10-2021

In Minerva v. Hologic, the U.S. Supreme Court Reins in the Equitable Doctrine of Assignor Estoppel

Christopher M. Holman
University of Missouri - Kansas City, School of Law

PRE-PRINT VERSION (For print version see Christopher M. Holman, *In* Minerva v. Hologic*, the U.S. Supreme Court Reins in the Equitable Doctrine of Assignor Estoppel*, 40 BIOTECHNOLOGY LAW REPORT 294 (2021)).

In *Minerva v. Hologic*, the U.S. Supreme Court Reins in the Equitable Doctrine of Assignor Estoppel

Christopher M. Holman*

ABSTRACT

Assignor estoppel is an equitable remedy that prohibits an assignor of a patent, or one in privity with an assignor, from attacking the validity of that patent when he is sued for infringement by the assignee. On June 29, 2021, the U.S. Supreme Court issued its decision in Minerva v. Hologic*, holding that while AE remains a viable doctrine, the Federal Circuit has on many occasions, including the instant case, applied the doctrine in an overly expansive manner, particularly in cases where the patent claims at issue differ substantially from any patent claims that were in existence at the time of the assignment. This article begins with a brief history of AE, followed by an explanation of the doctrine as it currently exists, along with some relatively recent cases in which the doctrine was asserted in the context of biotechnology. The article then turns to* Minerva*, providing a summary of the factual and legal background leading up to the Supreme Courts grant of certiorari. A number of organizations, companies, and law school clinics filed amicus curiae briefs with the Supreme Court, and this article summarizes some of the arguments made by these amici, particularly with respect to the policy implications of AE and its scope of applicability The article then provides a summary of the Supreme Court's sharply divided decision, followed by some concluding thoughts on the implications of* Minerva *for assignors and assignees.*

Assignor estoppel is an equitable remedy that prohibits an assignor of a patent, or one in privity with an assignor, from attacking the validity of that patent when he is sued for infringement by the assignee. On June 29, 2021, the U.S. Supreme Court issued its decision in the case of *Minerva v. Hologic*,[1] addressing the question of whether, and if so, to what extent the doctrine of assignor estoppel (AE) remains good law, particularly in view of significant revisions of the

* Christopher M. Holman, Professor of Law, University of Missouri-Kansas City School of Law; Senior Fellow, Center for the Protection of Intellectual Property, George Mason University, Antonin Scalia Law School; and Executive Editor, Biotechnology Law Report.

[1] Minerva Surgical, Inc. v. Hologic, Inc., 141 S. Ct. 2298 (2021).

Patent Act that have occurred since the Court last specifically addressed AE, as well as the Court's 1969 decision in *Lear v. Adkins*[2] that abolished licensee estoppel, a related doctrine arising out of considerations of equity. In *Minerva* the Court held, by a narrow 5-4 margin, that AE remains viable, but that the Federal Circuit has on many occasions, including the instant case, applied the doctrine in an overly expansive manner, particularly in cases where the patent claims at issue differ substantially from any patent claims that were in existence at the time of the assignment, .e.g., when there have been significant amendments to the claims post-assignment, or when the claims first appeared in a continuation application drafted post-assignment.

This Holman Report begins with a brief history of AE, followed by an explanation of the doctrine as it currently exists, along with some relatively recent cases in which the doctrine was asserted in the context of biotechnology. The article then turns to *Minerva*, providing a summary of the factual and legal background leading up to the Supreme Courts grant of certiorari. A number of organizations, companies, and law school clinics filed amicus curiae briefs with the Supreme Court, and this article summarizes some of the arguments made by these amici, particularly with respect to the policy implications of AE and its scope of applicability The article then provides a summary of the Supreme Court's sharply divided decision, followed by some concluding thoughts on the implications of *Minerva* for assignors and assignees. An edited version of *Minerva v. Hologic* appears elsewhere in this addition of Biotechnology Law Report.

AE and its historical development

In *Minerva*, the Supreme Court provided the following historical background:

> Assignor estoppel got its start in late 18th-century England and crossed the Atlantic about a hundred years later. In the first recorded case, [the court] found that a patent assignor "was by his own oath and deed estopped" in an infringement suit from "attempt[ing] to deny his having had any title to convey." The rule took inspiration from an earlier doctrine—estoppel by deed—applied in real property law to prevent a conveyor of land from later asserting that he had lacked good title at the time of sale.[3]

The U.S. Supreme Court has addressed AE on three occasions, although it has never actually applied it. In *Westinghouse Electric & Manufacturing Co. v. Formica Insulation Co.* (1924), the Court found "well settled" the rule "that an assignor of a patent right is estopped to attack the utility, novelty or validity of a patented invention which he has assigned or granted as against any one claiming the right under his assignment or grant."[4] The Court went on to observe, however, that this rule, which courts now refer to as AE, had never been applied by the Court. Significantly, the Court noted that the rule did not go so far as to preclude an assignor from invoking the prior art to "construe and narrow the claims of the patent," a safety valve that subsequent decisions of the Federal Circuit have often emphasized. The *Westinghouse* Court

[2] Lear, Inc. v. Adkins, 395 U.S. 653 (1969).
[3] 141 S. Ct. at 2305 (2021).
[4] Westinghouse Electric & Manufacturing Co. v. Formica Insulation Co., 266 U.S. 342, 349 (1924).

also pointed out that, in previous cases wherein lower courts had applied AE, it had always been with respect to an issued patent, whereas:

> The case before us … concerns assignment of an invention and an inchoate right to a patent therefor before the granting of it which, after the assignment at the instance of the assignee, ripened into a patent. … It is apparent that the scope of the right conveyed in such an assignment is much less certainly defined than that of a granted patent, and the question of the extent of the estoppel against the assignor of such an inchoate right is more difficult to determine than in the case of a patent assigned after its granting. When the assignment is made before patent, the claims are subject to change by curtailment or enlargement by the Patent Office with the acquiescence or at the instance of the assignee and the extent of the claims to be allowed may ultimately include more than the assignor intended to claim. This difference might justify the view that the range of relevant and competent evidence in fixing the limits of the subsequent estoppel should be more liberal than in the case of an assignment of a granted patent.[5]

This dicta, distinguishing between the estoppel effect of an assignment of an issued patent, as opposed to an assignment of inchoate patent rights, the scope of which have yet to be established at the time of the assignment, eventually becomes the foundation for limitations on AE imposed by the Court in *Minerva*. In *Westinghouse*, the distinction between assignment of patent claims that were in existence at the time of assignment versus patent claims that arose subsequently during the course of prosecuting an assigned application was rendered moot, since the Court found the asserted claims had not been infringed. Significantly, the Court considered prior art submitted by the accused infringer to arrive at a relatively narrow interpretation of the claims' scope. As noted by the Court in a subsequent decision, *Westinghouse* "sustained the defense of noninfringement by restricting the claims by reference to the prior art, and by holding in effect that the invention assigned was not as broad in scope as the claims would otherwise on their face define it to be."[6]

AE came before the Court again in *Scott Paper Co. v. Marcalus Manufacturing Co.* (1945), but the decision provided little additional guidance as to the contours of the doctrine. The Court in *Scott* found it unnecessary to decide whether, and to what extent, *Westinghouse* had imposed any limitations on the doctrine.[7] The issue was obviated by the Court's finding that the allegedly infringing machine was "precisely that of an expired patent," and that neither *Westinghouse*, nor "any other [case], so far as we are advised, [has applied AE] so as to penalize the use of the invention of an expired patent." *Scott* explained that "the application of the doctrine of estoppel" in those circumstances would be "inconsistent with the patent laws which dedicate to public use the invention of an expired patent."

In *Lear, Inc. v. Adkins* (1969), the Court abolished a related equitable doctrine of patent law, licensee estoppel, which had estopped licensees from challenging the validity of a licensed

[5] *Id.* at 352-53.
[6] Scott Paper Co. v. Marcalus Mfg. Co., 326 U.S. 249 (1945).
[7] *Id.*.

patent.[8] In reaching this holding, *Lear* balanced "the equities of the licensor" against "the important public interest in permitting full and free competition in the use of ideas which are in reality a part of the public domain." In the course of arriving at its decision, the Court suggested that *Westinghouse* and *Scott* had undermined the lower courts' historic "general rule" in favor of AE.

The Court of Appeals for the Federal Circuit first took up the doctrine in 1988 in the case of *Diamond Scientific Co. v. Ambico, Inc.*, wherein the court held that AE had survived *Lear*'s abrogation of licensee estoppel, explaining that "[t]he public policy favoring allowing a licensee to contest the validity of the patent"—in particular, the possibility that a licensee would otherwise be forced "to continue to pay for a potentially invalid patent"—"is not present in the assignment situation."[9]

In subsequent cases, the Federal Circuit has routinely held AE applies not only to the assignor(s), but also to those in privity with an assignor, typically a company founded and/or led by the assignor, or where the assignor plays a key, leadership role relating to the alleged infringement.[10] In determining whether privity exists, the Federal Circuit routinely applies the following non-exhaustive list of factors often referred to as the "*Shamrock"* factors, initially set forth by the Federal Circuit in 1990 in *Shamrock Technologies, Inc. v. Medical Sterilization, Inc.:*

> (1) the assignor's leadership role at the new employer;
>
> (2) the assignor's ownership stake in the defendant company;
>
> (3) whether the defendant company changed course from manufacturing non-infringing goods to infringing activity after the inventor was hired;
>
> (4) the assignor's role in the infringing activities;
>
> (5) whether the inventor was hired to start the infringing operations;
>
> (6) whether the decision to manufacture the infringing product was made partly by the inventor;
>
> (7) whether the defendant company began manufacturing the accused product shortly after hiring the assignor; and
>
> (8) whether the inventor was in charge of the infringing operation.[11]

In *Shamrock*, the court emphasized that an assignor-inventor is in privity with a defendant corporation that has "availed [itself] of [the assignor-inventor's] knowledge and assistance to conduct infringement," and since then courts have routinely applied this standard as the benchmark.[12]

---

[8] Lear, Inc. v. Adkins, 395 U.S. 653 (1969).
[9] Diamond Scientific Co. v. Ambico, Inc., 848 F.2d 1220 (Fed. Cir. 1988).
[10] See, e.g., Mentor Graphics Corp. v. Quickturn Design Sys., Inc., 150 F.3d 1374 (1998).
[11] Mag Aerospace Indus., Inc. v. B/E Aerospace, Inc., 816 F.3d 1374, 1380 (Fed. Cir. 2016) (citing Shamrock Technologies, Inc. v. Medical Sterilization, Inc., 903 F.2d 789 (Fed. Cir. 1990)).
[12] *Shamrock*, 903 F.2d at 794.

In *Shamrock*, the court found privity between an inventor-assignor and a company that had hired the inventor as a Vice President with responsibilities for developing accused product. In subsequent decisions, the Federal Circuit has found AE applicable under a variety of scenarios, including cases involving assignments for which the assignor did not receive any specific revenue,[13] and in cases involving assignments of pre-patent rights, wherein the claims at issue were drafted after the assignments had been made.[14]

In the litigation that ultimately resulted in the *Minerva* appeal, *Hologic, Inc. v. Minerva Surgical, Inc.*, the district court observed that an assignor's status as the founder of a company is generally "dispositive of the issue of privity."[15] At the same time, that court acknowledged that "[AE] was not designed to prevent companies from competing for talented employees; rather, it was intended to prevent the assignor (whether acting individually or through another entity) from 'making [a] representation [of the patent's validity] at the time of assignment (to his advantage) and later ... repudiat[ing] it (again to his advantage)."[16]

Indeed, courts have on a number of occasions declined to apply AE based on a lack of privity between the accused infringer and the assignor. For example, in *NuVasive, Inc. v. Alphatec Holdings, Inc.,* a district court recently found that two inventors of assigned patents were not in privity with an allegedly infringing company that was attempting to invalidate the patents in the litigation, even though the inventors were officers at the company and played a leading role in the sale and marketing of the allegedly infringing systems.[17] The court's decision was largely based on the fact that the company was "already deeply committed [to] manufacturing and promoting the accused system" prior to the two inventors joining the company.

Similarly, in *Acushnet Co. v. Dunlop Maxfli Sports Corp.* a company accused of patent infringement was found not to be in privity with an assignor of the patent, even though the assignor was a "Vice President of Research and Development" at the accused company.[18] The court found it significant that the assignor owned an insignificant number of shares in the accused company, did not sit on its board of directors, and held "no sway over defendant's finances or strategic decisions." The courted noted while the title of Vice President might

[13] See, e.g., Carroll Touch, Inc. v. Electro Mech. Sys., 15 F.3d 1573 (1993).
[14] See, e.g., Q.G. Prods., Inc. v. Shorty, Inc., 992 F.2d 1211 (1993).
[15] Hologic, Inc. v. Minerva Surgical, Inc., 325 F. Supp. 3d 507, 524 (D. Del. 2018) (citing Juniper Networks, 15 F.Supp.3d at 508); see also Diamond, 848 F.2d at 1224; Synopsis, Inc. v. Magma Design Automation, Inc., C–04–3923 MMC, 2005 WL 1562779, at *4–5 (N.D. Cal. July 1, 2005); Vitronics Corp. v. Conceptronic, Inc., No. C-91-696-L, 1992 WL 515321, at *4–5 (D.N.H. July 20, 1992) ("no question that privity is established" for founder and executive officer); Nortel Networks Inc. v. Foundry Networks, Inc., No. 01-CV-10442-DPW, 2003 WL 26476584, at 8–9 (D. Mass. March 24, 2003)).
[16] Hologic, Inc. v. Minerva Surgical, Inc., 325 F. Supp. 3d 507, 524 (D. Del. 2018) (citing Acushnet Co. v. Dunlop Maxfli Sports Corp., No. CIV. A. 98-717-SLR, 2000 WL 987979, at *3 (D. Del. June 29, 2000) (quoting *Diamond*, 848 F.2d at 1224).
[17] NuVasive, Inc. v. Alphatec Holdings, Inc., No. 3:18-CV-347-CAB-MDD, 2020 WL 1984061 (S.D. Cal. Apr. 24, 2020).
[18] Acushnet Co. v. Dunlop Maxfli Sports Corp., No. CIV. A. 98-717-SLR, 2000 WL 987979 (D. Del. June 29, 2000).

suggest to some that the assignor was "second in command," in fact the company had 26 "Vice Presidents."

In *Acushnet* the court observed that:

> [E]xtending the doctrine of assignor estoppel to defendant would punish it for hiring [the assignor] and using his talents to compete with plaintiff. Assignor estoppel was not designed to prevent companies from competing for talented employees; rather, it was intended to prevent the assignor (whether acting individually or through another entity) from "making [a] representation [of the patent's validity] at the time of assignment (to his advantage) and later ... repudiat[ing] it (again to his advantage)." *Diamond Scientific*, 848 F.2d at 1224. Here, the record as it stands reveals no real advantage that would accrue to Calabria from defendant's assertion of an invalidity defense. Consequently, the equities of this case do not favor a finding of privity between Calabria and defendant.

The court further observed that in all of the decisions wherein the Federal Circuit has found privity to exist, the assignor either controlled the corporation in question or had a significant financial stake in the corporation's success.

In *HWB, Inc. v. Braner, Inc.*, privity was found not to exist between a company and the company's "Vice President of Sales," even though he provided knowledge and assistance to the company relating to the allegedly infringing activity. The court noted the significance of the fact that it was unable to conclude that the relationship between the assignor and the company was such that the company

> could not have initiated the infringing operations without the assistance of [the assignor]. Significantly, [the assignor] was not hired … to initiate the alleged infringing operations, to oversee the construction of facilities necessary to perform the infringing operations and [the company] did not avail itself of [the assignor's] knowledge and assistance in order to manufacture the infringing product.[19]

The Federal Circuit has held that AE is not limited to validity challenges, but also applies to arguments that an assigned patent is unenforceable.[20] At the same time, the Federal Circuit has recognized that assignor estoppel does not apply under certain circumstances, such as in where there has been "an express reservation by the assignor of the right to challenge the validity of the patent or an express waiver by the assignee of the right to assert assignor estoppel."[21]

---

[19] HWB, Inc. v. Braner, Inc., 869 F. Supp. 579 (N.D. Ill. 1994).

[20] Semiconductor Energy Lab'y Co. v. Nagata, 706 F.3d 1365, 1370 (Fed. Cir. 2013)("Under the doctrine [of AE], an assignor sued for infringement may not defend or counterclaim that the patent he assigned is invalid or unenforceable."). See also California Expanded Metal Prod. Co. v. Klein, No. C18-0659 JLR, 2018 WL 6249793 (W.D. Wash. Nov. 29, 2018), Synopsys, Inc. v. Magma Design Automation, No. C-04-3923 MMC, 2007 WL 420184 (N.D. Cal. Feb. 6, 2007) (stating that a defendant "cannot conduct an end-run around assignor estoppel by disguising its invalidity arguments as an 'unclean hands' defense"); Hexcel Corp. v. Advanced Textiles, Inc., 716 F. Supp. 974, 977 (W.D. Tex. 1989) (striking as barred by assignor estoppel the affirmative defense of patent unenforceability on the ground that "a party precluded from asserting patent invalidity based on assignor estoppel may not use ... allegations [of unclean hands] to escape the purview of the doctrine").

[21] Mentor Graphics Corp. v. Quicktum Design Sys., 150 F.3d 1374, 1378 (Fed. Cir. 1998).

The Federal Circuit has recognized that, as an equitable doctrine, the application of assignor estoppel is within the sound discretion of the trial court.[22] In *Diamond Scientific* the court explained that

> the primary consideration in now applying the doctrine is the measure of unfairness and injustice that would be suffered by the assignee if the assignor were allowed to raise defenses of patent invalidity. Our analysis must be concerned mainly with the balance of equities between the parties.[23]

In *Arista Networks, Inc. v. Cisco Sys., Inc*., the Federal Circuit held that the doctrine of assignor estoppel does not bar an assignor from filing a petition for IPR.[24] In *Arista*, the patent owner argued that assignor estoppel barred the assignor-petitioner's IPR challenge to the patent's validity. The court rejected this argument, finding that the statute at issue, 35 U.S.C. § 311(a)—which provides that "a person who is not the owner of a patent" may file an IPR—unambiguously established that Congress intended for assignor estoppel not to apply in IPR proceedings, based on statutory language providing that "an assignor, who is no longer the owner of a patent, may file an IPR petition as to that patent.".

AE and biotechnology

AE has come up in the context of biotechnology on a number of occasions. In *Monsanto Co. v. Aventis Cropscience SA*, for example, the patents at issue (the "Comai patents") related generally to crops genetically engineered to be tolerant to glyphosate.[25] The Comai patents were assigned to Calgene. Calgene and Aventis entered into a partnership for the joint development of glyphosate-resistant crops, and the Calgene–Aventis Partnership went on to grant Monsanto an exclusive, worldwide license in the Comai patents to all crops except corn in exchange for $8 million. The court found:

> Although Calgene was the legal owner of the Comai patents at the time of the assignment to Monsanto, Aventis was in privity with Calgene and received value for the assignment. Thus, the court finds that Aventis made an implicit representation to Monsanto that the Comai patents were valid. As there are no exceptional circumstances present in this case, the court concludes that it would be inequitable for Aventis to now challenge the validity of the Comai patents.

In *Affymetrix, Inc. v. Illumina, Inc.*, the patents at issue related to computer systems for analyzing nucleic acid sequences by means of DNA microarray technology.[26] Affymetrix filed a motion arguing that Illumina was in privity with Dr. Chee, an inventor on the patents. The court denied

---

[22] Checkpoint Sys., Inc. v. All-Tag Sec. S.A., 412 F.3d 1331, 1337 (Fed. Cir. 2005).
[23] *Diamond Scientific*, 848 F.2d at 1225; see also Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1579 (Fed.Cir.1993) ("A determination whether assignor estoppel applies in a particular case requires a balancing of the equities between the parties.").
[24] Arista Networks, Inc. v. Cisco Sys., Inc., 908 F.3d 792, 804 (Fed. Cir. 2018). *See also*, Hologic, Inc. v. Minerva Surgical, Inc., 957 F.3d 1256 (Fed. Cir. 2020).
[25] Monsanto Co. v. Aventis Cropscience SA, 226 F. Supp. 2d 531, 540 (D. Del. 2002).
[26] Affymetrix, Inc. v. Illumina, Inc., No. CV 04-901 JJF, 2005 WL 8170962 (D. Del. Sept. 16, 2005).

the motion, finding that the proceedings were still at an early stage, and as such the court lacked sufficient information to conclude that Dr. Chee was in privity with Illumina..

> To decide the question of privity, the Court must balance the equities in light of the allegedly infringing act. To do so, the Court must have before it a full and accurate account of the precise nature of Dr. Chee's relationship with Illumina and his involvement in the development of the allegedly infringing technology.
>
> The Court finds, however, that there is a genuine dispute of material fact with regard to this point. Compare (D.I. 13 at 9) (contending that Dr. Chee "was obviously closely involved in the development of Illumina's infringing BeadArray™ technology") with (D.I. 20 at 12) (contending that Dr. Chee "had no role whatsoever in the commercial development of the allegedly infringing computer analysis software").

In *Synbias Pharma v. Solux Corp*., the patents at issue were directed to methods of producing anthracycline antibiotics, including epirubicin hydrochloride and idarubicin hydrochloride, and also to novel stable, crystalline forms of these compounds.[27] The defendant ("Solux") filed a motion for partial summary judgment seeking to bar Synbias from challenging the validity or enforceability of the patents-in-suit, alleging that Synbias, or those in privity with Synbias, assigned the patents-in-suit to Solux for value and were therefore estopped.

In its opposition, Synbias, a Ukranian company, raised serious questions regarding whether the assignments from the Synbias inventors to Solux were valid. Particularly, Synbias pointed out that each inventor signed an employment agreement with Synbias prior to entering into the assignment agreements with Solux. Pursuant to those agreements, all information about the Synbias inventors' research belongs exclusively to Synbias. Additionally, the agreements state that "[a]ll rights to the registration and obtaining of a patent(s) for the Invention on the territory of any state [belongs] exclusively to [Synbias]." Moreover, Synbias submitted a declaration of an expert on Ukrainian law that the Synbias inventors lacked authority under Ukrainian law to assign to third parties the rights to inventions they created during the course of their employment, even if the Synbias inventors had not entered into the employment agreements with Synbias.

The court found that Solux had failed to prove the existence of a valid assignment, and thus Solux had not met its burden to show that it was entitled to judgment as a matter of law that assignor estoppel barred Synbias from challenging the validity or enforceability of the patents-in-suit.

In the case of *Illumina Inc. v. Complete Genomics Inc.*, the patent at issue (the ′597 patent) named Dr. Macevicz as its sole inventor.[28] At the time the patent application was filed in the mid-1990s, Dr. Macevicz was working as in-house patent counsel for Applied Biosystems. He testified that he prepared, filed, and prosecuted the patent application that resulted in the ′597 on his own behalf, and on his own time, working at home on nights and weekends. At the time, he was also working as patent counsel to Lynx Therapeutics under a Corporate Services Agreement

[27] Synbias Pharma v. Solux Corp., No. 11-CV-3035-H (JMA), 2013 WL 12095235 (S.D. Cal. Jan. 17, 2013).
[28] Illumina Inc. v. Complete Genomics Inc., No. C -10-05542 EDL, 2013 WL 1282977 (N.D. Cal. Mar. 26, 2013).

between Applied Bioystems and Lynx. He went on to sell the patent to Lynx, which then merged with Solexa, which along with Illumina was a plaintiff in this lawsuit asserting that the patent was infringed by Complete Genomics Inc. (CGI). The ′597 patent relates to DNA sequencing, and the plaintiffs alleged that CGI infringed through the use of it use of a particular platform to perform DNA sequencing services.

In 2006, CGI engaged Dr. Macevicz to provide the company with legal advice. During the course of that engagement, he provided CGI with a "clearance opinion" on numerous patents, including the ′597 patent. Dr. Macevicz's clearance opinion regarding the ′597 patent consisted of a quotation of the claims of the patent and then a comment regarding the patent's potential invalidity if claim 1 were construed as not requiring a repetition of cycles:

> Claim 1 describes a process in which an initializing oligonucleotide is successively extended along a template in cycles of ligation and identification. Step (c) indicates that such cycles must be carried out more than one time. In [sic] this were not the case, then the claim would appear to 'read' on Whiteley's (4,883,750) disclosure and therefore be invalid.

During the litigation, the district court construed the claim such that step (c) was not in fact limited to processes in which the cycles are carried out successively. Based on the inventor's earlier opinion, CGI argued that Dr. Macevicz has admitted that Claim 1 of the ′597 patent (as subsequently interpreted by the court) was invalid over Whiteley.

Illumina countered that AE precluded the court from considering Dr. Macevicz's opinion. But the court found AE inapplicable to the case at hand, noting that Dr. Macevicz was not an employee of CGI, and thus CGI and he were not in privity. The court went on to note, however, that AE did apply to Dr. Macevicz as an individual, since he had received valuable consideration for his patent when he assigned it to Lynx, and as such he was barred from asserting its invalidity.

However, the court went on to find that Dr. Macevicz had not actually asserted the ′ 597 patent's invalidity when he provided his clearance opinion to CGI.

> Rather, Dr. Macevicz was giving his interpretation of step (c) of claim 1 as having to be carried out more than one time; only if step (c) were construed not to require repetition would "the claim ... appear to 'read' on Whiteley's ... disclosure and therefore be invalid." His statement is conditional: *if* the step (c) cycles of ligation and identification are not repeated, contrary to his own interpretation, *then* the claim would likely read on Whiteley. Such a conditional statement cannot be an assertion of invalidity under the doctrine of assignor estoppel; for an individual's observation to have such profound legal effect based on equity, the statement cannot be equivocal. …. Dr. Macevicz was not asserting that what he assigned to Lynx was a nullity; rather, he was pointing out a condition precedent to its validity. Indeed, Dr. Macevicz specifically did not say that the ′597 patent was invalid; rather, he pointed out a potential interpretation, contrary to his own, that could call the patent's validity into question. Only later did the courts disagree with his interpretation of step (c), opening the door to invalidity based on a broader construction. Significantly, Dr. Macevicz was not engaging in the inequitable conduct that the equitable doctrine of assignor estoppel seeks to prevent, which is

> to get value unfairly from the assignment of a patent and then turn around and diminish that value to the assignee. His confidential, proprietary opinion provided to another company regarding its own projects was never meant to be public or to be shared with the assignee. There is no evidence to suggest that his work for CGI involved any strategy to invalidate the assignment he had earlier made to Lynx/Solexa.

The court went on to find certain claims of the patent (including claim 1) invalid as anticipated by the Whitely reference.

In *Roche Molecular Sys., Inc. v. Cepheid*, the patent at issue (the '723 Patent) was directed to methods for detecting mycobacterium tuberculosis (MTB) in humans, methods for identifying MTB that is resistant to the antibiotic "rifampin," and synthetic DNA molecules called "primers" used to perform these methods.[29] The patented invention arose out of research conducted by scientists working at Roche and the Mayo Foundation for Medical Education and Research ("Mayo"). One of the named inventors, Dr. Persing, assigned his rights in the '723 patent to his then-employer, Mayo. Dr. Persing went on to become Executive Vice President and Chief Medical and Technology Officer at Cepheid, and was allegedly responsible for the overall direction of the project at Cepheid that resulted in the product accused of infringement, a diagnostic assay for MTB. Mayo assigned its rights in the '723 Patent to Roche at the time Roche filed this lawsuit against Cepheid.

Cepheid moved to have the claims struck down as invalid for being directed to patent ineligible subject matter, and Roche raised AE in its defense, arguing that Cepheid is in privity with Dr. Persing and thus estopped from arguing that that patent is invalid. Cepheid did not dispute that the company was in privity with Dr. Persing, but argued that "it would be unfair, inequitable and contrary to the purposes of the doctrine to apply assignor estoppel here because its ineligibility defense is based on a change in law regarding patentable subject matter that occurred long after Dr. Persing assigned his interests to Mayo in 1994." The district court agreed with Cepheid, and found that a significant change in the law of patent eligibility occurred after the assignment, particular in view of the Supreme Court's decisions in *Ass'n for Molecular Pathology v. Myriad Genetics* (2013)*, Inc.* and *Mayo Collaborative Services v. Prometheus Laboratories, Inc*. (2012).[30]

Roche argued that there had in fact been no change in the law of patent eligibility, but that *Myriad* should instead be viewed as an "authoritative statement of what § 101 has always meant." Roche relied on *Encyclopaedia Britannica, Inc. v. Dickstein Shapiro LLP*, which stated that the "standard for patentability" as set forth in § 101 had not changed after *Alice* because the "Supreme Court has long held that abstract ideas are unpatentable, and has interpreted § 101 and its predecessors in light of this principle for more than 150 years" and that "*Alice* represents the

[29] Roche Molecular Sys., Inc. v. Cepheid, No. 14-CV-03228-EDL, 2017 WL 6311568 (N.D. Cal. Jan. 17, 2017), aff'd, 905 F.3d 1363 (Fed. Cir. 2018).
[30] Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013); Mayo Collaborative Services v. Prometheus Laboratories, Inc., 566 U.S. 663 (2012).

Supreme Court's definitive statement on what § 101 means—and always meant."[31] The district court rejected this argument, finding that:

> *Encyclopaedia Britannica* does not concern the patentability of DNA or assignor estoppel, and its holding, while correct in a formalistic sense, did not address the sea change wrought in practice in the realm of DNA patentability. … There can be no genuine dispute that *Myriad* significantly changed the legal landscape of DNA patentability. Indeed, Roche argued in an *amicus* brief to the Supreme Court during the *Myriad* proceedings that a ruling that isolated DNA sequences are not patent eligible would "upset reliance interests" and jeopardize patents on "DNA–based diagnostic tests." During oral argument, Roche attempted to diminish the significance of its *amicus* position by arguing that when it made these statements, it was merely arguing against any sweeping decision by the Supreme Court. Nevertheless, the brief shows that Roche, like everyone else in this space, was aware of the significance of the Court's pending ruling on DNA patent law. And while *Myriad* may not have overruled existing Supreme Court precedent because there was no Supreme Court precedent regarding DNA patentability to overrule, it reversed the Federal Circuit and sharply altered longstanding PTO practice and the jurisprudence of lower courts.

The court went on to note that Mayo had only recently assigned its rights in the '723 Patent (which it earlier acquired from Dr. Persing) to Roche, and at the time Roche acquired rights to the '723 Patent the company:

> knew or should have known that the asserted claims could be deemed unpatentable, as Roche had argued in its 2013 *amicus* brief in *Myriad* that patented DNA–based diagnostic tests would be in jeopardy if the Supreme Court ruled as it later did. It is not as if Roche paid money for a patent it thought was valuable, only to have the inventor (who had previously profited by way of an assignment) declare the patent valueless in order to profit a second time, which was the primary concern articulated as justification for assignor estoppel in *Diamond Scientific*.
>
> Especially where Roche knew at the time that it acquired rights to the patent that the patent might be invalid and valueless, when considering the overarching "measure of unfairness and injustice that would be suffered by the assignee if the assignor were allowed to raise defenses of patent invalidity" and "the balance of equities between the parties," the balance of equities tips in favor of allowing Cepheid to raise the issue of patent invalidity post–*Myriad*.

The court went on to find the asserted claims of the '723 patent to be patent ineligible, a decision that was affirmed on appeal.[32]

In *Verinata Health, Inc. v. Ariosa Diagnostics, Inc.*, Ariosa was accused of infringing a patent claiming multiplex methods for amplifying DNA through the marketing of its Harmony V2

[31] Encyclopaedia Britannica, Inc. v. Dickstein Shapiro LLP, 128 F.Supp.3d 103, 108–110 (D.D.C. 2015), aff'd, No. 15-7100, 653 Fed.Appx. 764, 2016 WL 3545138 (D.C. Cir. June 10, 2016).
[32] Roche Molecular Sys., Inc. v. Cepheid, 905 F.3d 1363 (Fed. Cir. 2018).

Prenatal Test.[33] Two of the inventors on the patent, which have been assigned to Verinata, were found to be in privity with Ariosa, and the district court held that AE applied. Significantly, one of the inventors was the founder and Executive Chairman at Ariosa, the other was the Chief Scientific Officer who worked on the Harmony V2 Test. Significantly, Ariosa did not dispute privity.

Instead, Ariosa argued that AE should not apply because the claims of the assigned patent application differed significantly from the claims in the patent that ultimately issued. The court rejected this argument, however, pointing to the language of the assignment documents signed by the two inventors, which stated that "the entire right, title, and interest in and to said invention, said application, any applications ... which include divisionals, continuations, and reissues, and any Letters Patent that may be granted on said inventions or these applications." The court appeared to treat as dispositive the language of the assignment document, which explicitly assigned the patent application that ultimately issued as the asserted patent, irrespective as to whether, and to what extent, the patent claims had changed during the course of prosecution.

On appeal, the Federal Circuit found it unnecessary to address the issue of assignor estoppel, given the court affirmance of the jury's verdict of no invalidity.[34]

Background for *Minerva*

This section of the article summarizes the factual and legal background leading up to *Minerva*.[35] The patent claims at issue in *Minerva* are directed to methods and apparatuses for endometrial ablation, a procedure used in the treatment of Abnormal Uterine Bleeding, or AUB. The procedure ablates (destroys) the endometrial lining of the uterus with the goal of stopping or significantly reducing bleeding. A successful endometrial ablation significantly improves a patient's life and allows the patient to avoid a more invasive hysterectomy.

In 1993, Csaba Truckai co-founded NovaCept, Inc. In the late 1990s, Truckai and the design team at NovaCept developed an ablation device called NovaSure. The NovaSure system first applies carbon dioxide gas to the uterus to detect perforations in the uterine wall. It then uses an applicator head to heat the endometrial lining, while a "moisture transport" function removes steam and moisture from the uterus to avoid unintended ablation, embolism, or burning. In 1998, Truckai and his co-inventors filed a provisional patent application relating to an invention titled "A Moisture Transport System for Contact Electrocoagulation," and he assigned to NovaCept his rights in the invention, the patent application, and any continuation applications resulting from it. In 2001, the NovaSure system received FDA approval for commercial distribution.

[33] Verinata Health, Inc. v. Ariosa Diagnostics, Inc., 329 F. Supp. 3d 1070, 1115 (N.D. Cal. 2018), order clarified, No. 12-CV-05501-SI, 2018 WL 4849681 (N.D. Cal. Oct. 4, 2018), and aff'd sub nom. Verinata Health, Inc. v. Ariosa Diagnostics, Inc, 809 F. App'x 965 (Fed. Cir. 2020).
[34] Verinata Health, Inc. v. Ariosa Diagnostics, Inc, 809 F. App'x 965 (Fed. Cir. 2020).
[35] Much of the background of the case is taken from the district court and Federal Circuit decisions, as well as amicus curiae brief filed by the U.S. government with the Supreme Court.

In 2004, Cytyc Corporation acquired NovaCept, including NovaCept's patents and patent applications, for $325 million. Truckai personally earned approximately $8 million from the sale. Truckai apparently made no representations regarding Novacept's intellectual property in conjunction with the sale. Hologic later acquired Cytyc in 2007.

In 2008, after leaving NovaCept, Truckai founded Minerva, where he has served as the company's President, its Chief Executive Officer, and a member of its Board of Directors. At Minerva, Truckai and others developed and brought to market the Minerva Endometrial Ablation System (EAS). Minerva's device uses an applicator head that, in contrast with the NovaSure system, is impermeable to moisture. In 2015, Minerva received FDA approval to use the EAS for the same indication as the NovaSure system, and began commercial distribution of the EAS in August 2015.

In November 2015, Hologic sued Minerva in the U.S. District Court for the District of Delaware, alleging that Minerva's EAS and the use thereof infringed certain claims of the '183 and '348 patents, both of which issued from continuation applications claiming priority to the application originally assigned by Truckai to NovaCept,. Minerva argued in district court that the asserted claims were invalid for lack of enablement and failure to provide an adequate written description, and also filed petitions for inter partes review (IPR) at the U.S. Patent and Trademark Office (PTO) challenging the patentability of the asserted claims of both patents in view of the prior art. The Board denied review of the '348 patent, but instituted IPR proceeding with respect to the'183 patent, ultimately issuing a written decision declaring the asserted claims of that patent unpatentable as obvious.[36] On appeal, the Federal Circuit affirmed the Board's decision with respect to the invalidity of the '183 patent.[37]

Meanwhile, the district court granted Hologic's motion for summary judgment that AE barred Minerva from challenging the validity of the patent claims in district court. Minerva argued that AE should not bar its Section 112 invalidity challenge because Hologic had broadened its patent claims after Truckai's execution of the assignment agreement, and in particular by expanding the claims to cover non-moisture-permeable applicator heads.

The district court sided with Hologic and found that under Federal Circuit precedent, including *Diamond Scientific*, the fact that the assignee had amended the claims post-assignment was irrelevant, given that Truckai had assigned any patent arising out of the assigned application or continuations of that application.

After "[c]onsidering the balance of equities and the relationship of Minerva and Truckai," the district court found that "Truckai is in privity with Minerva" and that "assignor estoppel applies to Minerva's defenses to Hologic's patent infringement claims." The court pointed to "[u]ndisputed evidence" that Mr. Truckai had founded Minerva, had "used his expertise to research, develop, test, manufacture, and obtain regulatory approval for the Minerva EAS," that his "job responsibilities as Minerva's President and CEO included bringing the accused product

[36] See generally Minerva Surgical, Inc. v. Hologic, Inc., No. IPR2016-00868, 2017 WL 6404966 (P.T.A.B. Dec. 15, 2017).
[37] Hologic, Inc. v. Minerva Surgical, Inc., 764 F. App'x 873 (Fed. Cir. 2019).

to market to directly compete with Hologic," and that he had "executed broad assignments of his inventions to NovaCept, which was then sold to Hologic's predecessor for $325 million." In addition, the district court granted summary judgment of no invalidity in Hologic's favor. The district court also granted summary judgment of infringement of the asserted '183 and '348 patent claims.

On appeal, the Federal Circuit held that Hologic was collaterally estopped from asserting infringement of the'183 patent, in view of the IPR decision.[38] The court stated that it was

> mindful of the seeming unfairness to Hologic in this situation. Although Minerva would have been estopped from challenging the validity of the '183 patent claims in district court, it was able to challenge their validity in an IPR proceeding and, hence, circumvent the assignor estoppel doctrine. Minerva had the right to do so under the AIA and this court's precedent. This court has held that the doctrine of assignor estoppel does not bar an assignor from filing a petition for IPR. *Arista Networks, Inc. v. Cisco Sys., Inc*., 908 F.3d 792, 804 (Fed. Cir. 2018). [discussed above] While we understand Hologic's predicament, we nevertheless conclude that the district court did not abuse its discretion in denying Hologic its requested injunctive and monetary relief following a finding of patent infringement. Because the '183 patent claims are invalid, Hologic cannot assert those claims or seek ongoing monetary or injunctive relief based on infringement. Our affirmance of the Board's invalidity decision in Hologic is dispositive of the validity of the '183 patent claims, regardless of how the validity question came to this court, and regardless of whether assignor estoppel bars Minerva from challenging the patent's validity in this district court case.

The Federal Circuit went on to affirm the district court's decision that AE precluded Minerva from challenging the validity of the '348 patent, upholding the district court's grant of summary judgment of no invalidity as to the asserted claim of that patent. The court stated that it

> agreed with the district court that the equities weigh in favor of [the application of AE] in this case. The facts here are analogous to those in *Diamond Scientific*, *Shamrock*, and other cases in which an inventor executes broad assignments to his employer, leaves his employer, founds or takes on a controlling role at a competing company, and is directly involved in the alleged infringement. . . . Minerva also does not challenge the district court's finding that Minerva is in privity with Mr. Truckai—the original assignor and Minerva's founder, President, and CEO.

The Federal Circuit was unpersuaded by Minerva's argument that AE should not apply because it was Hologic, not Mr. Truckai, who prosecuted the '348 patent and was responsible for the drafting of the infringed claims. Minerva pointed out that the continuation application from which the '348 patent issued was filed in 2013, after Mr. Truckai had left NovaCept and founded Minerva. Hologic had broadened the claims during prosecution and after Mr. Truckai's assignment, and Minerva argued that it would be unfair to bar Mr. Truckai (or Minerva) from challenging the breadth of those claims.

[38] Hologic, Inc. v. Minerva Surgical, Inc., 957 F.3d 1256 (Fed. Cir. 2020).

The court responded that *Diamond Scientific* had found it "irrelevant that, at the time of the assignment," the inventor's "patent applications were still pending" and that assignee Diamond "may have later amended the claims in the application process (a very common occurrence in patent prosecutions), with or without [the inventor's] assistance."

> To the extent Hologic "may have broadened the claims" in the application that issued as the '348 patent after Mr. Truckai's assignment "beyond what could be validly claimed in light of the prior art," the Supreme Court's and this court's precedents allow Minerva to "introduce evidence of prior art to narrow the scope of" claim 1 so as to bring its accused product "outside the scope of" claim 1. "[T]his exception to assignor estoppel also shows that estopping [Minerva] from raising invalidity defenses does not necessarily prevent [it] from successfully defending against [Hologic's] infringement claims."

The decision was appealed to the Supreme Court, which granted certiorari to address the Federal Circuit's application of the doctrine of assignor estoppel to the validity challenge with respect to the '348 patent that occurred in the district court. The Court's sharply divided opinion is discussed later in this article.

Amicus briefs filed at the Supreme Court

Before delving into the Supreme Court's decision in *Minerva*, this article will review some of the arguments made by a number of amici curiae who filed briefs for the Supreme Court in connection with this case, primarily to consider the policy implications of AE and the Courts resolution of the issues raised on appeal. The briefs fall into three categories: (1) briefs filed in support of the petitioner, arguing for the abrogation of AE, or at least significant limitations of the doctrine; (2) briefs supporting neither party, but generally calling for the court to maintain AE while at the same time imposing substantial limitations on the doctrine; and (3) briefs supporting the respondent, and arguing in favor of the continuance of a robust doctrine of AE.

Amicus briefs supporting petitioner

Only two amicus curiae briefs were filed in support of the petitioner, both arguing for abrogation of, or, at a minimum, the imposition of significant limitations on, the doctrine of AE. Both were filed by law school clinics, i.e., the Cyber Law Clinic at Harvard Law School, and the Juelsgaard Intellectual Property and Innovation Clinic, Mills Legal Clinic at Stanford Law School.

The Harvard brief was filed nominally on behalf of Engine Advocacy ("Engine"), which is described in the brief as a "nonprofit technology policy, research, and advocacy organization that bridges the gap between policymakers and startups." [39] The brief states that it was filed in order to "share the perspective of nascent technology companies regarding the Federal Circuit's broad application of assignor estoppel to shield low-quality patents," and particularly to "highlight the harm to innovation, entrepreneurship, and healthy employee mobility that results from the [Federal Circuit's] expansive approach to this patent-specific, judge-made doctrine."

[39] Brief of Engine Advocacy as Amicus Curiae in Support of Petitioners, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2020 WL 6699924.

Engine asserts that low-quality patents are often "the bane of a startup's existence," and argues that "modern technology companies and employment practices have undermined assignor estoppel's original principles. No longer a protection against bad-faith assignments, assignor estoppel has morphed into a powerful tool to preserve invalid patents and scrutiny."

The brief argues:

> For startups, the harm caused by invalid patents is particularly acute, and the ability to challenge low-quality patents is especially important. Even a meritless lawsuit can force an early-stage startup to face the needless crises - for example substantially damaging its credit, valuation, or relationships with customers and investors; at worst, some startups facing litigation will have to close up shop.… Indeed, assignor estoppel often serves to protect patents most likely to be asserted against disruptive, innovative new companies.… Assignor estoppel's far-reaching effects are especially damaging to startups due to the disparity between resources available to startups and those available to well-established competitors.
>
> …
>
> Not only do low-quality patents create disincentives for innovation, the association of an inventor-employee's previous work with an arguably invalid patent creates barriers to that employee's mobility in the labor force.… Particularly in technology industries, standard employment agreements include stock language for assignment of current and future inventions. Likewise, many employees have little to say about the actual language in a patent, as employers frequently work with counsel to draft patents. These facts contradict the fundamental premise of assignor estoppel, because it is impossible for an employee to assess the validity of an invention that has not yet been contemplated into patent claims that have not yet been drafted.

The brief goes on to criticize the Federal Circuit's purported expansive interpretation of "privity" in its AE precedent, and particularly manner in which it was interpreted by the Federal Circuit in the instant decision on appeal before the Supreme Court.

> Defining privity very broadly, the Federal Circuit has continued to gradually expand the doctrine by first applying the doctrine to assignor-founded companies. See *Diamond Sci. Co. v. Ambico, Inc.,* 848 F.2d 1220 (Fed. Cir. 1988). The court then applied it to the assignor's new employers. *Shamrock Techs., Inc. v. Med. Sterilization, Inc.*, 903 F.2d 789, 794 (Fed. Cir. 1990). The court went even further, expanding privity to include, for example, subsidiaries purchased after assignment, minority shareholders, and joint venture partners. See *Mentor Graphics Corp. v. Quickturn Design Sys., Inc*., 150 F.3d 1374 (Fed. Cir. 1998); *Intel Corp. v. U.S. Int'l Trade Comm'n*, 946 F.2d 821 (Fed. Cir. 1991).

The Stanford Law School clinics filed a brief on behalf of a group of intellectual property law professors (the "IP Professor's brief").[40] The brief argues that the Federal Circuit has been

[40] Brief of Amici Curiae Intellectual Property Law Professors in Support of Petitioner, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 878675.

steadily expanding AE's application well beyond the doctrines original purpose, i.e., "preventing inventors from selling a patent for profit by misrepresenting or concealing the facts of its validity to an assignee who relies on that misrepresentation," and Supreme Court precedent.

According to these IP professors:

> The Federal Circuit has permitted assignor estoppel to bar validity challenges even when there is no sale of a patent or misrepresentation of patent validity, including situations where employees agree on their first day of work to assign future inventions that they might not make for years or even decades. It has broadened the definition of privity to allow assignor estoppel to prevent validity challenges by anyone with even a remote connection to the inventor-assignor. It has applied the doctrine to bar legal arguments based on the words the lawyers draft rather than anything the inventor represented. And it has applied the doctrine to patents drafted well after the employee left the company. The result has been that virtually none of the cases in which the Federal Circuit applies assignor estoppel bear any resemblance to the narrow doctrine this Court has considered in the past.

The IP Professor's brief to a large extent restates arguments made in the Engine brief regarding the problem of bad patents, and AE's purported adverse impact on job mobility, start-up companies, and innovation in general. The brief asks the Court to either eliminate the doctrine in its entirety, or at a minimum "explicitly limit the doctrine to its narrow roots." The propose that:

> To the extent the doctrine has any continued vitality, it is only when its three underlying logical criteria are met: (1) the assignor sells a patent; (2) the assignor misrepresents a fact of the patent's validity; and (3) the assignee relies on that misrepresentation.

The brief argues that these conditions do not apply in the vast majority of assignor estoppel cases. To the contrary, they argue that:

> Assignor-employees [are] not patent lawyers, so they are not likely to understand, much less affirmatively misrepresent, patent validity. Assignors typically play little to no role in claim drafting, which is instead left to the employer's patent counsel. [Many] important patent validity doctrines-including patentable subject matter, obviousness, enablement, and indefiniteness-are ultimate questions of law. Yet assignor-employees are not legal experts who can make promises as to those legal questions.

They go on to argue that, although *Westinghouse* purports to provide a "remedy to the problem of an overclaiming assignee by allowing assignors and their privies to rebut overbroad claims by introducing prior art evidence to narrow the scope of those claims," in fact:

> The Federal Circuit's modern approach to claim construction effectively abandons the earlier canon of claim construction used in *Westinghouse*. That court now treats preserving validity as an interpretive canon of last resort, if it is to be applied at all. *Phillips v. AWH Corp*., 415 F.3d 1303, 1327 (Fed. Cir. 2005) (en banc). The court only considers the canon if the claim scope is "still ambiguous" after looking to the plain meaning of the claim language, its customary meaning to a person of

> ordinary skill in the art, the specification, prosecution history, unasserted claims, other sections internal to the patent, dictionaries, expert testimony, and treatises. In short, the Federal Circuit "acknowledge[s] the maxim that claims should be construed to preserve their validity" but does not apply it. That means that assignor estoppel today effectively bars challenges to overbroad claims, directly contravening *Westinghouse*.

The brief goes on to observe that while the Federal Circuit has held that assignors can challenge overbroad claims through IPR,[41] these proceedings are limited to prior art- based challenges, i.e., lack of novelty and obviousness, and that only prior art consisting of patents or printed publications is admissible for purposes of IPR. As a result, IPR does not provide a vehicle for patent challenges based on patentable subject matter, enablement, or indefiniteness challenges, or based on other forms of prior art, e.g., public use or on-sale events.

The brief further argues that AE "creates a powerful disincentive for competitors to hire" employees with experience in the field," and "requires hiring companies to compartmentalize employees away from their most productive work, and therefore discourages the hiring of inventive employees." As a consequence, "the most productive and experienced employees, who are already engaged in inventive activities in their industry, become untouchables; they cannot find companies willing to hire them or risk founding a company of their own."

Amicus briefs supporting neither party

The U.S. government and two of the most prominent organizations representing IP attorneys and IP owners, the American Intellectual Property Law Association (AIPLA) and the Intellectual Property Owners Association (IPO), filed amicus curiae briefs in support of neither party. These briefs essentially argued that the Supreme Court should retain AE, but should use the grant of certiorari as an opportunity to limit and clarify the scope of the doctrine.

The U.S. government argues in its brief that, while there is no sound basis for eliminating AE entirely, the doctrine should be constrained to its "equitable core."[42] In particular, the government argues that AE should only apply when:

> the assignor sells patent rights for valuable consideration in an arm's-length transaction, then either contests the validity of a claim materially identical to a claim issued or pending at the time of the assignment, or otherwise contradicts pre-assignment representations about the patent's validity. [A]ssignor estoppel should not apply where the claim asserted to be invalid is broader than or otherwise different from the patent rights that were assigned.

The brief cites an article by Professor Mark Lemley for the proposition that "if an employee assigns to his employer all patent rights to any inventions he may develop in the course of his

[41] Arista Networks, Inc. v. Cisco Sys., Inc., 908 F.3d 792 (Fed. Cir. 2018).
[42] Brief for the United States as Amicus Curiae Supporting Neither Party, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, No. 20-440.

employment, the assignment generally would not imply any representation as to the patentability of particular inventions."[43]

The U.S. brief goes on to argue that:

> The same is true when an inventor assigns rights to an invention before a patent has been issued, and the USPTO later approves patent claims that are broader, or cover different subject matter, than the claims the inventor assigned (or the claims the inventor initially prosecuted in USPTO proceedings). In that circumstance as well, the assignment would not logically be construed as an implicit representation by the inventor that the subsequent claims are valid. Finally, if an inventor assigns claims before a clear change in the prevailing interpretation of the applicable law, a later invalidity defense would not contradict an earlier implicit warranty about the assigned claims' validity. In any of those scenarios, assignor estoppel should not apply.

The AIPLA's brief argues that AE should be limited to the rights that the assignors intended to assign, not to "other rights they could not have imagined when making the assignment."[44] AIPLA argues that the rationale underlying AE will often not apply when "the inventor assigns draft patent applications, and the patents issue well after the assignment and without the inventors' input or assistance."

Their brief points out that this is often what happens when the inventor is the employee of the company, and obligated to assign all of their work to the employer as a condition of employment. The AIPLA brief distinguishes between an inventor who plays no part in the prosecution of an assigned patent application through the grant of the patent with broader claims, a fact which in and of itself might preclude estoppel, and an inventor-employee that was actively involved in prosecuting the patent application, and understood the rights assigned.

On the other hand, the AIPLA voices concern that the testimony of an inventor testifying against the validity of her own patent could have a great influence over trier of fact deciding the validity of the patent, a concern which the organization argues justifies the retention of AE under some circumstances. The brief goes on to warn that:

> Former employee inventors are often the greatest source of trade secret misappropriation and related claims, often involving competing start-ups. Were assignor estoppel eliminated, employers would face the possibility that no contract language would keep employees from later challenging a patent naming them as an inventor. Abolishing assignor estoppel could promote bad behavior.

[43] *Id.*, citing Mark A. Lemley, Rethinking Assignor Estoppel, 54 Hous. L. Rev. 513 (2016).
[44] Brief Amicus Curiae of American Intellectual Property Law Association in Support of Neither Party, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 878674.

In its brief, the IPO urged the Court to "confirm the continued viability of the doctrine of assignor estoppel as a rebuttable presumption in accordance with the traditional principles of equity in light of the totality of the circumstances."[45]

The IPO brief emphasizes the important role the requirement of privity plays in guarding against undue application of the doctrine in a manner that would impede employee mobility or discourage start-up companies and innovation.

> It is generally settled that, if an assignor forms a corporation or other business entity wholly owned by her and causes that entity to infringe the assigned patent, the corporation is the assignor's privy. In contrast, if the assignor is a "mere employee" of the infringing company, the company will not be in privity with the assignor. Cases that fall in between these two extremes may be decided by determining the closeness of the relationship among the relevant parties through examination of the totality of the circumstances.
>
> …
>
> Assignor estoppel was not designed to prevent companies from competing for talented employees; rather, it was intended to prevent the assignor (whether acting individually or through another entity) from making a representation of the patent's validity at the time of assignment (to his advantage) and later... repudiating it (again to his advantage)." As such, privity should not attach to employees who are simply working for the defendants making the allegedly infringing products and are not directing actions that lead to the alleged infringement, as they are not directly repudiating the assigned invention.
>
> ,,,
>
> Rather, an assignee's contribution to the infringing product should be sufficiently significant and material to conclude that the accused infringing company availed itself of the inventor's knowledge and assistance to conduct infringement.

The IPO is essentially referring to the Federal Circuit's *Shamrock* test, discussed above.

Amicus briefs supporting respondent

Three amicus curiae briefs were filed in support of the respondent, all urging the Court to maintain the robust doctrine of AE as applied in the instant decision below and other Federal Circuit case law. Two of these briefs were filed on behalf of companies currently involved in litigation in which they hope to benefit from AE, or that have recently benefited from AE in patent litigation involving a party in privity with an assignor, and/or anticipate future litigation in which AE could come into play. The third brief was filed by the Pharmaceutical Research and Manufacturers of America (PhRMA), signaling a particular importance of this equitable doctrine for pharmaceutical companies, where it is common for inventor-employees to end up working for, or founding, a company competing in a similar therapeutic space.

[45] Brief of Amicus Curiae Intellectual Property Owners Association in Support of Neither Party, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 877693.

PhRMA's brief emphasizes the importance of maintaining a robust doctrine of AE in order to protect the reliance interests of companies that have made significant investment decisions based on an expectation that the doctrine is viable.[46] The brief observes that companies often face a choice between seeking patent protection, or, in the alternative, maintaining an innovation as a trade secret. PhRMA contends that historically, were it not for AE, companies would have been more likely to have chosen trade secret protection over patenting. Instead, these companies have chosen to publicly disclose their inventions in exchange for patent protection, based on their understanding that employee-inventors would be estopped from challenging their own patents. In doing so, they have expended a great deal of resources in obtaining the patents, and have also irreversibly forfeited any future opportunity for a cause of action in trade secret. Furthermore:

> These companies have also forgone the opportunity to negotiate contractual arrangements with the inventor that could have protected them from the debilitating effect of negative inventor testimony, such as express representations about the patent's validity. They have invested heavily in marketable products based on the belief that the patents covering those products would not be vulnerable to attack from the inventor. And they have watched their employee-inventors move on to new employment without fear that their prized intellectual property was going with them.

PhRMA points out that the testimony of an inventor can be particularly devastating when that inventor opines that her own patent is invalid.

> Without assignor estoppel, companies that have acquired patents would thus be left with a Hobson's choice between risking the undue weight likely to be assigned to the identity of the party mounting a validity challenge and allowing the inventor and those in privity to infringe the patent.

PhRMA's brief argues that abrogating AE would harm the reliance interests of companies that have invested in innovation and patenting, based on their assumption that assignors, and those in privity with assignors, would not be able to challenge the validity of the resulting patents. The brief identifies the following ways in which companies might have justifiably relied on the existence of the doctrine.

First, companies might have relied upon the availability of the doctrine in deciding whether to seek patent protection for an invention, rather than, in the alternative, keeping it as a trade secret. The brief points out that trade secrets have no time limit, and can be enforced against the inventor. AE encourages patenting over secrecy, and PhRMA contends that the public has benefited from the increased public disclosure of innovation that occurs when innovators rely upon patents rather than trade secret protection.

Second, businesses may have paid more for patents in the past based on their assumption that AE would be available in the future. PhRMA argues that a company will be willing to pay more money for a patent under a regime in which an assignee and those in privity with that assignee

[46] Brief for Pharmaceutical Research and Manufacturers of America as Amicus Curiae Supporting Respondent, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 1253643.

are not permitted to challenge a patent's validity, and that the reduction in the valuation of assigned patents that would occur if AE is abrogated would discourage early investment and acquisitions, which would be particularly harmful for small companies and startups.

Third, the brief argues that AE has reduced the need for companies to demand that inventors sign an affidavit or otherwise expressly warrant a patent's validity. Such express representations might help offset the impact of the inventor's self-serving testimony in court, but because there had been no need to take these defensive measures in light of longstanding law, in the past many companies may not have sought them.

Fourth, the brief argues that companies may have invested in product development with the understanding that the inventors on patents that cover the products would not be able to challenge the patents' validity. Particularly where an inventor has left the company to form a competitor, this consideration can be significant in a choice to invest in one product over another.

Fifth, the brief argues that companies might have negotiated different business relationships with the inventors of their patents had it not been for AE. Without the protections afforded by AE, companies might have protected themselves in other ways, such as by employing inventors for longer periods after an acquisition of a smaller company, negotiating other ongoing business relationships with them, or relying on more restrictive non-compete agreements.

PhRMA rejects the assertion of Engine and the IP professors that AE inhibits innovation and mobility, arguing that instead, by bolstering the prospect that inventors will not undermine companies intellectual property, AE gives companies more confidence and allows for shorter and less restrictive relationships between inventors and companies, thereby facilitating mobility.

PhRMA also argues that limiting AE to patent claims that were specifically contemplated at the time of an assignment would significantly diminish the value of patent assignments, given that claim amendments and the introduction of new patent claims are common occurrences in the course of patent prosecution.

Another amicus brief supporting respondents and AE was filed by a pharmaceutical company, United Therapeutics, which was at the time of filing actively litigating the issue of AE with a would-be competitor in a patent infringement lawsuit involving the drug Tyvaso®.[47] According to the brief, that potential competitor hired a former United Therapeutics employee to develop its directly competing product, and now seeks to invalidate a patent assigned by the former employee to United Therapeutics.[48]

The United Therapeutics brief emphasizes the importance of a stable patent system, and argues that for years attorneys have drafted and negotiated assignment agreements in view of, and in reliance on, the doctrine of AE. As a consequence, the valuation of an assigned patent, or patent application, has been based in part on an assumption that the assignor, and those in privity with

[47] See United Therapeutics Corp. v. Liquidia Techs., Inc., C.A. No. 20-755 (D. Del.).
[48] Brief for United Therapeutics Supporting Respondent, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 1253644.

the assignor, would be estopped from challenging the validity of the assigned patent. United Therapeutics argues that:

> If an assignee knows that the assignor-typically the better-informed party in an assignment transaction-cannot challenge the patent's validity in the future, the assignee need not spend time and energy negotiating provisions barring such challenges. Moreover, the assignee naturally would be willing to pay more for the patent rights than it otherwise would. And assignors reap the financial rewards that come from this increased value.
>
> In contrast, if assignor estoppel did not exist, assignees might seek contractual assurances regarding the validity of the patent; the assignor's participation (or not) in future proceedings involving patent validity; and the nature and circumstances of the invention, such as the exact contribution of each inventor. Additionally, assignees might seek noncompete assurances to avoid potentially litigating validity with competitors acting in concert with the assignor.

The brief goes on to argue that:

> [AE] avoids placing the latter in a lose-lose position-having to choose between denigrating their prior invention to support invalidity or providing testimony potentially devastating to their current employer and, thus, their continued employment. Assignor estoppel prevents inventors from being used as pawns in patent infringement litigation. . . . [Far] from "stifling inventor mobility," estoppel allows employers to grant their inventor-employees a greater degree of freedom than they otherwise might. . . . In the long run, perversely, the uncertainty created by the elimination of assignor estoppel could hurt employees, especially in innovative industries where patents are among companies' most valuable assets. Absent assignor estoppel, employers would have strong incentives to lock employees up with noncompete and other agreements.

The third amicus brief filed in support of respondents was filed by jointly two companies that have recently benefitted from assignor estoppel, Leading Technology Composites, Inc.[49] and ClarkDietrich.[50] These companies voice concern that they might need to resort to the doctrine in the future to estop an assignor from challenging the validity of patents assigned to the companies.[51] The counsel of record in the case is Daniel Ortiz of the University Of Virginia School of Law's Supreme Court Litigation Clinic.

The Leading Technology Composites/ClarkDietrich brief argues that a robust doctrine of AE promotes public policy in three ways:

> First, it reduces assignor opportunism by minimizing the incentives assignors have to withhold from assignees and the PTO harmful information bearing on patent

[49] Leading Tech. Composites, Inc. v. MV2, LLC, No. CCB-19-1256, 2020 WL 790601 (D. Md. Feb. 18, 2020).
[50] California Expanded Metal Prods. Co. v. Klein, No. CV 16-05968, 2017 WL 870734 (C.D. Cal. March 3, 2017); California Expanded Metal Prods. Co. v. Klein, No. C18-0659, 2018 WL 6249793 (W.D. Wash. Nov. 29, 2018).
[51] Brief for Leading Technology Composites, Inc. and Clarkwestern Dietrich Building Systems LLC as Amici Curiae in Support of Respondents, Minerva Surgical Inc., Petitioner v. Hologic, Inc., Respondents, 2021 WL 1298532.

> validity. Second, it makes both assignors and assignees better off ex ante. When assignors know that they will be unable to challenge patents they assign, the patents themselves become more reliable protections of investment and thus more valuable. Third, by reducing assignor opportunism, assignor estoppel leads to fewer poor patent applications and issued patents, thus increasing the reliability of the patent system overall.

With respect to assignor opportunism, the companies argue that, absent a robust doctrine of AE, some employee-inventors will be incentivized to withhold information from their employers (and the PTO) that could be detrimental to the validity of patent claims being pursued by the employer. The rationale would be that the employee would be able to reap the benefits of withholding the information and facilitating issuance of patent claims that would not have issued had the information been disclosed. The benefit for the employee could come in the form of a job promotion, a raise in salary, a bonus, or, if nothing else, simply the salary received by the employee. The employee-inventor could then leave the company and go on to work with a competing company, infringe the patent he has assigned to his former employer, and then, if sued for infringement, use the withheld information to invalidate his own patent. The brief argues that AE prevents this sort of opportunism by preventing the former employee and his new company from using the withheld information to invalidate the patent, thereby eliminating the incentive to withhold the information in the first place.

As an aside, it seems to me that the most likely scenario in which withheld information could be used to invalidate a patent would involve prior art, and as long as that prior art exists in a printed publication, under *Arista Networks* (and *Hologic*) that prior art could be used by the assignor to invalidate the patent through an IPR proceeding. Furthermore, I think it's unlikely that many employee-inventors are consciously considering the scope of the doctrine of AE when deciding whether or not to disclose relevant information regarding a patent application to their employer.

In any event, the brief argues that, by discouraging this sort of employee opportunism, AE encourages employees to disclose potentially invalidating information early, which allows for a more thorough evaluation by the PTO during the examination process, which ultimately translates into improved patent quality.

The brief goes on to argue that AE discourages other types of opportunism:

> like when inventors develop a separate invention that their employer would reasonably believe a patent it is considering prosecuting on an earlier invention of theirs would block [sic]. Without assignor estoppel, these inventors might shop around that second invention, promising to reveal information to the assignee's competitors that would invalidate any earlier patent. But, with assignor estoppel, the inventors cannot do so.

The brief reiterates the argument that AE benefits employee-inventors and other assignors by increasing the value of assigned patent rights, and warns:

> Without assignor estoppel, an assignee who worries that the assignor is withholding harmful information in order to later impeach the patent (thereby making any investments worthless) will pay less-possibly much less-for the patent

> ex ante. Unless assignees undertake expensive and time-consuming investigations, information asymmetries will prevent them from distinguishing between assignors who have properly disclosed validity information and those who have not. Thus, absent assignor estoppel, the valuation of all patents is undermined. But, when an assignor cannot challenge the validity of an assigned patent, the assignee will fear less that any potential assignor is hiding information essential to judging the patent's value and reliability. This increased certainty in the invention's value will make investment in development and commercialization of the invention more secure, and thus the patent itself more valuable.

The Supreme Court's decision in *Minerva*

In a split decision, a five Justice majority held in *Minerva* that AE remains good law, but went on to clarify that its reach extends "only so far as the equitable principle long understood to lie at its core." [52] Writing for the majority, Justice Kagan found that the Federal Circuit has been applying the doctrine too expansively, and clarified that AE is only applicable when an assignor's claim of invalidity contradicts explicit or implicit representations he made when assigning the patent. The majority found no need to rely on stare decisis in upholding the continuing vitality of AE, given that contemporary patent policy—specifically, the need to weed out bad patents—does not support overthrowing assignor estoppel. The Court explained that :

> the core of assignor estoppel [is] justified on the fairness grounds that courts applying the doctrine have always given. Assignor estoppel, like many estoppel rules, reflects a demand for consistency in dealing with others. When a person sells his patent rights, he makes an (at least) implicit representation to the buyer that the patent at issue is valid—that it will actually give the buyer his sought-for monopoly. In later raising an invalidity defense, the assignor disavows that implied warranty. And he does so in service of regaining access to the invention he has just sold. As the Federal Circuit put the point, the assignor wants to make a "representation at the time of assignment (to his advantage) and later to repudiate it (again to his advantage)." *Diamond Scientific*, 848 F.2d at 1224. By saying one thing and then saying another, the assignor wants to profit doubly—by gaining both the price of assigning the patent and the continued right to use the invention it covers. That course of conduct by the assignor strikes us, as it has struck courts for many a year, as unfair dealing—enough to outweigh any loss to the public from leaving an invalidity defense to someone other than the assignor.

The Court went on to note that:

> What creates the unfairness is contradiction. When an assignor warrants that a patent is valid, his later denial of validity breaches norms of equitable dealing. And the original warranty need not be express[;] the assignment of specific patent claims carries with it an implied assurance. But when the assignor has made neither explicit nor implicit representations in conflict with an invalidity defense, then there is no unfairness in its assertion. And so there is no ground for applying assignor estoppel.

[52] Minerva Surgical, Inc. v. Hologic, Inc., 141 S. Ct. 2298 (2021).

The Court went on to provide the following specific examples of scenarios where AE is not applicable:

> (1) when the assignment occurs before an inventor can possibly make a warranty of validity as to specific patent claims, e.g., an employee assigns to his employer patent rights in any future inventions he develops during his employment, and the employer then decides which, if any, of those inventions to patent;
>
> (2) when a later legal development renders irrelevant the warranty given at the time of assignment, e.g., the governing law changes in a manner that renders previously valid patent claims invalid; and
>
> (3) when an inventor assigns a patent application, rather than an issued patent, and the patent claim that ultimately issues is materially broader than the claims appearing in the originally assigned application.

The Court found that the Federal Circuit, in both its opinion below and in its prior AE decisions, had failed to recognize those boundaries. For example, Minerva had argued before the Federal Circuit that estoppel should not apply because the claim it was challenging is materially broader than the ones Truckai had assigned, but that court had declined to consider the alleged disparity in scope. Citing circuit precedent, the Federal Circuit found it to be "irrelevant" whether Hologic had expanded the assigned claims. The Supreme Court held that the Federal Circuit had erred in this regard, and for that reason the case was remanded to the Federal Circuit to address the issue it had initially thought irrelevant, i.e., whether Hologic's new claim is materially broader than the ones Truckai assigned.

Justice Alito filed a dissenting opinion in *Minerva,* arguing that the writ of certiorari should have been dismissed as improvidently granted. Justice Barrett (with whom Justices Thomas and Gorsuch joined) filed her own dissenting opinion, arguing that assignor estoppel was abrogated by the Patent Act of 1952. These Justices argue that that the Patent Act of 1952 does not incorporate the doctrine, and that the Court lacks authority to develop federal common law on the subject.

Concluding thoughts

Moving forward, my prediction is that the doctrine of AE will, for the most part, not have a dramatic impact on the activities of biotechnology and pharmaceutical companies, with respect to decisions on hiring, investment in research and product development, and patenting. The requirement of privity should generally restrict the applicability of the doctrine to cases in which an assignor plays a key role in the infringing activities of another company, as either a company founder, a major shareholder, and/or a top-level executive. And the Federal Circuit's determination that AE does not apply to IPR's is a very significant safety valve. Leading Technology Composites and ClarkDietrich voiced concern in their amicus brief that, absent a robust doctrine of AE, some employee-inventors will be incentivized to withhold potentially patent-invalidating information from their employers and the PTO, but the most likely

information to be withheld would be prior art, which (assuming it exists in the form of a printed publication) can be invoked by the assignor in an IPR, where AE does not apply.

The Supreme Court and Federal Circuit have both emphasized that, even when AE applies, an assignor can invoke the prior art to argue for a relatively narrow claim interpretation that avoids infringement. In their amicus brief, the IP professors argue that, as a practical matter, this safety valve has little force given that in *Phillips* the en banc Federal Circuit downplayed the role of the canon of claim construction whereby claims are interpreted in a manner to preserve their validity. But *Phillips* did not say that this canon could not be used, and I believe that, in cases in which AE applies, courts can and will interpret claims narrowly to avoid not only invalidity based on prior art, but also invalidity based on other doctrines, such as enablement/written description, indefiniteness, and patent eligibility. In *Minerva* the Supreme Court specifically refers to the statement in *Westinghouse* regarding the ability of estopped assignors to invoke the prior art in seeking a narrow claim construction, as did the Federal Circuit in *Diamond Scientific*, and I think that when future courts find AE applicable, they will also be more open to interpreting claims narrowly in order to preserve validity, irrespective of language in *Phillips* downplaying the role of this canon of claim construction in most other contexts.

Another potential end-run around the doctrine of AE arises out of the Supreme Court's statement that AE should not apply when patent law changes in a manner that renders a previously valid claim potentially invalid. This could be particularly useful for non-prior art-based validity challenges that cannot be pursued through IPR, such as lack of enablement, indefiniteness, or patent eligibility. All of these areas of law have changed substantially in recent years: patent eligibility was rendered more restrictive in Supreme Court decisions like *Alice*, *Mayo*, and *Myriad*, the definiteness bar was raised by the Supreme Court in *Nautilus*, and Professor Lemley and others have recently argued today the Federal Circuit has dramatically heightened the bar with respect to the written description and enablement requirements as applied to genus claims. Even when AE applies, an assignor will in many cases be able to argue that the law with respect to one of these non-prior art-based requirements of patentability has changed post-assignment, opening the door to invalidity challenge.

And perhaps most significantly, the general exclusion from AE of patent claims that were drafted post-assignment, or substantially broadened post-assignment, will obviate the doctrine with respect to many, if not most, assigned patent claims, given the prevalence of continuation practice and claim amendment in patent prosecution.

Companies might respond by seeking reassignment of patent applications and issued patents from employee-inventors, especially in the case of employees deemed likely to leave and start a new company, or take a key leadership position at a competing company. For example, companies might ask their inventors to execute assignment documents each time a patent issues, or perhaps even anytime there is a substantial change in the language of the claims being prosecuted. Companies might consider providing some form of compensation for these assignments, to ensure that the assignment is viewed as "for value." And they may even make the effort to track down and seek assignments from ex-employees who have left the company but

whose patent applications are still being prosecuted. They might also be incentivized to keep inventor-employees engaged as active participants in the process of patent prosecution.