No. 15-1330

IN THE

Supreme Court of the United States

MCM PORTFOLIO LLC,

Petitioner,

v.

HEWLETT-PACKARD COMPANY,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF UNIVERSITY OF NEW MEXICO AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

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STATEMENT OF INTEREST[1]

Amicus curiae, the University of New Mexico ("UNM"), is a major United States research university and the flagship school of its state university system. Universities perform 53% of basic research in the United States.[2] In fiscal year 2014, United States universities performed $63,000,000,000 worth of funded research and filed nearly 15,000 new patent applications.[3] In fiscal year 2011, the top 250 universities in research and development expenditures combined for more than $62 billion.[4]

From 1969-2012, the USPTO[5] granted 75,353 patents to universities in the United States.[6] But in the global

1. This brief is filed with the written consent of all parties through a letter of consent by petitioner on file with the Clerk and by the accompanying written consents of respondents attached hereto. No counsel for any party authored this brief in whole or in part, and no person or entity other than amicus curiae, its members, or its counsel made a monetary contribution intended to fund its preparation or submission.

2. The Science Coalition, *Sparking Economic Growth: How federally funded university research creates innovation, new companies and jobs* (October 2013), at 8.

3. Association of University Technology Managers, *Highlights of AUTM's U.S. Licensing Activity Survey, FY2014*, at 3.

4. U.S. Patent and Trademark Office ("PTO") Patent Technology And Marketing Team - Total R&D Expenditures At U.S. Colleges And Universities: Top 250 Institutions In R&D Expenditures In Fiscal Year 2011 (retrieved May 5, 2016 at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/univ/r_and_d/r_d_nsf_2012.htm).

5. United States Patent and Trademark Office.

6. *Ibid.* ((retrieved May 5, 2016 at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/univ/total_counts/univ_ct_list_2012.htm).

economy, U.S. universities are not the only institutions of higher learning that need a strong and predictable U.S. patent regime. Instead, the U.S. patent system is important to research institutes and universities throughout the world. Eleven of the 50 universities that received the most United States utility patents in 2014 are not U.S.-based; instead, that group included universities in Israel, South Korea, Taiwan, China, and Saudi Arabia.[7]

In 1980, Congress passed the Bayh-Dole Act, 35 U.S.C. §§ 200-212. Its purposes included "us[ing] the patent system to promote the utilization of inventions arising from federally supported research or development," concurrently "promot[ing] collaboration between commercial concerns and nonprofit organizations, including universities," and "promot[ing] the commercialization and public availability of inventions made in the United States by United States industry and labor." 35 U.S.C. § 200.

The Bayh-Dole Act enacted incentives for universities to support inventorship, obtain patents, and license those patents for marketing and commercialization by private companies. *The Economist* described Bayh-Dole as "[p]ossibly the most inspired piece of legislation to be enacted in America over the past half-century"[8] because it released enormous technological innovation into the U.S. market and created a virtuous cycle of revenue for further university research and massive economic

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7. *Top 100 Worldwide Universities Granted U.S. Utility Patents in 2014*, National Academy of Inventors, http://www.academyofinventors.org/pdf/NAI-IPO-Top-100-Universities-2014.pdf.

8. *Innovation's Golden Goose*, The Economist, Dec. 12, 2002.

benefits. In fiscal year 2014 alone, more than 900 startups were formed from university technology transfer.[9] Since 1980, more than 6,000 new U.S. companies have been formed through the use of university inventions, 4,350 new university licensed products are in the market, and 5,000 active university-industry licenses are in effect.[10] U.S. universities are also world-leading research institutions—of the 20 universities that filed the most patent applications under the Patent Cooperation Treaty in 2014, 13 are U.S. universities, including the top nine.[11]

Ultimately, universities are unique among participants in the patent system. They do not manufacture or assemble products, so their detractors may characterize them as "non-practicing" entities. But universities do indeed practice their inventions by creating, innovating, inventing, investigating and thereby expanding scientific knowledge. Unlike non-practicing entities that neither develop products nor engage in creating the patented inventions, university innovation means that the universities' researchers performed the work that resulted in the patent.

The value of university innovation gives UNM a strong interest in ensuring that patent law promotes respect for

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9. *See supra* n. 3, *Highlights of AUTM's U.S. Licensing Activity Survey, FY2014*, at 9.

10. Baker, P, *et al.*, *The Positive Impact of Academic Innovations on Quality of Life,* The Better World Report, 2010.

11. *Telecom Firms Lead WIPO International Patent Filings*, World Intell. Prop. Org. (March 19, 2015) at Annex 3 http://www.wipo.int/export/sites/www/pressroom/en/documents/pr_2015_774_annexes.pdf#page=3.

intellectual property rights. UNM has no interest in any party to this litigation and no direct stake in the outcome of this particular case. UNM seeks only to ensure that patentees retain their constitutional rights to a jury trial and the deference due to patents that Congress guarantees in the Patent Act. 35 U.S.C. § 282 ("A patent shall be presumed valid.").

SUMMARY OF ARGUMENT

The Petition that MCM Portfolio filed presents substantial questions of constitutional and administrative law. Those issues affect major research universities because the IPR procedure has caused various problems for university patentees.

Research universities in the United States have a long history of contributing to the total sum of practical knowledge in the Nation. The scientific discoveries and advancements made in university research have developed technology, improved health, saved lives and increased the standard of living. Thus, eight of the top 10 institutions most frequently awarded the Nobel Prize in this century are in the United States.[12] The Bayh-Dole Act has helped universities expand the reach of their research to aid the country as a whole. And the ability to license patented research provides an important revenue stream for universities, helps develop nascent industries, and concurrently wards against the problem of free riders. The

12. Ellie Bothwell, *Top 10 Universities for Producing Nobel Prizewinners*, Times Higher Education (August 6, 2015), https://www.timeshighereducation.com/carousels/top-10-universities-producing-nobel-prizewinners.

IPR procedure that has become a substitute for district court litigation, without the protections of district court litigation, harms research universities.

First, the threat of IPR devalues university patents. Universities are usually not litigious and instead seek to license their technology with industry partners. Enforcing patent exclusivity through patent infringement actions is a last resort. But the patent "death-squad" reputation of PTAB means infringers are emboldened to continue their infringement because they know their chance in an IPR to extinguish all claims of a challenged patent exceeds 70%—a risk to their patent assets that universities are loath to take.

Second, the inherent inconsistencies between district courts' patent validity standards and PTAB practice harms university patents. A district court provides protections to university patents such as the presumption of validity, requirement to prove invalidity by clear and convincing evidence, and well-developed claim construction case law. The PTAB has no such presumption of validity, requires only a preponderance of the evidence for the defendant to show that challenged claim that the PTO previously stated was patentable is not, and is not bound by this Court's or the Federal Circuit's precedents in determining claim construction.

Given the unique place of the American university in developing scientific knowledge throughout the history of this Nation, the Court should consider the issues raised by MCM Portfolio, and grant the petition for certiorari.

ARGUMENT

A. The Role of Research Universities.

Research universities are incubators of invention and innovation. Jacob H. Rooksby, *Innovation and Litigation: Tensions Between Universities and Patents and How to Fix Them*, 15 YALE J. OF LAW AND TECH., 312, 355 (2013). Transformative advancements, including the laser,[13] magnetic-resonance imaging,[14] GPS systems,[15] the blue-light, LED,[16] Google's search algorithm,[17] anti-aging technology,[18] and more,[19] all originated on college

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13. Robert Sanders, "Nobel Laureate and laser inventor Charles Townes dies at 99," *UC-Berkeley News Center,* January 27, 2015.

14. *MRI's Inside Story*, The Economist, December 4, 2003; *see also* Cole at 262-265.

15. Mark Shwartz, *GPS Pioneer Bradford Parkinson Awarded Draper Prize In Engineering*, Stanford Report, February 19, 2003; *GPS Inventor Inducted Into Hall Of Fame*, Stanford Report, February 18, 2004.

16. Tim Stoddard, *Blue Light Technology Remains BU's Intellectual Property*, B.U. Bridge (Dec. 13, 2002), https://www.bu.edu/bridge/archive/2002/12-13/bluelight.htm.

17. Shwartz, *supra* n. 14.

18. David Kroll, *The Influential Patent That's Driving Anti-Aging Research*, Reuters (Sept. 15, 2015), http://www.reuters.com/article/idUSL1N11L02J20150915.

19. *See 40 Innovations Worth Celebrating*, Association of Univ. Tech. Managers, http://www.autm.net/autm-info/about-tech-transfer/about-technology-transfer/public-benefits/autm-40th-anniversary/.

campuses. *See generally,* Jonathan R. Cole, *The Great American University: Its Rise to Preeminence, Its Indispensable National Role; Why it Must be Protected,"* (New York: Public Affairs, 2009) at 257-259 (hereafter "Cole at [page]"). In fact, "our nation's primary source of both new knowledge and graduates with advanced skills continues to be its research universities." Committee on Research Universities, *Research Universities and the Future of America,* (Washington, D.C.: The National Academies Press, 2012), at 1. Universities produce discovery after discovery to expand knowledge for a society whose growth is linked to the knowledge economy. Cole at 4; Committee on Research Universities, at 3, n. 13.

American universities "have long had a more practical orientation than universities in the United Kingdom or Germany," which emphasize theory and philosophy. Walter W. Powell & Jason Owen-Smith, *Universities and the Market for Intellectual Property in the Life Sciences*, 17 J. Pol'y Analysis & Mgmt. 253, 254 (1998). For more than 150 years, since at least the Morrill Act,[20] American research universities have sought to solve problems and create industrial solutions. Joshua E. Powers, *Commercializing Academic Research: Resource Effects on Performance of University Technology Transfer*, 74 J. Higher Educ. 26, 45 (2003) ("[T]he economic development role for America's research universities had historically centered on the land-grant institutions."); *see generally* Peter Lee, *Patents and the University*, 63 Duke L. J. 1, 9-10 (2013).

20. 7 U.S.C. § 301, *et seq.*

B. Universities are the "Keepers of the National Scientific Flame."

After World War II, universities became the foundation of a new "national system of innovation." Cole at 92, 98. In July 1945, responding to a November 17, 1944 letter from President Roosevelt, Vannevar Bush[21] outlined this new system in his report, *Science: The Endless Frontier,* the "policy blueprint" that "shaped U.S. science policy after the Allied victory." *Ibid.* at 91-92; *see also ibid.* at 100 ("*Science—The Endless Frontier* produced a broad, ambitious vision for American science after the war."). Dr. Bush noted that "[b]asic scientific research is scientific capital" and identified the need to "strengthen the centers of basic research which are principally the colleges, universities, and research institutes." Vannevar Bush, *Science The Endless Frontier, A Report to the President*, July 1945.[22] The new system placed special emphasis on universities and independent research institutes because "[i]t is only the colleges, universities, and a few research institutes that devote most of their research efforts to expanding the frontiers of knowledge." *Ibid.* The system also proposed a partnership whereby the federal government would provide support for basic science to

21. Vannevar Bush was "a major public figure [instrumental in mobilizing talented individuals for the war effort], vice-president and dean of engineering at the Massachusetts Institute of Technology from 1932-1938, and later president of the Carnegie Institution, he convinced President Roosevelt to form the National Defense Research Committee to coordinate scientific research for national defense." Cole at 86.

22. http://www.nsf.gov/about/history/vbush1945.htm#summary.

research universities and linked that partnership to the goal of stimulating the economy. "The Bayh-Dole Act at 25," *BayhDole25, Inc.,* April 17, 2006, 8.

Based on this "blueprint," the U.S. established a system designed to "transform both the transmission and the production of knowledge in America" in which "scientific research [w]ould be carried out principally at the nation's universities," and "universities would also become incubators for developing talent in the young people who would make up the skilled workforce and scientific leadership of the next generation." Cole at 96. America's universities took on a new role as "keepers of the national scientific flame" and became "the driving force for a whole suite of economic and social objectives." *Science the Endless Frontier: Learning from the Past, Designing for the Future*, Consortium for Science, Policy & Outcomes, Dec. 9, 1994, at 6, 16.

Adopting this new system was a "momentous decision that decanted the mechanism and the resources for supporting science into the institutions responsible for training the next generation of scientists." *Ibid.* Recent studies highlight the significance of the U.S.'s decision: "Studies of federal funding for basic research in the past, particularly studies of research conducted at academic institutions, have estimated that the average returns from that spending exceed the returns that might have been gained had those resources been put to other uses." Congress of the United States – Congressional Budget Office, *Federal Support for Research and Development*, June 2007, vii.[23]

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23. *See also* Jonathan Rothwell, *et al.*, *Patenting Prosperity: Invention and Economic Performance in the United States and its*

The system succeeded. Basic research performed in engineering, electronics, early computers, and material sciences in the 1950s and 1960s, "over time produced an explosion of new technologies that have transformed our world, including such items as personal computers, mobile phones, and GPS systems." Rebecca M. Blank, *What Drives American Competitiveness?* 663 ANNALS AM. ACAD. POL. & SOC. SCI. 8, 21 (2016). The majority of that basic research occurs at universities.

C. The Bayh-Dole Act: The U.S. Government Backs Universities.

To incentivize innovation, Dr. Bush said that "grantees must be allowed to hold intellectual property rights on discoveries they made with federal funds, and that the federal government [must] be given only royalty-free licenses for their use." Cole, *supra*, at 97, 162. But the Federal Government did not implement Dr. Bush's vision until 35 years later, when it passed the Bayh-Dole Act in 1980. *Ibid.*

Between the conclusion of World War II and Congress' passage of Bayh-Dole, the government took the position that any inventions resulting from federally funded

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Metropolitan Areas, Brookings Institution, 2013, 29, http://www.brookings.edu/~/media/research/files/reports/2013/02/patenting-prosperity-rothwell/patenting-prosperity-rothwell.pdf (last visited December 9, 2015) ("[T]he material well-being of all places now hinges on the continuous creation of new ideas, new technologies, and new products—and must be maximized. … The evidence that federal R&D is worthy of public support is abundant."). Hereafter referred to as "Rothwell at [page]."

research belonged to the government; which would only license on a non-exclusive basis. Ashley J. Stevens, *The Enactment of Bayh-Dole*, J. OF TECH. TRANSFER, 29 at 94 (2004). U.S. productivity and innovation became stifled and the United States lost its leadership position in both mature industries—automobile manufacturing, television production—and emerging industries such as memory chips and production of consumer electronics. *Id.* at 93. Billions of dollars of federal investment in cutting-edge research and invention remained on the shelf because the authority and incentives needed to justify the risk and expense of turning university research into new products was not available.

Bayh-Dole provided inventors and universities the authority and incentives they needed to commercialize the fruits of their research. Cole at 161. Through Bayh-Dole, Congress gave universities the power to license inventions resulting from federally sponsored research, which opened a potential new revenue stream for the universities that could be reinvested in further research. *Id.* at 165. The Bayh-Dole Act incentivized universities and industry "to transform university research into real products benefiting society at large," which accelerated knowledge transfer. *Id.* at 162-64, 170. On the 25th anniversary of the Bayh-Dole Act, Congress recognized:

> that federally-funded research at universities and Government laboratories and the partnerships between such nonprofit institutions and the private sector play a critical role in developing

> the technologies that allow the United States to lead the world in innovation.[24]

Basic research is foundational. Whole industries have been created from the "cutting-edge discoveries" that "are most likely to occur" from basic research. *The Bayh-Dole Act: Important to our Past, Vital to our Future*, Association of Technology Managers, March 14, 2007. By contrast, U.S. industry has discontinued long-range research and instead has focused on applied research, which builds upon the scientific discoveries made in basic research. *Ibid.*; *see* Rebecca M. Blank, *What Drives American Competitiveness?* 663 ANNALS AM. ACAD. POL. & SOC. SCI. 8, 21 (2016) (noting "[f]ew private sector entities want to invest in basic research since it may have little short-run return to their bottom line."). In addition, universities do not just perform research on government-funded projects; instead, universities invest their own funds in research and are the second largest source of funding for university-performed research and development.[25] As of 2013, universities performed more than half of all U.S. basic research. *2014 Global R&D Funding Forecast*, Battelle, December 2013, at 11.

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24. 152 Cong. Rec. H8814, § 201(a)(23) (2006) (Sense of Congress Relating to Bayh-Dole Act, finding 23); *see also Innovation's Golden Goose*, The Economist, December 12, 2002; Gene Quinn, *Exclusive Interview: Senator Birch Bayh on Bayh-Dole at 30*, IPWatchdog (November 7, 2010), http://www.ipwatchdog.com/2010/11/07/exclusive-interview-senator-birch-bayh-on-bayh-dole/id=13198/.

25. Congress of the United States, *Congressional Budget Office*, "Federal Support for Research and Development," June 2007 at 8, Fig. 4.

Ultimately, Bayh-Dole is Congress's acknowledgement of the special role that university research has in developing new technology and advancing scientific discovery, and how such university research will most efficiently be deployed in service of the common good. The law allows universities the right to seek patents on federally funded research "'[t]o encourage the commercialization of new products.'" Joe Nocera, *The Patent Troll Smokescreen*, N.Y. Times, Oct. 23, 2015 (quoting Prof. Robin Feldman, director of the Institute for Innovation Law at the University of California Hastings College of the Law). That intent has been harmed by PTAB.

D. Universities Protect Their Research Through Patenting and Licensing

To protect the intellectual property that results from university research, and to encourage and enable further research, universities rely on patents and licensing. By patenting and licensing inventions, universities generate revenue that is critical to financing additional research and development, which drives further innovation.[26] In fiscal year 2014, United States universities performed nearly $63 billion in funded research, filed nearly 15,000 new patent applications, executed more than 5,000 licenses, formed 965 new startups and had 4,688 startups formed from university research licensing that are still active. *See Highlights of AUTM's U.S. Licensing Activity Survey, FY2014*, *supra,* at 11. University licensing is not new: the Wisconsin Alumni Research Foundation has invested in research and partnered with industry for more than

26. *E.g.,* UCSD Patent Program, UCSD Policy and Procedure Manual, Contracts and Grants (Research) at 4.

90 years. WARF.org, *Investing in Research, Making a Difference . . .*, http://www.warf.org/about-us/90th-anniversary/warf-s-first-90-years.cmsx (last visited May 6, 2016).

University research produces valuable patents. According to the Brookings Institution, "federally financed patents are of higher quality than those funded by industry." Rothwell at 25. But universities rarely manufacture products. Instead, they partner with industry to license and commercialize their patented technology, or license their patents to start-up companies who implement a business plan to bring the patented inventions to market. *E.g.*, University of Iowa Operations Manual, § 30.2; University of Virginia Licensing & Ventures Group, *New Ventures*, http://lvg.virginia.edu/impact/ventures.

Licensing agreements allow universities to "act[] as magnets for the laboratories of private enterprises" and venture capitalists. Gary P. Pisano & Willy C. Shih, *Restoring American Competitiveness*, HARV. BUS. REV. (July 2009), last visited on May 27, 2016 at https://hbr.org/2009/07/restoring-american-competitiveness/ar/1. These licenses have value to the companies that profit from university innovation, and to the economy as a whole, which benefits from new jobs and economic activity. A recent PTO working paper noted that "patent grants have real effects for startups in the form of faster growth, more and higher-quality subsequent innovations, and an increased chance of eventually going public or being acquired." Joan Farre-Mensa, Deepak Hegde, Alexander Ljungqvist, *The Bright Side of Patents,* Office of the Chief Economist, USPTO Working Paper Series, Working Paper

2015-5 (Jan. 2016) at 18. And licensing from a university to a startup ***after*** the university obtains a patent allows the startup to avoid the review lag between patent application and patent grant. *Ibid.* at 21-22 (noting effects of patent review lag on sales growth and subsequent innovation).

E. University Patents and the Free Rider Problem.

University research has achieved its most far-reaching benefits when industry has held up its end of the bargain—partnering with universities and licensing viable patents then developing commercial products that practice the patented innovations. But industry actors who have chosen to be "willing free riders on the backs of university research efforts" and use inventions made by universities without authorization—and without paying royalties—have harmed innovation. *See* Cole at 171. This is because "universities and their patent licensing organizations depend on the ability to license to established or start-up companies to commercialize their inventions." May 19, 2009 Letter from Carl E. Gulbrandsen, Wisconsin Alumni Research Foundation to The Hon. Jon Leibowitz, Chairman, Fed. Trade Comm'n, RE: Evolving IP Marketplace – Comment, Project No. P093900, 3.[27] Growing fiscal pressures on state budgets and other university resources have resulted in reduced state funding to public universities, making the impact of free riders on universities particularly pernicious.

Commercialization of university patents is highly uncertain. Only about 20% of university inventions are

27. Last visited May 4, 2016 at http://www.scribd.com/doc/113951875/1Warf.

successfully commercialized. Scott Andrew Shane, *Academic Entrepreneurship: University Spinoffs and Wealth Creation,"* (Northampton, MA: Edward Elgar Publishing Ltd., 2009), 32, 35. Universities therefore depend on their blockbuster technologies to generate substantial revenue that can then be reinvested into further research. Cole at 167.

When industry actors deliberately infringe instead of paying a reasonable royalty under a license, they not only deprive universities of an important source of revenue, but they also deprive the U.S. of resources that could be used to fund the next generation of research and innovation. This phenomenon is especially problematic when the infringer is a foreign company committing acts of infringement within the United States, thereby profiting from university research for years while concurrently depriving the university of funds that could lead to additional innovation. *Compare Carnegie-Mellon Univ. v. Marvell Tech. Group,* 807 F.3d 1283, 1291 (Fed. Cir. 2015) (noting Marvell began infringement in 2001) *with* Don Clark, "Marvell to Pay $750 Million in Settlement with Carnegie Mellon," *Wall St. Journal*, Feb. 17, 2016 (noting settlement in 2016 after lawsuit had been commenced in 2009).

The universities' focus on basic research means the time lag between licensing and commercialization typically is relatively long. University inventions are licensed, on average, when university patents are four years old and commercialized when they are seven years old. Irene Abrams, Grace Leung, Ashley J. Stevens, *How are U.S. Technology Transfer Offices Tasked and Motivated—Is It All About the Money?* 17 Res, Mgmt. Rev. 35 (2009). Thus,

even when a license agreement is signed, the university actually sees its first dollar after waiting for years.

Finally, universities are not in the business of litigation and generally see patent litigation as a last resort. In fact, universities consider enforcement action as appropriate only when there is "[b]latant disregard on the part of the infringer for the university's legitimate rights in availing itself of patent protection…" *Ibid.* Suing a potential industry partner creates a web of reputational and fiscal risks for the university. Jacob H. Rooksby, *Innovation and Litigation: Tensions Between Universities and Patents and How to Fix Them,* 15 YALE J. OF LAW AND TECH., 312, 359, 365 (2013).

This natural reluctance of leading research universities to maintain lawsuits against patent infringers has its costs. It is not lost on copyists who are, under the existing enhanced damages standard,[28] now largely free to loot the best research in the world without any adverse economic consequence. Instead, such copiers simply engage in "efficient infringing" that has minimal cost to the infringer, but harms the patentee. Joe Nocera, *The Patent Troll Smokescreen*, N.Y. Times, Oct. 23, 2015 (defining "efficient infringing" as "using a technology that infringes on someone's patent, while ignoring the patent holder entirely."). That cost acutely affects research universities who actively disseminate information to the public about their discoveries as part of their educational and research missions because "researchers at corporations almost never publish in scientific journals, mostly because

28. *See Halo Electr. Inc. v. Pulse Electr. Inc.*, 769 F.3d 1371, 1382 (Fed. Cir. 2014), *cert. granted,* 136 S.Ct. 356 (2015).

valuable knowledge could immediately be adopted by competitors." Rothwell, *supra*, at 27. This imbalance makes it much easier for infringers to gain access to information they can use to infringe while simultaneously making it more difficult for universities to detect such infringement. Accordingly, research universities need the patent laws to deter deliberate infringement not excuse it.

F. *Inter Partes* Review and the Law of Unintended Consequences.

The Leahy-Smith America Invents Act of 2011 ("AIA") has reduced patent lawsuits in the United States courts because it created the IPR procedure. 35 U.S.C. § 311, *et seq.* IPRs concern patents that have been issued by the Patent and Trademark Office. But IPR proceedings lack the protections that Congress, this Court, the Federal Circuit, and the various district courts provide to Constitutional patent rights. A petition to institute an IPR trial, and the outcome of the IPR trial, are determined by three non-Article III administrative law judges of the Patent Trials and Appeals Board ("PTAB" or "the Board") whose continued employment is subject to the PTO's approval. The differences between IPR and district court trials are crucial.

First, despite the Congressional mandate that, once granted, "[a] patent shall be presumed valid," 35 U.S.C. § 282(a), PTAB grants no presumption of validity to the challenged patent. Instead, in determining whether to institute an IPR trial, the Board looks only at whether "the petition supporting the ground [for IPR] would demonstrate that there is a reasonable likelihood that at least one of the claims challenged in the petition is

unpatentable" even though such claim has already been found patentable. 37 C.F.R. § 42.108(c).

Second, the district courts must apply the *Phillips* test and interpret patent claims according to their customary and ordinary meaning. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-1313 (Fed. Cir. 2005) (*en banc*). Even though IPR occurs after the challenged patent has been granted, PTAB applies the "broadest reasonable construction in light of the specification"—a standard that applies to patent applications—to the challenged claims. 37 C.F.R. § 42.100(b); *see In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984) (giving claims their broadest reasonable interpretation "serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified").

Third, in district court the accused infringer must prove all its invalidity defenses by clear and convincing evidence; in IPR, the petitioner merely has to prove by a preponderance of the evidence that a claim that the PTO once found patentable no longer is. *Compare Microsoft Corp. v. i4i Ltd. P'ship,* 131 S.Ct. 2238, 2242 (2011) *with* 35 U.S.C. § 316(e).

Fourth, upon a proper jury demand under Federal Rule of Civil Procedure 38, the district court will empanel a jury to render a verdict on factual issues of patent infringement, *see Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 376 (1996); in IPR, trial can be heard by the same administrative patent judges who decided to grant the petition for IPR and all such judges are appointees of the Secretary of Commerce. 35 U.S.C. § 6.

Although ostensibly designed to correct improper grants of bad patents, the IPR process has acted as a tool to undermine the entire patent system. Now, nine months after the PTO has granted a patent, any person or entity, for any reason, can seek to eradicate any patent it does not own as long as the petitioner has sufficient funding to pursue the IPR. *See* Michelle Carniaux and Michael Sander, *PTAB Crashers: a Who's Who of Non-Practicing IPR Petitioners*[29]; *see* 37 C.F.R. 42.101(a)-(c) (exceptions to IPR petitioner eligibility).

To date, no university has filed for an IPR to challenge the validity of any extant patent. But more than 80 petitions for IPR have been filed against universities. Through March 31, 2016, the PTAB has continued to live up to its "patent death squad"[30] reputation: in 72% of trials that culminated in a final written decision, all challenged patent claims have been canceled. United States Patent and Trademark Office, *Patent Trial and Appeal Board Statistics 3/31/2016* at 10 ("PTAB Statistics"). Considering the 62% chance that IPR will be instituted if sought,[31] the 72% rate for canceling all claims at trial, and the additional

29. Inter Partes Review Blog, last accessed May 5, 2016, http://interpartesreviewblog.com/ptab-crashers-a-whos-who-of-non-practicing-ipr-petitioners/.

30. Rob Stern & Gene Quinn, *PTAB Death Squads: Are All Commercially Viable Patents Invalid?* IPWatchdog.com (March 24, 2014), http://www.ipwatchdog.com/2014/03/24/ptab-death-squads-are-all-commercially-viable-patents-invalid/id=48642/ (quoting former Federal Circuit Chief Judge Randall Rader's description of PTAB).

31. *See* PTAB Statistics at 10 (1443 trials instituted and 869 petitions denied means in 1443 of 2312 cases that reached a decision on whether to institute IPR, PTAB decided to institute IPR).

14% of trials in which the patentee loses at least some claims, the price of infringement to the infringer is cheap.

Thus, universities have lost much of the value of their patents, and have been less able to obtain partnership with industry to bring the product of university research to the public in a manner that benefits the university and the industrial partner, not just the free rider. *See* Gene Quinn, *Post Grant Patent Challenges Concern Universities, Pharma*, IP Watchdog.com, April 1, 2015 (summarizing analysis of AIA by Carl Gulbrandsen, former Managing Director at the Wisconsin Alumni Research Foundation). Because the MCM Portfolio petition for certiorari raises significant questions regarding the constitutionality of the IPR proceeding, the Court should grant MCM Portfolio's petition.

CONCLUSION

The Court should grant the petition for certiorari. The petition raises significant constitutional and administrative law issues that impact the patent system as a whole. The AIA has had an adverse effect upon university technology transfer operations primarily due to the lack of protections that PTAB provides to patents that the PTO has previously granted. These issues impact university research, innovation, and technology. Any ruling from this Court on the issues petitioner presents will have significant impact but denying the petition will not settle any issues. The Court should grant the petition for review.

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