007), *cert. denied sub nom. Convolv, Inc. v. Seagate Tech., LLC*, 128 S. Ct. 1445.

²²⁸ U.S. DEPT’ OF COMMERCE, PATENTS AND HOW TO GET ONE: A PRACTICAL HANDBOOK 14 (Cosimo 2006) (2000) (“Patent applications are received at the rate of over 200,000 per year.”); see Stephen Barr, *Backlog, Quotas Overwhelm Patent Examiners*, WASH. POST, Oct. 8, 2007, at D1 (indicating that the current backlog as of Oct. 8, 2007 was approximately 760,000, and that if the USPTO worked only on the current backlog of patent applications, it would take two years to clear it).

now stands at 24 months.²²⁹ There is little if anything in the present patent reform package to help the USPTO with what it really needs: the resources to effectively examine patents in a reasonable period of time.²³⁰ On the contrary, the proposed reforms will merely exacerbate the difficulties the Office already faces.²³¹

A number of groups have begun to speak out about the need to help the USPTO succeed.²³² The most urgent need is to provide adequate and permanent funding to the Office for hiring, retention and training.²³³ Beyond that there are a number of proposed rule changes that could be implemented to assist the Office in examining and issuing high quality patents.²³⁴ These proposals for improving the Office would require a legislative change of a kind much different than the recently proposed Patent Reform Acts, and should be examined.

The need to assist the Office also has to be embraced by the users of the Office. As with patent reform, every group with an opinion also has its own agenda.²³⁵ This has made producing a workable, cohesive legislative product almost impossible.²³⁶ However, all user groups should agree on the need to assist the Office in issuing high quality patents in a timely fashion. This, more than anything, will raise the confidence of the American public in the patent system and help to energize innovation.

Finally, if Congress is intent on passing patent reform, continued success of university innovation will require a change in the provisions for remedies and post grant review to continue the current incentives to license rather than infringe.²³⁷ Namely, there needs to be a continued presumption of validity for issued U.S. patents as well as significant remedies for the patent owner in the event his or her patent is infringed.²³⁸ This could be most easily accomplished by dropping the remedies provisions and eliminating the second window of post-grant review.²³⁹

²²⁹ U.S. CHAMBER OF COMMERCE, RECOMMENDATIONS FOR CONSIDERATION BY THE INCOMING ADMINISTRATION REGARDING THE U.S. PATENT AND TRADEMARK OFFICE 3 (2008) [hereinafter CHAMBER OF COMMERCE RECOMMENDATIONS], available at http://ipo.informz.net/ipo/data/images/14492_patentoffice_fm4_12.25.08.pdf.

²³⁰ See *id.* at 3–4 (acknowledging the patent reform legislation as assigning new responsibilities to the USPTO).

²³¹ *Id.* at 3.

²³² See FTC REPORT, *supra* note 12, at 54–55 (expressing higher funding and more examiners would result in higher quality patents).

²³³ *Id.*

²³⁴ See *id.* Executive Summary, at 7–17; CHAMBER OF COMMERCE RECOMMENDATIONS, *supra* note 229, at 4.

²³⁵ See discussion *supra* INTRODUCTION.

²³⁶ See, e.g., Patent Reform Act of 2008, S. 3600, 110th Cong. (2008) (terminating in the Senate); Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007) (as passed House of Representatives, Sept. 7, 2007); Patent Reform Act of 2007, S. 1145, 110th Cong. (2007) (terminating in the Senate).

²³⁷ See discussion *supra* Part III.B.2.

²³⁸ *Id.*

²³⁹ *Id.*

TABLE 1. COMPARISON OF SELECTED PROVISIONS OF THE PATENT REFORM ACT OF 2007 AND THE PATENT REFORM ACT OF 2008.

Issue	Patent Reform Act of 2007 (S. 1145)	Patent Reform Act of 2008 (S. 3600)
First-to-File	<p>Section 2: Changes the U.S. system from first to invent to first to file.</p> <ul style="list-style-type: none"> • Eliminates interference proceedings and introduces new “derivation” proceedings to determine whether the first to file is the true inventor. § 103(h), (i), and (j). • Applicant’s own publication or disclosure, and disclosure by others based on information obtained from the applicant, will not constitute prior art within one year of filing. § 102(a)(1). • Measures prior art from the filing date of the application and includes all art “available to the public.” § 102(a)(1). • Contains a prior art exception for subject matter invented pursuant to a joint research agreement. § 102(b). 	<p>Section 2: Similar to S. 1145.</p>

<p>Damages</p>	<p>Section 4: Codifies method for determining reasonable royalty.</p> <ul style="list-style-type: none"> • The judge determines whether the basis for calculation will be “entire market value,” “marketplace licensing” or, if neither applies, the economic value attributable to the claimed invention’s specific contribution over the prior art. § 284(c). • Allows the court to consider other relevant factors under applicable law in determining reasonable royalty. § 284(c). • Detailed criteria for establishing willful infringement. § 284(c). 	<p>Section 4: Codifies method for determining a reasonable royalty based on methodologies distinct from S. 1145.</p> <ul style="list-style-type: none"> • Defines “reasonable royalty” based on a “hypothetical negotiation” between the infringer and claimant. § 284(b). • Allows the court or jury to consider any relevant factors in determining reasonable royalty. § 284(c). • With limited exceptions, prohibits the use of “a standard or average ratio for the division of profits, an industry average rate for royalties, or other methods that are not based on the particular benefits or advantages of the use of the invention.” § 284(d). • Exception if the invention’s use is the primary reason for market demand of the product or process, there is already an established royalty, an industry average is used to confirm an estimate of reasonable royalty, or no other method is reasonably available. § 284(d)(1)-(4). • Strictly limits the use of royalties for comparable patents to determine reasonable royalty. § 284(e). • Bifurcation of liability and damages trials if requested. § 284(g). • Provides rules for the presentation of expert testimony regarding a reasonable royalty. § 284(h) & § 299A.
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<p>Post-Grant Review</p>	<p>Section 5: Repeals <i>inter partes</i> reexamination procedures and enables any third party to challenge a patent by filing petition for Post-Grant Review. § 303(a)-(c).</p> <ul style="list-style-type: none"> • Provides for a “first window” challenge filed within 12 months of patent issue. § 322(1). • Provides for a “second window” challenge filed at any time with consent of the patent owner or within 12 months of receiving notice of infringement if the challenger can show a likelihood of significant economic harm from the continued existence of the patent claim(s). § 322(2)-(3). • Eliminates the presumption of patent validity during the first window, but retains it during the second window. § 331. • Does not limit basis of challenge. § 322(2); § 323. • Requires challenger to prove invalidity by a preponderance of the evidence in the first window, and clear and convincing evidence in the second window. § 331. • Contains an estoppel provision. § 337-338. 	<p>Section 5: Similarities to S. 1145 include</p> <ul style="list-style-type: none"> • Repeal of <i>inter partes</i> reexamination procedures. § 303(b). • Two windows for challenging patents. § 321(b)-(c). • Preponderance of the evidence standard in the first window. § 331(b). • Clear and convincing evidence standard in the second window. § 331(b). <p>Differences from S. 1145 include:</p> <ul style="list-style-type: none"> • The first window requires the challenger to have a “substantial economic interest adverse to the patent,” and expires within 9 months of patent issue. § 321(a)-(b). • The second window challenge may be filed at any time within 9 months of the grant of patent or the date of termination of a first window proceeding, requires a “substantial economic interest adverse to the patent,” and only allows for a challenge based on novelty and obviousness in light of printed publications, patents, and patent applications. § 321(a) and (c). • The presumption of patent validity applies to the first and second windows. § 331. • Limits <i>ex parte</i> reexaminations to actions by a patentee. § 303(a). • More stringent estoppel provision. § 322(d).
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